GENERAL EMBRYOLOGICAL INFORMATION SERVICE

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INTRODUCTION

To enhance the informational value of the General Embryological Information Service, and to avoid a considerable increase of its size, some changes in the presentation of the data have been made.

In the Directory of Names and Addresses, which now contains close to 3000 names; fewer names without research subjects are listed, as these entries contain incomplete and partially obsolete information (see explanation on p. 7). The number of complete entries has increased by about 10%. To save space the wording of the research subjects was shortened as much as possible. As in previous volumes the wording used on the data sheets by the investigators themselves was generally retained. Repetitions of words, and parts of entries giving too much detail were omitted; phrases such as: "research on . . ." and "studies of . . ." were cancelled; often methods were put in brackets at the end of the entry. Inevitably these condensations have caused a certain loss of information, but we feel that clarity is not seriously impaired.

Much attention was devoted to the names of experimental organisms. With only a few exceptions, for the higher animal taxa the following books have been consulted: L. A. Borradaile and F. A. Potts, The Invertebrata (4th ed., 1963) and J. Z. Young, The life of vertebrates (2nd ed., 1962). Lord Rothschild, A classification of living animals (2nd ed., 1965) was also of much use. Generally the highest taxon given at the end of the entry is the class, but in Mammalia, Reptilia, Amphibia, and Insecta it is the order, while in Crustacea and Arachnida in addition to the class the name of the order is also given.

The Book Notices section has undergone some important changes, which became necessary in view of the much greater number of books received. A smaller type was used. New subdivisions into subject categories and types of books were made, and the titles and other bibliographical data are presented in a new format.

The number of institutes listed has remained fairly constant. No new countries are listed: Jamaica and Zambia no longer appear in the list.

J. FABER
B. Z. SALOMÉ
DIRECTORY OF NAMES AND ADDRESSES
with Subjects of Research
(alphabetical order)

Unless stated otherwise, information in this directory is based upon data sheets which were sent to the institutes listed in the Directory of Institutes, and returned to the editors before October 1971. Scientists were asked to state their name, degree(s), address, and research subjects in so far as recent, unpublished work in developmental biology was concerned.

1. Complete entries (with research subjects) are entirely based on the data sheets. Subjects identical to those in vol. 13 were confirmed by the scientists still to be correct.

2. Entries without research subjects
   a. Persons listed on the sheets as being engaged in research in developmental biology, without further specification of subjects.
   b. Persons with a complete entry in vol. 13 who have not returned their sheets. Names, degrees, and addresses were reprinted unchanged from vol. 13 and may be partially out of date.
   c. Emeritus professors no longer active in research.
   d. Some persons who have not returned data sheets for two or more volumes have been listed nevertheless; cases in point are several I.S.D.B. members (marked ●).
   e. Persons listed in vol. 13 whose death has come to our attention (marked †).

3. Persons listed in vol. 13 but not in vol. 14
   a. Persons who had research subjects in vol. 13 but are no longer engaged in research in developmental biology.
   b. Persons who had no research subjects in vol. 13 and have not returned the sheets for both vol. 13 and 14.


ABEL, W. Dr. — Bot. Inst., Univ. Heidelberg, Hofmeisterweg 4, 69 HEIDELBERG, W. Germany

ABELOOS, M. Prof. — Lab. de Biol. Gén., Fac. des Sci., Place Victor Hugo, MARSEILLE, France


ABRAMOVICI, A. Dr.és Sci. — Dept. of Embryol. and Teratol., Med. School, Tel-Aviv Univ., TEL-AVIV, Israel

ABRO, A. — Inst. of Anat., Univ. of Bergen, Arstadvollen, 5000 BERGEN, Norway


ACKERMAN, G. A. M.D., Ph.D., Prof. — Dept. of Anat., Ohio State Univ., 333 W.10th Ave., COLUMBUS, Ohio 43210, U.S.A.
Morphology and histochemistry of the hemopoietic system in embryonic and adult condition. Homo sapiens and other spp. (Mammalia)

ACTON, A. B. D.Phil., Prof. — Dept. of Zool., Univ. of British Columbia, VANCOUVER 8, B.C., Canada

a Electron microscopy of the developing male accessory glands. Drosophila melanogaster (Diptera)
b Study by laser microbeam of the new spacial patterns generated by irradiation of the cytoplasm and developing cell wall. Microasterias rotata, M. denticulata, M. radiata (Desmidales) (with Th. C. LACALLI)
c Possible mathematical models for generating very non-random arrays of microscopic particles; experimental testing of the models with pore bodies in the cell wall. Same species as b (with Th. C. LACALLI)

ADAMS, C. E. Ph.D. — A.R.C. Unit of Reprod. Physiol. and Biochem., 307 Huntingdon Rd., CAMBRIDGE, CB3 0JQ, England

a Development of ova (preimplantation stages) with special reference to the maternal environment using the egg transfer technique. Orzyctolagus cuniculus (Lagomorpha)
b Sperm transport and quantitative aspects of fertilization. Orzyctolagus cuniculus (Lagomorpha)
c Delayed implantation. Meriones unguiculatus (Rodentia), Mustela vison (Carnivora)


a Endocrine regulation of ovary maturation. Musca domestica (Diptera)
b Use of endocrines to disrupt morphogenesis. Musca domestica (Diptera)

ADAMS SMITH, W. N. D.Phil., M.D., Prof. — Dept. of Anat., Med. Univ. of South Carolina, 80 Barre St., CHARLESTON, S.C. 29401, U.S.A.

a Teratogenic influences of a variety of known teratogens upon heart development. Rattus norvegicus (Rodentia)
b Influence of sex hormones upon sexual maturation of the developing brain. Rattus norvegicus (Rodentia)

ADELMANN, H. B. Dr., Prof. (Emer.) — Div. of Biol. Sci., Cornell Univ., Stimson Hall,ITHACA, N.Y. 14850, U.S.A.

ADINOLFI, A. • Prof. — Paediat. Research Unit, Guy’s Hosp. Med. School, LONDON S.E.1, England

a Ontogenesis of components of complement and lysozyme, using in vitro cultures of foetal tissues and analysis of the newly synthesized proteins by means of autoradiography of immunoelectrophoretic plates. Homo sapiens (Primates)
b The development of the histocompatibility antigens during life in utero, using extracts from foetal tissues and the inhibition of cytotoxic antibodies. Same species as a

ADLER, R. M.D. — Inst. de Anat. Gen. y Embriol., Fac. de Medicina, Paraguay 2155, BUENOS AIRES, Argentina

a Experimental neuroembryology. Gallus domesticus (Aves)
b Electron microscopy of developing nervous system. Same species as a
c Dis- and reaggregation studies of neural tube development. Same species as a

d Neural differentiation in vitro. Same species as a

AESCHLIMANN, A. Dr.phil.II, Prof. — Inst. de Biol. Anim., Univ. de Fribourg, 1700 FRIBOURG, Switzerland

AFZAL, Miss Z. Dr.d’Etat, Dr. de spéc. — Lab. de Bot., Univ. de Provence, Centre St. Charles, Place Victor Hugo, 13 MARSEILLE 3, France

d Effect of leaf primordia, lateral inflorescence primordia and apical meristem on flowering. Pism sativum (Leguminosae) (with P. A. J. NEVILLE)
b Determination of flower bilateralarity (microsurgical method). Pism sativum (Leguminosae) (with P. A. J. NEVILLE)

AFZELIUS, B. A. Fil.Dr. — Wenner-Gren Inst., Norrtullsgatan 16, S-113 45 STOCKHOLM, Sweden

a Fine structure of germ cells. (Invertebrata; Vertebrata)

AGARWAL, L. P. Prof. — Dr. Rajendra Prasad Center for Ophthalmol. Sci., All India Inst. of Med. Sci., NEW DELHI-16, India


a Histochemistry and electron microscopy of vitellogenesis. Tenebrio molitor (Coleoptera)
b Endocrine control of development. (Insecta)

AGRELL, I. P. S. Fil.Dr., Prof. — Zoophysiol. Inst., Univ. of Lund, Helgonavägen 3, 223 62 LUND, Sweden


a Effect of gonadotropins and changes in the germinal vesicle and in the oocyte cytoplasm during maturation. (Actipenseridae, Chondrostei; Amphibia) (with T. A. DETTLAFF and S. J. DAVIDOVA)

AKETA, K. D.Sc. — Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa-ku, NAGOYA, Japan

•
a Investigation of albumen uptake in embryos by means of immunofluorescent tracing of albumen proteins. *Lymnaea stagnalis* (Gastropoda)

ARONSSON, St. B. Cand.phil. — Inst. of Zool., Univ. of Gothenburg, Fack, S-400 33 GOTHENBURG 33, Sweden

a Ontogenetic appearance of the monoaminergic nerves in the median eminence. *Rana temporaria* (Anura)

ARORA, H. L. Ph.D. — Inst. of Biol. and Zool., Univ. of Sassari, SASSARI, Sardegna, Italy

ARRU, Miss A. Dr. — Ist. di Zool., Univ. di Sassari, Via Murroni 25, 07100 SASSARI, Italy

g Gonadogenesis. *Crenilabrus* spec. (Labridae), *Syngnathus* spec. (Syngnathiformes, Teleostei)

ARVIDSSON-FERNHOLM, Mrs. E. M. I. Fil.mag. — Inst. of Zool., Univ. of Gothenburg, Fack, S-400 33 GOTHENBURG 33, Sweden

a Appearance of monoamines in the embryonic sympathetic chain, adrenal medulla, and organ of Zuckerkandl (formaldehyd fluorescence). *Mus musculus* (Rodentia)

ASAKURA, K. — Biol. Inst., Fac. of Sci., Univ. of Kanazawa, Marunouchi-1, KANAZAWA, Japan

da Development and regeneration of scales. *Oryzias latipes*, *Carassius auratus* and other spp. (Teleostei)


a Changes in egg energy metabolism at fertilization. *Anthocidaris crassispina*, *Hemicentrotus pulcherrimus* (Echinidea)

b Cytochromes in the liver during development. *Rattus norvegicus* (Rodentia)

ASAYAMA, S. Prof.(Emer.) — Lab. of Embryol., Fac. of Sci., Osaka City Univ., 459 Sugimoto-cho, Sumiyoshi-ku, OSAKA, Japan

da Sex development. (Vertebrata)

ASHBY, K. R. Ph.D. — Dept. of Zool., Univ. of Durham, South Rd., DURHAM, England

a The development of the reproductive system, and the modifications induced by treatment with steroid hormones during the course of sexual differentiation. *Salmo irideus*, *S. trutta* (Teleostei)

ASHHURST, Miss D. E. D.Phil. — Dept. of Anat., Med. School, Univ. of Birmingham, Edgbaston, BIRMINGHAM B15 2TJ, England

a Development of connective tissue in the pupa: site of polymerization of collagen molecules (using labelled proline). *Galleria mellonella* (Lepidoptera)

b Autoradiography of collagen synthesis. *Locusta migratoria* (Orthoptera)

ASHWORTH, J. M. Dr. — Dept. of Biochem., Leicester Univ., LEICESTER LE 7 RH, England

ASLING, C. W. M.D., Ph.D. — Prof. — Dept. of Anat., Sch. of Med., Univ. of California, SAN FRANCISCO, Calif. 94122, U.S.A.

ASNANI, Miss M. M.Sc. — Dept. of Zool., Fac. of Sci., Univ. of Baroda, BARODA-2, India

a Liver, spleen and lymph gland regeneration. (Reptilia; Aves)

ASTAUROV, B. L. Dr.biol.sci. — Prof. — Inst. of Developm. Biol., Acad. of Sci. of the U.S.S.R., Vavilov St. 26, MOSCOW 117133, U.S.S.R.

a Artificial parthenogenesis and experimental polyplody. *Bombyx mori* (Lepidoptera)

b Overcoming male sterility in the allotetraploid bisexual strain. *Bombyx mori*, B. mandarina (Lepidoptera)

c Genetic variability in the ability to complete artificial parthenogenesis and selection by this character. Same species as b

ATHERTON, R. W. Ph.D. — Dept. of Zool.-Physiol., Univ. of Wyoming, Univ. Station Box 3166, LARAMIE, Wyo. 82070, U.S.A.

a Developmental enzymology of erythrocytes and serum. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)

b Embryonic and adult hemoglobin synthesis. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)

c Isozyme fractionation and characterization of multiple forms of proteins during development (cholinesterase). *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)

AUCLAIR, W. Ph.D., Prof. — Dept. of Biol., Rensselaer Polytechn. Inst., TROY, N.Y. 12181, U.S.A.

AUERBACH, R. Ph.D., Prof. — Dept. of Zool., Univ. of Wisconsin, 1117 West Johnson St., MADISON, Wis. 53706, U.S.A.

AUERSPERG, N. M.D., Ph.D., Prof. — Dept. of Zool., Univ. of British Columbia, VANCOUVER 8, B.C., Canada


AUGSTEN, H. Dr.inhabil., Prof. — Sect. Biol.-Pflanzenphysiol., Friedrich-Schiller Univ., von-Haze-Weg 3, 69 JENA, East.Germany

AUGUSTI (TOCCO), Mrs. G. Dr. — Lab. di Embriol. Molec., Via Toiano 2. 80072 ARCO FELICE, Napoli, Italy
AUROUX, M. Dr.en Méd. — Lab. d’Histol.-Embryol. A. Fac. de Méd., 45 rue des Sts. Pères, 75 PARISVIe. France

a Développement normal et anormal de l’encéphale. Rattus rattus (Rodentia), Homo sapiens (Primates)
b Perturbations tardives du système nerveux central compatibles avec la vie (baisse de la capacité d’apprentissage). Rattus norvegicus (Rodentia)
c Influence de la nutrition de la mère sur le développement du système nerveux central de la progéniture; amélioration de la capacité d’apprentissage de la progéniture. Rattus rattus (Rodentia)

AUSTIN, C. R. D.Sc. — Marshall Lab., Dept. of Physiol., Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3EG, England

a Investigations on gametes, fertilization and early development. Rattus spec., Mus musculus, Mesocricetus auratus (Rodentia), Oryctolagus cuniculus (Lagomorpha)
b Induced and spontaneous anomalies of development. Same species as a

AVIVI, Y. M.S. — Dept. of Zool., Tel-Aviv Univ., 155 Herzl St., TEL-AVIV, Israel

a Transformation of histones to protamines during spermatogenesis. Tilapia spec. (Cichlidae, Teleostei)

AXELROD, L. R. Ph.D. — Div. of Biol., Growth, and Developm., Southwest Found. for Res. and Educ., P.O.Box 28147, SAN ANTONIO, Tex. 78228, U.S.A.

AYKAÇ, I. D.V.M. — Prof. — Inst. of Histol. and Embryol., Med. Fac., Atatürk Univ., ERZURUM, Turkey

(no embryological work in progress)

AZAR (GEALIJA), Mrs. I. M.Sc. — Dept. of Zool., Hebrew Univ. of Jerusalem, JERUSALEM, Israel

a Autoradiography of cell migrations between epiblast and hypoblast, and their possible role in embryonic differentiation. (Aves)

AZQUIBEL, R. M.D., Ph.D. — Dept. de Morfol. Hum. Funct. e Aplic., Univ. de São Paulo, C.P. 301, RIBEIRAO PRÊTO, S.P., Brazil

BABA, S. D.Sc. — Dept. of Bio., Fac. of Sci., Kyoto Univ., KYOTO, Japan 606

a Pre-pattern phenomenon of localization of enzymatic activity prior to the formation of wound vessel member. Coleus blumei (Labiateae) (with L. W. ROBERTS)
b Effect of environment on morphogenesis of vascular elements. Coleus blumei (Labiateae) (with L. W. ROBERTS)

BABAYEVA, Mrs. A. G. Dr.med.sci. — Inst. of Human Morphol., Acad. of Med. Sci. of the U.S.S.R., Baltiyskaya St. 8, MOSCOW 125315, U.S.S.R.

a The immunological mechanisms controlling the processes of compensatory hypertrophy and regeneration of parenchymal organs. Mus musculus, Rattus norvegicus (Rodentia)

a Histochemistry of giant nuclei in yolk sac syncytium. Esox lucius (Teleostei)


a Biochemical and ultrastructural parameters of mitochondrial differentiation in respiratory-deficient mutants. Saccharomyces cerevisiae (Saccharomycetales)

BACKHOUSE, K. M. VRD — Royal Coll. of Surgeons of England, Lincoln’s Inn Fields, LONDON WC2A 3PN, England

a Gubernaculum testis and testicular descent. Hapale jacchus, Macaca mulatta, Homo sapiens (Primates)

BACKHOUSE, Miss M. B.Sc. — Dept. of Anat. and Embryol., Univ. Coll. London, Gower St., LONDON WC1E 6BT, England

a Cell junctions in the embryo. Gallus domesticus (Aves)
b Cell migration in the embryo. Gallus domesticus (Aves) (with M. R. BELLAIRS)

BACKSTRÖM, S. A. A. Fil.Dr. — Wenner-Gren Inst., Norrtullsgatan 16, S-113 45 STOCKHOLM, Sweden

a Basic proteins during oogenesis and early development (biochemistry, histochemistry, autoradiography). Paracentrotus lividus, Psammechinus miliaris (Echinoidea)


a Analysis of growth control (tissue and humoral factors) of liver tissue in ontogenetic, regenerative, and neoplastic growth. Mus musculus (Rodentia)
b Ultrastructure of the pars distalis of the hypophysis in animals bearing hepatomas. Mus musculus (Rodentia)


a Cytology of embryonic retardation and activation. (Carnivora, Insectivora, Rodentia)
b State of maternal endocrine glands during embryonic diapause and activation. (Carnivora, Insectivora, Rodentia)


a Analysis of growth control (tissue and humoral factors) of liver tissue in ontogenetic, regenerative, and neoplastic growth. Mus musculus (Rodentia)


a Analysis of growth control (tissue and humoral factors) of liver tissue in ontogenetic, regenerative, and neoplastic growth. Mus musculus (Rodentia)


a Cytology of embryonic retardation and activation. (Carnivora, Insectivora, Rodentia)
b State of maternal endocrine glands during embryonic diapause and activation. (Carnivora, Insectivora, Rodentia)


a Analysis of growth control (tissue and humoral factors) of liver tissue in ontogenetic, regenerative, and neoplastic growth. Mus musculus (Rodentia)


a Cytology of embryonic retardation and activation. (Carnivora, Insectivora, Rodentia)
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a Analysis of growth control (tissue and humoral factors) of liver tissue in ontogenetic, regenerative, and neoplastic growth. Mus musculus (Rodentia)


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a Analysis of growth control (tissue and humoral factors) of liver tissue in ontogenetic, regenerative, and neoplastic growth. Mus musculus (Rodentia)


a Analysis of growth control (tissue and humoral factors) of liver tissue in ontogenetic, regenerative, and neoplastic growth. Mus musculus (Rodentia)
Regeneration
Incorporation
Differentiation
Comparative Studies
Neoplasms
Ultrastructure
Incubation
Oogenesis.
Control
Structure
Cytoplasmic Ultrastructure
The Cytology
Assessment

BAGNARA, B. M.D., Prof. — Narutowicza 94-9, ŁÓDź, Poland
BAGLIIONI, C. M.D., Prof. — Dept. of Biol., Massachusetts Inst. of Technol., CAMBRIDGE, Mass. 02139, U.S.A.
BAGNARA, J. T. Ph.D., Prof. — Dept. of Biol. Sci., Univ. of Arizona, TUCSON, Arizona 85721, U.S.A.

a Various aspects of the development and endocrinology of pigmentation. Many spp. (Amphibia)
b Ultrastructure of chromatophores. Many spp. (Amphibia)
c Developmental physiology of xanthophores, erythrophores, and iridophores. Many spp. (Amphibia)
d Neural crest: pattern formation on dorsal surface. (Anura)

BAKER, G. T. Ph.D. — Dept. of Physiol., Univ. of Miami Med. School, P.O. Box 875, Biscayne Annex, MIAMI, Florida 33152, U.S.A.

a Age-dependent changes in enzymatic activities correlated with morphological and physiological manifestations of aging flight muscle. Musca domestica (Diptera)

BAKER, J. R. Ph.D., Prof. — Dept. of Zool. and Entomol., Iowa State Univ., Ames, Iowa 50010, U.S.A.

a Incorporation and transport of labeled metabolites by early stage blastoderms in vitro. Gallus domesticus (Galliformes). Pygoscelis adelie (Spheniscidae, Aves)
b Incubation physiology and growth rate of early embryonic stages. Pygoscelis adelie (Aves)
c Comparative studies of yolk ultrastructure. Various spp. (Aves)

BAKER, MRS. P. C. Ph.D. — Dept. of Zool., Univ. of California, BERKELEY, Calif. 94720, U.S.A.
a The ultrastructural morphology and histochemistry of cells undergoing morphogenetic movement. Hyla regilla, Rana pipiens, Xenopus laevis (Anura)
b The ultrastructure of wound healing. Same species as a

ULTRASTRUCTURE OF SKELETAL MYOBLASTS. Gallus domesticus (Aves)

BAKER, R. F. Ph.D. — Dept. of Biol. Sci., Univ. of Southern California, University Park, LOS ANGELES, Calif. 90007, U.S.A.

a Developmental genetics and regulation of macromolecular synthesis. (Echinoidea)

BAKER, T. G. Ph.D. — Hormone Lab., Dept. of Obstet. and Gynaecol., Univ. of Edinburgh, Chalmers St., EDINBURGH 3, Scotland, U.K.

a Oogenesis. (Primates)
b The effects of X-rays on female germ cells. (Rodentia; Primates)
c The fine structure and metabolic activity of oogonia and oocytes. (Rodentia; Primates)
d Cytology and endocrinology of ovulation, fertilization, and early development in vitro. Rattus norvegicus, Mus musculus (Rodentia). Homo sapiens and other Primates
e Ultrastructure and hormonal control of the placenta in organ culture. Homo sapiens (Primates)

BAKER, W. K. Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, CHICAGO, Ill. 60637, U.S.A.

BAL, A. K. D.Phil. — Dept. of Biol., Memorial Univ. of Newfoundland, ST. JOHN’S, Nfld., Canada

a Ultrastructure of cells in bulb root meristem: changes during differentiation, H3-thymidine autoradiography. Allium cepa (Liliaceae)

Oogenesis. Strongylocentrotus drobachiensis (Echinoidea)

BALAKRISHNAN, S. F.R.C.P., Prof. — Dept. of Anat., Jawaharlal Inst. of Postgrad. Med. Educ. and Research, PONDICHERRY-6, India

a Assessment of gestational age of the new-born. Homo sapiens (Primates)

BALINSKY, B. I. Dr.Biol.Sci., Prof. — Dept. of Zool., Univ. of the Witwatersrand, Milner Park, JOHANNESBURG, S.Africa

a Cytoplasmic control of differentiation. Bufo spec. (Anura)


a Morphogenetic movements in embryos. (Teleostei)

Monograph on developmental anatomy. Ambystoma spec. (Urodela)

BALLS, M. D.Phil. — School of Biol. Sci., Univ. of East Anglia, University Plain, NOR-WICH, NOR 88C, England

a Neoplasms particularly of lymphoid tissue. Xenopus laevis (Anura)
b Control of cell division. Xenopus laevis (Anura), Amphiuma means, Triturus cristatus (Urodela)

BALON, E. K. Ph.D. — Lab. of Fish. Res., Zelezna Studienka 806, BRATISLAVA, Czechoslovakia

BALTUS, Miss E. J. D.Sc. — Lab. de Cytol. et Embryol. Moléc., Univ. libre de Bruxelles, 67, rue des Chevaux, 1640 RHODE-ST-GENESE, Belgium

a Studies on DNA synthesis during oogenesis. (Amphibia)
Evolution
Caste
Interaction
Induction
Dr.,
Effect
Mechanism
Ultrastructural
Electron
Rhythmicity
Chemical
Postnatal
RNA/DNA
Morphogenetic
Morphogenesis
Physiological

BARNARD, BARNARD,

BART,

BARGMAN,

BARASA,

BARIGOZZI,

BANERJEE,

b Evolution of cytoplasmic DNA during embryonic development. (Amphibia)
BALTZER, F. Dr., Prof.(Emer.) — Zool. Inst., Univ. Bern, Sahlistr. 8, 3012 BERN, Switzerland
a Mechanism of cell-to-cell adhesion. Acanthamoeba (= Mayorella) palestinensis (Rhizopoda)
b Induction of amitosis in unicellular clones leading to daughters with varying portions of the original nucleolus. Acanthamoeba (= Hartmannella) rhysodes (Rhizopoda)
BANERJEE, B. Ph.D. — Dept. of Entomol., Tea Research Assoc., Tocklai Exper. Station, JORHAT-8, Assam, India
a Caste development. Odontotermes redemanni (Isoptera)
b Rhythmicity in development and role of extraneous factors on development. (Diplopoda)
a Immunochemistry of eye lens. retina, and iris development. Gallus domesticus (Aves)
BARASA, A. Ist. di Istot. ed Embriol. Gener., Via Nizza 52, 10126 TORINO, Italy
a Morphogenetic processes of the wing following removal of some parts. Gallus domesticus (Aves)
b Effect of subnormal temperatures on mitosis of cells cultured in vitro. (Aves)
c Mitoses of binucleate cells. (Aves)
d Effect of mitostatic agents on nerve fibres growing in vitro. (Aves)
BARBAGALLO (PATTI), Mrs. J. Dr. — Ist. di Zool., Univ. di Catania, Via Androne 81, 95124 CATANIA, Italy
a Physiological and experimental embryology of the earliest developmental stages. Porcello laevis (Isopoda)
BARBIERI, P. D. Dr.Biochem., Prof. — Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina
a Chemical factors involved in fertilization: jelly coats and diffusible factor. Bufo arenarum (Anura)
BARBOSA AYUCAR, E, Dr. en Med. — Serv. de Embriol. Exper., Cat. de Anat., Univ. de Valladolid, VALLADOLID, Spain
a Effect of puromycin on morphogenesis. Gallus domesticus (Aves)
a Interaction of sperm and egg substances. Rana pipiens (Anua)
b Nature of antibody effects on fertilization. Rana pipiens (Anura)
BARGMAN, G. M.D. — Central Lab. for Human Embryol., Dept. of Pediat., Univ. of Washington, Seattle, Wash. 98105, U.S.A.
a Electron transport enzyme system in developing embryos and achondroplastic cartilage.
b Karyotyping of defects. Homo sapiens (Primates)
BARIGOZZI, C. Dr.Sci., Prof. — Ist. di Genet., Univ. di Milano, Via Celoria 10, 20133 MILANO, Italy
a DNA replication in cells cultured in vitro. Drosophila melanogaster (Diptera)
b Biology of established cell lines. Drosophila spec. (Diptera)
BARNARD, P. B. T. Fil.Dr. — Wenner-Gren Inst., Norrtullsgatan 16, S-113 45 STOCKHOLM, Sweden
a Ultrastructural and chemical differentiation of brown adipose tissue in pre- and neonatal animals, especially mitochondrial changes. Rattus norvegicus (Rodentia)
a Developmental and cytogenetics including nucleolar cytolgy, chromosome replication patterns, quinacrine staining and position effect variegation. Drosophila spec. (Diptera)
BARSACCHI, Miss G. Dr.Biol.Sci. — Ist. di Zool. e Anat. Comp. dell'Univ., Via A. Volta 4, 56100 PISA, Italy
a In vitro induction of oocyte maturation by hormones. Triturus spp. (Urodela)
b RNA/DNA cyto logical hybridization on lampbrush chromosomes. Same species as a
BARSON, A. J. M.D. — Dept. of Pathol., Univ. of Manchester, Williamson Bldg., Brunswick St., MANCHESTER M13 9PL, England
a Craniospinal dysraphia produced by rabbit antibodies to chick nervous tissue. Gallus domesticus (Aves)
b Postnatal segmental growth rates of spinal cord and vertebral column relative to each other. Homo sapiens (Primates)
BART, A. — Serv. de Biol. Anim., Univ. des Sci. et Techn. de Lille, B.P. 36, 59 VILLENEUVE-D'ASCQ, France
a Morphogenesis and regeneration. Carausius morosus (Phasmida)
BARTELS, P. G. Prof. — Dept. of Biol. Sci., Univ. of Arizona, TUCSON, Ariz. 85721, U.S.A.
BARTH, L. G. Ph.D., Prof. — Marine Biol. Lab., Box 27, WOODS HOLE, Mass. 02543, U.S.A.
BARTH, Mrs. L. J. Ph.D. — Marine Biol. Lab., Box 27, WOODS HOLE, Mass. 02543, U.S.A.

BARTH, R. H., Jr. Ph.D. — Dept. of Zool., Univ. of Texas, AUSTIN, Tex. 78712, U.S.A.
a Physiology of reproduction: role of corpora allata and neurosecretory system in control of reproductive behavior and physiology, and regulation of the reproductive cycle of the female. Byrsotria fumigata, Leucophaea maderae, Nauphoeta cinerea and other spp. (Blattariae)


BARTOS, F. RNDr., C.Sc., Prof. — Dept. of Biol., Charles Univ., Šímkova 870, HRADEC KRALOVÉ, Czechoslovakia

BATTLE, Miss H. I. Ph.D., Prof. — Dept. of Zool., Coll. of Sci., Univ. of W.Ontario, LONDON 72, Ont., Canada

a Morphometry of placenta; comparison of placental villous surface with the body of uterus and placenta during pregnancy. Felis domesticus, Sus domesticus, Bos taurus, Homo sapiens and other species (Mammalia)

BAUTZ (PORTMANN), Mrs. A.-M. Lic.ès Sci. — Lab. de Zool. 2e cycle, Boulevard des Aiguillettes, 54 NANCY, France
a Les cellules larvaires et imaginales dans le développement de l’abdomen. Calliphora erythropoeana. (Diptera)
b Effet des rayons X sur la régénération. Nereis diversicolor (Polychaeta)

BAVEJA, Miss R. M.S. — Dept. of Obstet. and Gynecol., M.L.N. Med. Coll., Univ. of Allahabad, ALLAHABAD-1, India
a Role of endometrium and extraplacental membranes in the fetomaternal exchange process (histo- and cytochemistry). Homo sapiens (Primates) (with H. C. VARMA)

a Biology, including development and metamorphosis. Petromyzon spec. (Cyclostomata)

BAVEJA, Miss R. M.S. — Dept. of Obstet. and Gynecol., M.L.N. Med. Coll., Univ. of Allahabad, ALLAHABAD-1, India

BAUVIN, M. M.D., Prof. — Lab. of Anat. Comp., Fac. des Sci. d’Orsay, Univ. de Paris, Bâtiment 441, 91 ORSAY, France

BEAUMONT, Miss H. M. Ph.D. — Dept. of Anat., Med. School, Univ. of Birmingham, Edgbaston, BIRMINGHAM B15, 2TJ, England
a Spontaneous and radiation-induced atresia of oocytes, especially developmental capacity of oocytes from aged, superovulated and irradiated animals. (Rodentia)

BEAUJARD (CREPY), Mrs. D. Drès Sci. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France
a Localisation et apparition de la hypoxanthine déshydrogénase dans différents organes de l’embryon. Gallus domesticus (Aves)
b La différenciation chimique du pancréas de l’embryon. Gallus domesticus (Aves) (avec F. DIETERLEN)

BEAUPAIN (CREPY), Mrs. D. Drès Sci. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France
a Effets des rayons X sur la survie et sur la synthèse d’ADN des nodules cancéreux en culture organotypique de longue durée. Homo sapiens (Primates)

BEBBINGTON, A. M.Sc., M.I.Biol. — Dept. of Zool., Univ. of Bristol, BRISTOL BS8 1UG, England

a The effect of trypan blue on development. Rattus spec. (Rodentia), Mustela putorius furo (Carnivora)
b Embryonic nutrition. Same species as a
c The postnatal maturation of intestinal epithelium. Rattus spec., Cavia cobaya (Rodentia), Oryctolagus cuniculus (Lagomorpha), Mustela putorius furo (Carnivora)

BECKER, H. J. Ph.D., Prof. — Zool. Inst. der Univ., Luisenstr. 14, 8000 MUNCHEN 2, W.Germany
BECKER, V. Dr.med., Prof. — Pathol. Inst. der Freien Univ. Berlin, Klin. Westend, Span-
dauer Damm 130, 1 BERLIN 19, W.Germany a General and special pathology of placenta. (Mammalia) 

BEERMANN, W. Dr.rer.nat. Prof. — Max Planck Inst. für Biol., Spemannstr. 34, 74 TÜ-
BINGEN, W.Germany 

BEETSCHEN, J. C. Dr.ès Sci., Prof. — Lab. de Biol. Génér., Univ. Paul-Sabatier, 118 Route 
de Narbonne, 31 TOULOUSE 04, France a Experiments on the differéntiation of cultured embryonic cells. (Urodela) (with A. M. 
DUPRAT) b The recessive semi-lethal factor ac: temperature-sensitivity of homozygous mutants; 
maternal effect in the progeny of mutant females. Pleurodeles waltliti (Urodela) 
c Genetical aspects of protein differentiation in embryonic stages. Same species as b (with 
F. GASSER) 

BEHRMAN, S. J. M.D., Prof. — Dept. of Obstet. and Gynecol., Center for Research in 
48104, U.S.A. a Antigenicity of the trophoblast. Oryctolagus cuniculus (Lagomorpha), Mus musculus 
(Rodentia), (Primates) b Sperm antibodies. Homo sapiens (Primates) 

BEIDERBECK, R. Dr. — Bot. Inst., Univ. Heidelberg, Hofmeisterweg 4, 69 HEIDELBERG, 
W.Germany a Crown gall induction; tumor-inducing-principle. Bryophyllum daigremontianum, and other 
species (Angiospermae) 

BEIJER, H. M. Dr.rer.nat. — Anat. Inst., Univ. Marburg, Robert-Koch-Str. 6, 355 MARBURG/ 
Lahn, W.Germany a Experimental developmental morphology of preimplantation stages, postimplantation stages 
and their endocrinological developmental control. Oryctolagus cuniculus (Lagomorpha), 
Cavia porcellus. Rattus spec. (Rodentia) b Specific uterine proteins (e.g. uteroglobin) and their hormonal controlled interference with 
blastocyst development. Oryctolagus cuniculus (Lagomorpha), Homo sapiens (Primates) 

BEIN BRECH, G. Dr. — Inst. für Zellphysiol., Abt. für Biol., Ruhr Univ., Buscheysr., Post-
fach 2148, 463 BOCHUM, W.Germany a Development of muscles during metamorphosis: formation of the myofibrils and of the 
sarcotubular system. Phormia regina (Diptera) b Formation of contractile myofibrils in asynchronous indirect flight muscles during meta-
morphosis. Phormia terrae-novae (Diptera) 

19, Rokitnica, ZABRZE 8, Poland 

BELL, E. Ph.D., Prof. — Dept. of Biol., Massachusetts Inst. of Technol., 77 Massachusetts 
Ave., CAMBRIDGE, Mass. 02139, U.S.A. a Information transfer and regulation between nucleus and cytoplasm in differentiating cells. 
Gallus domesticus (Aves), Mus musculus (Rodentia) b Regulation of macromolecular synthesis in the developing lens. Gallus domesticus (Aves) 

BELL, L. G. E. Ph.D. — Dept. of Zool., Univ. of Southampton. SOUTHAMPTON SO9 
5NH, England a Membrane mediated control of cell behaviour, especially movement. (Amoeba proteus) 
(Rhizopoda) b The changing relationship between nucleus and cytoplasm during the cell cycle. (Amoeba 
proteus) (Rhizopoda) 

BELLAIRS, A. d’A. D.Sc., Prof. — Dept. of Anat., St. Mary’s Hosp. Med. School, Padding-
ton, LONDON W.2, England a Morphogenesis of skeleton. (Reptilia; Aves; Mammalia) b Embryonic membranes. (Reptilia) 
c Regeneration. (Reptilia) 

St., LONDON WC1E 6BT, England a Electron microscopy and histochemistry of yolk formation. Gallus domesticus (Aves) (with 
M. A. ENGLAND, Royal Free Hosp.) b Cell migration within the embryo. Gallus domesticus (Aves) (with M. BACKHOUSE) 

BELLW A R, E. T. B.Sc. — Dept. of Zool., Coll. of Sci., Univ. of W.Ontario, LONDON 72, 
Ont., Canada 

BELOUSOY, I. V. Cand.biol.sci. — Chair of Embryol., Biol. Fac., State Univ. of Moscow, 
Lenin Hills, MOSCOW B-234, U.S.S.R. a Spatial distribution and physical nature of the forces involved in shaping of epithelial 
layers. Obelia spec., Dynamena spec. (Hydrozoa; Amphibia) b Metabolic gradients, their physico-chemical nature and interrelations with morphogenetic 
processes (development of planula, budding). Obelia spec., Hydra spec. (Hydrozoa; 
Echinodermata) 

BENAZZI (LENTATI), Mrs. G. Prof. — Ist. di Zool. e Anat. comp. dell’Univ., Via A. Volta 
4, 56100 PISA, Italy
BERGER, J. D. Ph.D. — Dept. of Zool., Univ. of British Columbia, VANCOUVER 8, B.C., Canada
  a Nuclear differentiation. RNA synthesis and gene expression. Paramaecium aurelia (Ciliata)

BERGERARD, J. Dr.és Sci., Prof. — Lab. de Zool., Centre d'Orsay, Univ. Paris-Sud, 91 ORSAY, France
  a Effects of thermal stress on sexual differentiation. Carausius morosus (Phasmdida)
  b Effects of thermal stress and supernumerary chromosomes on development. Locusta migratoria (Orthoptera)

BERGQUIST, H. Ph.D. — Inst. of Zool., Univ. of Gothenburg, Fack. S-400 33 GOTHENBURG 33, Sweden
  a Electron microscopy of neural tube. Gallus domesticus (Aves)
  b Experimental ontogenesis of the central nervous system. Same species as a

BERLYN, G. P. Ph.D., Prof. — Sch. of Forest., Yale Univ., 205 Prospect St., NEW HAVEN, Conn. 06511, U.S.A.

  a Electrophysiology of the physiological heart. Rattus norvegicus, Cavia porcellus (Rodentia)

  a Histogenesis and morphogenesis of the digestive tract. (Teleostei)

BERNDORFER, A. Dr.med.habil. — Childrens Hosp. "Paul Heim", Dept. for Congenital Malformations, Ulïiï ûi 86, BUDAPEST VIII, Hungary — Private address: Benz¿r utca 39/a, BUDAPEST VI, Hungary
  a Clinical embryopathology.
  b Intrauterine regenerations of congenital malformations.
  c Biological study of malformations.
  d Ethiology of malformations from clinical viewpoints.

BERNFIELD, M. R. M.D., Prof. — Dept. of Pediat., Stanford Univ., 300 Pasteur Drive, STANFORD, Calif. 94305, U.S.A.
  a Embryonic epithelia: synthesis of macromolecules (collagen, mucopolysaccharide, RNA, enzymes) during inductive interactions in vitro. Mus musculus (Rodentia)
  b Morphogenetic role of extracellular materials (collagen, mucopolysaccharide) during in vitro development of salivary submandibular epithelia. Same species as a
  c Translation level controls (tRNA, ribosomes) during embryonic and hormonal-induced development. Gallus domesticus (Aves)

BERNS, M. W. Ph.D. — Dept. of Zool., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.
  a Intercellular communication in embryonic and adult heart cells in tissue culture: mitochondria are altered by laser microbeam and functional cell responses are studied. Rattus spec. (Rodentia)

BERREUR (BONNNENFANT), Mrs. J. Dr.és Sci. — Lab. de Génét. Evol. et de Biomet., C.N.R.S., 91 GIF-sur-YVETTE, France

BERRILL, N. J. Ph.D. — 410 Swarthmore Ave., SWARTHMORE, Pa. 19081, U.S.A.
  a Regeneration; metamorphosis; asexual reproduction (histogenesis). Campanularia flexuosa, Obelia geniculata (Campanulariidae, Hydrozoa), Branchiomma (= Dasychone) nigromaculata, Sabella melanostigma (Sabellidae, Polychaeta)

BERRY, M. Ph.D. — Dept. of Anat., Med. School, Univ. of Birmingham, Edgbaston, BIRMINGHAM B15 2TJ, England
  a Effects of X-irradiation on central nervous development. Rattus spec. (Rodentia)
  b Development of cerebral and cerebellar cortex. Rattus spec. (Rodentia)

  a Nuclear acid metabolism during differentiation (ultracentrifugation, gradient centrifugation, autoradiography, chromatography). Hyalophora cecropia (Lepidoptera)
  b Endocrine control of differentiation (light and electron microscopy, autoradiography, organ culture). (Saturniidae, Lepidoptera)
  c RNA synthesis during oogenesis (autoradiography, electron microscopy, gradient centrifugation). Various spp. (Lepidoptera)
  d Protein synthesis in specialized organs (autoradiography, electron microscopy, gradient centrifugation). Hyalophora cecropia (Lepidoptera)

BERTALANFFY, F. D. Ph.D., Prof. — Dept. of Anat., Univ. of Manitoba, 750 Bannatyne Ave., WINNIPEG 3, Man., Canada
  a Rates of cell division of neoplastic populations. Rattus rattus, Mus musculus (Rodentia)
  b Mitotic rates of regenerating liver parenchyma. Rattus rattus (Rodentia)
  c Cell renewal and cytodynamics of normal cell populations. Rattus rattus (Rodentia)
  d Effects of cytokine arabinoside on cell development and proliferation. Rattus rattus (Rodentia)

  a Experimental developmental morphology of the olfactory organ. Salmo spec. (Teleostei)
b Developmental morphology of the epiembryonic organs. Coregonus spec. (Coregonidae) Clupea pec. (Clupeidae). Citharinus spec. (Characidae, Teleostei)

BERTOLANI. R. Dr.Biol.Sci. — Ist. di Anat. Comp., Univ. di Modena, Via Berengario 14, 41100 MODENA, Italy
a Sex ratio and karyology in parthenogenetic and amphidonic species. Macrobiotus richtersi, M. hufelandii, M. aureolatus (Tardigrada)

BERTOLINI. B. Dr.Biol.Sci. — Ist. di Anat. Comp. "Battista Grassi", Univ. di Roma, Via A. Borelli 50, 00161 ROMA, Italy
a Fibrous protein-structures in developing nerve fibres. Lampetra pec. (Cyclostomata), Gallus domesticus (Aves)

BERTON (PECHEUX), Mrs. F. Doct. 3ème cycle — Centre de Biol., Fond. Hersent-Luzarche, Univ. de Tours, 36 AZAY-LE-FERRON, France
a Enzymology of fetal kidney after unilateral nephrectomy. Cavia porcellus (Rodentia)
BERTON. J. P. Dr. — Centre de Biol., Fond. Hersent-Luzarche, Univ. de Tours, 36 AZAY-LE-FERRON, France
— Centre de Rech. Vét. et Zootechn., Lab. de Physiol. de la Reprod., (INRA), 37 NOUZILLY, France
a Role of mesonephros and metanephros in composition of amniotic and allantoic fluids (vascular anatomy and intra-uterine surgery). Ovis aries, Sus scrofa (Artiodactyla), Oryctolagus cuniculus (Lagomorpha)
b Chorio-allantoic cell structure. Same species as a
c Hypertrophic compensatory response of fetal kidney to unilateral nephrectomy in vivo. Same species as a
d Development of fetal lung after tracheal ligation or nephrectomy in vivo. Same species as a
e Effects of bilateral nephrectomy (oligohydramnios, survival etc.). Same species as a
f Upper digestive tract as a source of amniotic fluid. Ovis aries (Artiodactyla), Oryctolagus cuniculus (Lagomorpha)
g Hydric metabolism of the fetus and corticosteroid placental transfer. Same species as f
h Déclenchement de la mise bas. Ovis aries, Sus scrofa (Artiodactyla)

a Cellular mechanism of formation of the regeneration blastema (tissue culture, time-lapse cinematography, autoradiography, electron microscopy, cytochemistry). (Planaria, Turbellaria)
b Mechanism of epiboly (ultrastructure, cytochemistry, time-lapse cinematography). Fundulus heteroclitus (Teleostei) (with J. P. TRINKAUS)

BETTANIN (BELGRANO), Mrs. S. Dr.Nat.Sci. — Ist. di Zool., Univ. di Genova, Via Balbi 5, 16126 GENERVA, Italy
a Embryo development of a parthenogenetic marine form. Penilia avirostris (Cladocera, Crustacea) (with N. DELLA CROCE)
b Growth of the embryo. Penilia avirostris (Cladocera, Crustacea) (with N. DELLA CROCE)
c Formation of resting eggs. Penilia avirostris (Cladocera, Crustacea) (with N. DELLA CROCE)

BETZ, T. W. Ph.D., Prof. — Dept. of Biol., Fac. of Sci., Carleton Univ., OTTAWA 1, Ont., Canada
a Hormonal control of the functional differentiation of the duodenum, spleen, and retina in the embryo. Gallus domesticus (Aves)
b Hormonal and dietary control of embryonic growth. Same species as a

BEYNON, A. D. G. B.D.S. — Dept. of Oral Anat., Dental School, Northumberland Rd., NEWCASTLE upon Tyne NE1 8TA, England
a Development of the root and periodontal ligament of the molar teeth. (Rodentia)
b Histochemistry of enamel maturation. (Rodentia)

BEZEM, J. J. Ir. — Zool. Lab., State Univ. of Utrecht, Teelingstr. 2, UTRECHT, Netherlands
a Computer simulation of embryonic development. (with Chr. P. RAVEN)

BHARGAVA, I. D.Sc., Prof. — Dept. of Anat., Jawaharlal Inst. of Postgrad. Med. Educ. & Research, PONDICHERRY-6, India
a Anatomy of fetal blood vessels on the chorial surface of the placenta in abnoramal states of pregnancy. Homo sapiens (Primates)
b Morphometry and stereology of fetal blood vessels of the placenta. Same species as a
c Recessive inheritance of nondisjunction. Same species as a
d Cytogenetic studies in developmental defects. Same species as a

a Influensa dei sali di cobalto sull’eritropoesi. Oryctolagus cuniculus (Lagomorpha)

a Effect of nerve growth factor on early development. *Gallus domesticus* (Aves)

BLACK, R. E. Ph.D., Prof. — Dept. of Biol., Coll. of William and Mary, WILLIAMSBURG, Va. 23185, U.S.A.

a Tracer studies of metabolic pathways in embryos. *Cheyusaora quinquecirrha* (Scyphozoa), *Arbacia punctulata* (Echinoidea)

b Development of enzymes in embryos. Same species as a

BLACKLER, A. W. Ph.D., Prof. — Sect. of Genet., Developm., and Physiol., Div. of Biol. Sci., Emerson Hall, ITHACA, N.Y. 14850, U.S.A.

a Nucleolar repression and gametogenesis in natural and “transmission” (via germ cell grafts) hybrids. *Xenopus mulleri*, *X. laevis* (Anura)

BLAKE, J. A. Ph.D. — Pacific Marine Station, Univ. of the Pacific, DILLON BEACH, Calif. 94929, U.S.A.

b Reproduction and larval development under laboratory conditions from egg through metamorphosis. *Anaitides williamsi*, *Polydora spec. nov.*, *Boccardia colombiana*, *Pseudopolydora kempi*, *P. paucibranchiata* (Polychaeta), *Ceratostoma foliatum* (Prosobranchia), *Callinectes limbaughi*, *Acanthodoris spec.*, *Triophap carteripi*, *Coryphella trilineata* (Opiasthobranchiata, Gastroppoda), *Pagurus setosus* (Decapoda, Crustacea)

BLANCHET, J. P. Dr.Spéc. — Sect. of Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France

a Evolution of the deshydrogénases lactiques au cours de l’érythropoïése embryonnaire. *Gallus domesticus* (Aves)

BLECHSCHMIDT, E. Dr.med., o.ö.Prof. — Anat. Inst. der Univ., Kreuzbergring 36, 34 GÖTTINGEN, W.Germany

a Ultrastruktur von Embryonen. *Homo sapiens* (Primates)

BLOCH, D. P. Ph.D., Prof. — Bot. Dept. and Cell Research Inst., Univ. of Texas, AUSTIN, Tex. 78712, U.S.A.

BLOM, E. Dr.med.vet. — State Vet. Serum Lab., Bülowsvej 27, 1870 COPENHAGEN V, Denmark

a Pathological conditions in the testis, epididymis and accessory sex glands. *Bos taurus* (Artiodactyla)

b The ultrastructure of normal and pathological sperm. *Bos taurus* (Artiodactyla) (with A. BIRCH-ANDERSEN, State Serum Inst.)

BLONDHEIM, Mrs. S. A. M.Sc. — Dept. of Entomol. and Venomous Anim., The Hebrew Univ., JERUSALEM, Israel

a Percentage hatch and viability of hybrid embryos. *Acroytus insurcicx* x A. patrucki, *Dociostaurus geneti* x *D. curvicercus* (Acrididae, Orthoptera)

BLOOM, S. E. Ph.D. — Dept. of Poultry Sci., N.Y.State Coll. of Agric. at Cornell Univ., 210 Rice Hall, ITHACA, N.Y. 14850, U.S.A.

a The morphology, cytology and etiology of haploid, triploid, trisomic, and tetraploid embryos, especially determination if production of chromosomal abnormalities is under genetic control. *Gallus domesticus* (Aves)

b Cytology, development, and reproductive performance of mitotic mutants, especially the effects of age and sex on the development of binucleated erythrocytes. *Meleagris gallopavo* (Aves)

BLOSS (JABLONOWSKI), Mrs. W. Dr.med. — Abt. für Neuroanat., Anat. Inst. der Univ., Martinistr. 52, 2 HAMBURG 20, W.Germany

a The differentiation of cortical layers (autoradiography). (Mammalia)

BLUNT, R. F. Ph.D., Prof. — Dept. of Anat., Med. Branch, Univ. of Texas, GALVESTON, Tex. 77550, U.S.A.

a Morphological changes in kidney during development and changes with age. *Mus musculus* (Rodentia)


a Electron microscopy and electron physiology of the effect of cytochalin B on the mechanism of first cleavage. *Xenopus laevis* (Anura) (with S. W. de LAAT)

b Electron microscopy and experimental study of cell-to-cell junction formation and cell aggregation between median superficial neuroectoderm cells during the closure of the neural tube. *Xenopus laevis*. *Ambystoma mexicanum* (Amphibia)

c Subcellular aspects of functional differentiation in the parotid gland. *Rattus rattus* (Rodentia)

d The origin of the dorso-ventral polarity of the egg (electron microscopy). (Amphibia) (with P. D. NIEUWKOOP)


a Development of haemoglobins in the embryo. (Cephalopoda, Artiodactyla)

BLUNT, M. J. Ph.D., Prof. — Sch. of Anat., Univ. of N.South Wales, P.O.Box 1, KENSINGTON, N.S.W. 2033, Australia

BLUZAT, R. R. Dr.3ème cycle — Lab. de Zool., Centre d’Orsay, Univ. Paris-Sud, 91 ORSAY, France
Structure and ultrastructure of germinal determinant in the egg. \textit{Leptinotarsa decemlineata} (Coleoptera)

Effect of ionizing radiations in early embryogenesis. Same species as a

BOCZKOWSKA, Mrs. J. B.Sc. — Dept. of Histol. and Embryol., Acad. of Med., ul. Narutowicza 60, Łódź, Poland

Histochemistry of distribution and activity of acid phosphatase and beta-glucuronidase in the lung and the liver during embryogenesis. \textit{Xenopus laevis} (Anura), \textit{Rattus norvegicus} (Rodentia)

BODE, H. R. Ph.D. — Dept. of Developm. and Cell Biol., Univ. of California, IRVINE, Calif. 92664, U.S.A.

Regulation of interstitial cell differentiation into the four types of nematocytes. \textit{Hydra} spec. (Hydrozoa)

BODELET, B. — Lab. d’Embryol., Univ. de Nancy I, 31 rue Lionnois, 54 NANCY, France

Morphogenèse pathologique et tératogenèse. \textit{Homo sapiens} (Primates)

Action of certain antimitotiques on les lignées hététopoïétiques embryonnaires. \textit{Gallus gallus} (Aves)


History of embryology, 1600-1900

BODENSTEIN, D. Ph.D., Prof. — Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, Va. 22903, U.S.A.

Intergeneric grafts of organ discs. (Diptera)

The role of the prothoracic gland in postembryonic development. \textit{Periplaneta americana} (Blattariae)

BODMAN, Sister M. C. Ph.D., Prof. — Dept. of Oral Pathol., Loyola Univ., 1757 W. Harrison St., CHICAGO, Ill. 60612, U.S.A.


Changes in enzymatic activity and morphology of embryonic tissues during growth and differentiation. (Amphibia; Aves)

Effects of hormones on enzyme synthesis in specific target tissues of the developing embryo during tissue differentiation and regression. (Amphibia; Aves)

BOHN, H. Dr. rer. nat. — Zool. Inst. der Univ., Luisenstr. 14, 8000 MÜNCHEN 2, W.Germany

Regeneration and transplantation of limbs; polarity and gradient systems. \textit{Leucophaea maderae}. \textit{Gromphadorhina portentosa} (Blattariae)

BOILLY, B. Dr. ès Sci. — Lab. de Biol. Anim., Univ. des Sci. et Techn., B.P. 36, 59-VILLENEUVE D’ASCQ, France

Morphogenesis in regeneration. (Polychaeta)

Origin of regeneration cells. (Polychaeta)

Evolution of regeneration cells, determinism of this evolution. (Annelida)

Factors of regenerative morphogenesis, especially nervous system. (Annelida)

BOLETZKY, S. von Ph.D. — Lab. Arago, 66 BANYULS-sur-MER, France

Embyronic and postembryonic development. \textit{Octopus vulgaris}, \textit{Bledone cirrosa}, \textit{Loligo vulgaris}. \textit{Sepiola spp.}, \textit{Sepieta spp.}, \textit{Rossia macrocorna} (Cephalopoda)

Ultrastructure of the embryonic ciliary apparatus, which is characterized by gradual beat reversal. (Cephalopoda)

BOLLUM, F. J. Dr.-Prof. — Dept. of Biochem., Med. Center, Univ. of Kentucky, LEXINGTON, Ky. 40506, U.S.A.

Analysis of the physico-chemical properties of DNA in differentiating tissues. \textit{Truiturus viridescens} (Urodela), \textit{Gallus domesticus} (Aves), \textit{Mus musculus}, \textit{Rattus rattus} (Rodentia), \textit{Homo sapiens} (Primates) (with S. P. MODAK)

Progressive accumulation of single strand breaks in the nuclear DNA during lens fiber cell differentiation. \textit{Gallus domesticus} (Aves) (with S. P. MODAK)

BOLOGNANI (FANTIN), Mrs. A. M. Prof. — Inst. of Comp. Anat., Univ. of Pavia, Piazza Botta 10, 27100 PAVIA, Italy

The integument of feet and mantle (histochemistry, biochemistry). (Polyplacophora; Scaphopoda; Gastropoda; Lamellibranchia)

The glands associated with the reproductive tract (histochemistry). \textit{Lymnaea stagnalis} (Gastropoda)

The salivary glands. \textit{Lampropeltis zandamrei} (Cyclostomatata)

BOLOGNARI, A. Prof. — Ist. di Zool. e di Anat. Comp., Univ. di Messina, Via dei Verdi 75, 98100 MESSINA, Italy

Nucleolus of the oocyte. (Teleostei)

BOLS, N. C. B.S. — Dept. of Zool., Univ. of British Columbia, VANCOUVIER 8, B.C., Canada

Histone transition in spermiogenesis. \textit{Drosophila melanogaster} (Diptera), \textit{Xenopus laevis} (Anura) (with H. E. KASINSKY)

BONDI, C. Dott. Prof. — Ist. di Anat. Comp., Univ. di Perugia, Via A. Pascoli, 06100 PERUGIA, Italy
The action of magnetic field on nervous system development. *Rana esculenta, Bufo vulgaris* (Anura)

Electron microscopy of vitellogenesis. *Brachiobdella pentodonta* (Oligochaeta)

BONNER, J. T. Ph.D., Prof. — Dept. of Biol., Princeton Univ., PRINCETON, N.J. 08540, U.S.A.

Problems of morphogenetic movements and differentiation. *Acrasiales*

BONNY PILO, Dr. — Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA-2, India

Liver, spleen, and lymph gland regeneration. *Reptilia; Aves*

BONS, J. Dr.ès Sci. — Lab. de Zool. II. (Morphol. et Ecol.), Univ. des Sci. et Techn. du Languedoc, Place Eugène Bataillon, 34 MONTPELLIER, France

Embryonic development. *Agama bifroni* (Lacertilia)

BONTING, S. L. Ph.D., Prof. — Dept. of Biochem., Univ. of Nijmegen, Geert Grote Plein N. 21, Nijmegen, Netherlands

Development of the rhodopsin cycle; rhodopsin, electroretinogram and morphology from birth till maturity. *Canis domesticus* (Carnivora) (with F. J. M. DAEMEN)

BOON (NIERMEYER), Mrs. E. K. M. Sc. — Zool. Lab., State Univ. of Utrecht, Janskerkhof 3, UTRECHT, Netherlands

Influence of puromycin on early cleavage stages; significance for morphogenesis. *Lymnaea stagnalis* (Gastropoda)

Origin of morphogenetic disturbances by heat-shock or lithium treatment at cleavage stages. Same species as a

BOONE, M. A. Ph.D., Prof. — Poultry Sci. Dept., Coll. of Agric., Clemson Univ., CLEMSON, S.C. 29631, U.S.A.

Ultrastructure of spermatozoa. *Gallus domesticus, Meleagris gallopavo* (Aves)

Effect of high ambient temperature on semen and egg production. *Gallus domesticus* (Aves)

development of drug bio-assay system by growing embryos in beakers. *Gallus domesticus* (Aves)

BOPP, M. Dr rer. nat., Prof. — Bot. Inst., Univ. Heidelberg, Hofmeisterweg 4, 69 HEIDELBERG, W. Germany

Crown-gall development and initiation. *Bryophyllum daigremontianum* (Crassulaceae)

Development; morphogenesis of protonema. *Funaria hygrometrica* (Bryophyta)

Shoot growth and DNA synthesis. *Sinapis* spec., *Cucurbita* spec., Beta spec. (Angiospermae)

BORGHESE, E. M.D., Dr.Biol.Sci., Prof. — 1st. di Anat. Umana Norm. II Cattedra, Univ. di Napoli, Via L. Armanni 5, 80138 NAPOLI, Italy


BOSSHARD, N. U. Dipl.Natw. — Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, W. Germany

Influence of chemical stimuli on gene activity. *Galleria mellonella* (Lepidoptera)

BOSSY, J. G. M. M.D., Prof. — Dept. of Anat., Univ. of Montpellier, 2 rue Ecole de Médecine, 34 MONTPELLIER, France

Development of neuroblasts grafted in the adult spinal cord. *Rattus norvegicus* (Rodentia)

Anencephaly and similar defects. *Homo sapiens* (Primates)

BOTERENBROOD, Miss E. C. Ph.D. — Hubrecht Lab. (Intern. Embryol. Inst.), Uppsalalaan 1, Universiteitscentrum "De Uithof", UTRECHT, Netherlands

Pattern formation in the prosencephalic part of the neural plate. *Triturus alpestris* (Urodela)

Analysis of dorso-ventral polarity in mesoderm induction and endoderm differentiation. *Ambystoma mexicanum* (Urodela) (with P. D. NIEUWKOOP)

Cinematography of normal cleavage pattern and gastrulation movement. *Ambystoma mexicanum* (Urodela), *Xenopus laevis* (Anura) (with K. HARA)

BOTH, N. J. de Ph.D. — Dept. of Cell Biol., Med. Fac., ROTTERDAM, Netherlands

Microchemical analysis of differentiation in the intestinal epithelium. *Rattus* spec. (Rodentia)


The relationship between glycolytic enzymes and respiration in early development. *Salmo irideus* (Teleostei)

Qualitative changes in the isoenzymes of L.D.H., aldolase and glucose-6-phosphate dehydrogenase during development. Same species as a

electron microscopy of mitochondria and yolk platelets in early development. Same species as a

effect of D.D.T. and parathion on early development. Same species as a

a Seminal plasma proteins. (Mammalia)


a Experiments on the development of the paired fins. Salmo trutta fario (Teleostei)

BOVBJERG (BLANCHARD), Mrs. A. M. Ph.D. — Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA-City, Iowa 52240, U.S.A.

a Factors affecting skin graft rejection and the nature of the immune reaction. Rana pipiens, R. catesbeiana (Anura)

b Development of skin, in larvae metamorphosing normally and with exogenous thyroid hormone. Rana pipiens (Anura)

BOVING, B. G. M.D. — Dept. of Anat., Wayne State Univ., 540 E. Canfield, DETROIT, Mich. 48201, U.S.A.

a Blastocyst spacing, orientation and implantation mechanisms. Oryctolagus cuniculus (Lagomorpha)

b Relation of trophoblast invasion to blood vessels underlying uterine epithelium, and the anatomical, mechanical, and chemical basis for it. Same species as a

c Identification and function of non-cellular blastocyst coverings. Same species as a

d Structure and function of trophoblast knobs. Same species as a

BOWEN, Mrs. S. T. Ph.D., Prof. — Dept. of Cell and Molec. Biol., School of Nat. Sci., San Francisco State Coll., SAN FRANCISCO, Calif. 94132, U.S.A.

a Changes in hemoglobin composition in development: effect of environment on hemoglobin induction in a clone of genetically identical parthenogenetic females. Artemia salina (Anostraca, Crustacea)


a Effect of a-amanitin, rifampicin and bromodeoxyuridine (BUDR) on development (RNA polymerase, mitochondrial polymerase; morphogenesis). Pleurodeles waltl (Urodele), Xenopus laevis (Anura)

b Origin, nature and role of cytoplasmic DNA. Xenopus laevis (Anura)

c DNA synthesis during maturation. (Echinoidea: Amphibia)

d Effects of cortical lesions on DNA, RNA and protein synthesis. Xenopus laevis, Rana temporaria (Anura)

e Effects of “conditioned medium” from dissociated morulae on development and nucleic acid synthesis. Paracentrotus lividus (Echinoidea)


BRAGNO, S. K. D.Phil., Ph.D. — Dept. of Anat. and Embryol., State Univ. of Utrecht, Janskerkhof 3A, UTRECHT, Netherlands

BRAMBELL, F. W. R. — Ph.D., D.Sc., Prof. — Univ. Coll. of North Wales, BANGOR, Wales, U.K.

BRANDEL, K. A. Dr.reer.nat. — Zool. Inst. der Univ., Siesmayerstr. 70, 6 FRANKFURT/M., W.Germany

a Preparation and rearing of animals with six or more limbs for research on modes of locomotion. Ambystoma spec. (Urodela)

b Preparation and rearing of animals with two heads connected in series (tandem heads) for study of relations between central nervous system and doubled sense organs. Ambystoma mexicanum (Urodela)

c Implantation and rearing of isolated limb regions of embryos under the skin of a host for study of movement coordination of these isolated pairs of limbs. Same species as b

BRANDT, W. H. Ph.D., Prof. — Dept. of Bot. and Plant Pathol., Oregon State Univ., CORVALLIS, Ore. 97331, U.S.A.

a Physiology of development of microsclerotia. Verticillium albo-atrum (Fungi)

BRAUCKMANN, Miss E. S. Biochem. — Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina

a Morphogenesis of neural tube. Bufo arenarum (Anura)

BRAUM, E. Dr. — Inst. für Hydrobiol. und Fisch.wiss., Univ. Hamburg, Olbersweg 24, 2 HAMBURG-Altona 1, W.Germany

a The influence of temperature, oxygen pressure and water flow on eggs and larvae. Esox lucius, Coregonus spp. (Teleostei)

b The relation of external oxygen deficiency and embryogenesis. Clupea harengus (Teleostei)

BRAUN, A. C. Ph.D., Prof. — Lab. of Plant Biol., Rockefeller Univ., 66th St. & York Ave., NEW YORK, N.Y. 10021, U.S.A.

a Systems analysis of colony pattern and computer simulation of colony growth. *Podocoryne carnea* (Hydrozoa)
b Macromolecular control of the initiation of lens morphogenesis and lens protein synthesis in vitro. *Gallus domesticus* (Aves)
c Cell movements and their significance to colony growth and morphogenesis. *Podocoryne carnea* (Hydrozoa)

a Biochemistry of outgrowth processes from sympathetic neurons in tissue culture. *Gallus domesticus* (Aves)

**BREIPOLH, W. Dr.med. — Inst. für Anat. der Ruhr-Univ. Bochum, Postfach 2148, 463 BOCHUM, W. Germany**
a Ontogenesis of neurons in bulbus olfactorius, cerebral cortex, cerebellar cortex, mucosa olfactoria, sense organs, and receptors (electron microscopy, autoradiography, tissue culture, cinematography)

a Developmental genetics of the nervous system. *Caenorhabditis elegans* (Nematoda)

**BREUCKER, Miss H. Dr. — Anat. Inst. der Univ. Hamburg, Martinistr. 52, 2000 HAMBURG-Eppendorf, W.Germany**
a Electron microscopy of spermatozoa and spermatogenesis. *Ornithodoros moubata* (Argasidae, Acrari), *Geophillus linearis* (Chilopoda)

**BREUGEL, F. M. A. van Dr. — Dept. of Genet., Univ. of Leiden. Kaiserrstr. 63, LEIDEN, Netherlands**
a Cytological differentiation and somatic crossing-over in white-mottled mutants. *Drosophila melanogaster. D. hydei* (Diptera)

**b X-Y exchanges in males. *Drosophila hydei* (Diptera)**

**BRICHOVA (MÜLLEROVA), Mrs. H. M. M.D. — Inst. of Embryol., Fac. of Med., Charles Univ., Albertov 4, PRAGUE 2, Czechoslovakia**
a Electron microscopy of microglial cells during postnatal development. *Rattus rattus* (Rodentia)

a Tissue affinities in developing melanophores studied by time-lapse photography. *Ambystoma mexicanum* (Urodela)

**b Genetic control of cell surfaces in the development of pigment pattern. *Ambystoma mexicanum* (Urodela)**

c Analysis of melanophore determination at the molecular level. *Ambystoma mexicanum* (Urodela)

d Development of the eye, optic nerve, and optic tectum in reciprocal transplants of eye rudiments between embryos of varieties with and without eyes. *Astyanax mexicanus* (syn. *Anoptichthyes jordani*) (Teleostei)

e The surface of cells in different presumptive regions during gastrulation (cell electrophaseis). *Rana pipiens* (Anura)

**BRIDE, Miss J. Lic.-ès Sci. — Lab. de Zool., Fac. des Sci., Place Maréchal Leclerc, 25 BESANÇON, France**
a Développement embryonnaire de la glande uryopygienne. (Aves) (avec L. GOMOT)

**BRIDE (VUILLET), Mrs. M. Lic.-ès Sci. — Lab. de Zool., Fac. des Sci., Place Maréchal Leclerc, 25 BESANÇON, France**

**BRIELEGLEB, W. Dr.rer.nat. — Inst. für Flugmedizin der DFVLR, Kölner Str. 70, 532 BAD GODESBERG, W.Germany**
a Einfluss von Licht und hoher Temperatur auf die Ontogenese einer neotenen Art aus einem Höhlenbiotop. *Proteus anguinus* (Urodela)

**b The influence of simulated weightlessness on development. *Tribolium castaneum* (Coleoptera)**

c The influence of simulated weightlessness by rotation on the early development (polarization). *Ascaris* (Nematoda). (Anura) (with G. TEUCHERT)

d The influence of simulated weightlessness (by submersion) on metamorphosis. (Anura) (with G. TEUCHERT)

**BRIEN, P. L. Dr.Sc-Zool., Prof.Hon. — Inst. de Zool. Torley-Rousseau, Univ. Libre de Bruxelles, 50 Av. F. D. Roosevelt, BRUXELLES, Belgium**

**BRIGGS, R. W. Ph.D., Prof. — Dept. of Zool., Indiana Univ., BLOOMINGTON, Ind. 47401, U.S.A.**

a Placental and fetal steroidogenesis. *Dasypus novemcinctus* (Edentata)
b Estrogens in pregnancy. *Felis catus* (Carnivora)
Differentiation in early embryos. Mus musculus and other spp. (Mammalia)

BRODY, S. Ph.D. — Dept. of Biol., Univ. of California, San Diego, P.O. Box 109, LA JOL- LA, Calif. 92037, U.S.A.

Developmental genetics. Neurospora crassa (Ascomycetes)

Biochemical mechanisms in morphogenesis. Neurospora crassa (Ascomycetes)

BRONSTED, H. V. — Dr.Phil., Prof.(Emer.) — Stockholmsgade 23, 2100 COPENHAGEN Ø, Denmark

Physiology and regeneration. (Porifera; Turbellaria)

Embryology.

BROOKBANK, J. W. Ph.D., Prof. — Dept. of Zool., Univ. of Florida, GAINESVILLE, Fla. 32601, U.S.A.

Cytophotometry of DNA and RNA during development of interordinal hybrids. Strongylocentrotus purpuratus, Dendraster excentricus (Echinidea)

Electron microscopy of "ribosomal vesicles" (nuclear) of unfertilized and freshly fertilized eggs. Lytechinus variegatus, Arbacia punctulata (Echinidea)

BROOKS, Miss M. A. Ph.D., Prof. — Dept. of Entomol., Fish. and Wildlife, Univ. of Minnesota, ST. PAUL, Minn. 55101, U.S.A.

Tissue differentiation, studied in cell culture, with respect to developmental potential as correlated with stages in the life cycle. Malacosoma disstria (Lepidoptera)

The effect of intracellular symbiotic microorganisms on vitellogenesis and embryonic development. Blattella germanica, Periplaneta americana (Blattariae)

Growth and differentiation of cells in vitro modified by infection with intracellular microorganisms. Blattella germanica (Blattariae)

BROSEMER, R. W. Ph.D., Prof. — Dept. of Chem., Washington State Univ., PULLMAN, Wash. 99163, U.S.A.

BROWER, L. Ph.D. — Dept. of Biol., Univ. of Calgary, CALGARY 44. Alta., Canada

Biochemistry of melanogenesis. Rana pipiens (Anura)

Developmental genetics of neural crest. Rana pipiens (Anura)


— Dept. of Biol., Johns Hopkins Univ., Charles & 34th Sts., BALTIMORE, Md. 21218, U.S.A.

Biochemistry of early development. Rana pipiens, Xenopus laevis (Anura), Bombyx mori and other spp. (Lepidoptera) (with A. E. CLASON, P. M. LIZARDI, K. SUGIMOTO and Y. SUZUKI)

Silk gland development and differentiation, esp. silk fibroin synthesis, fibroin message synthesis, and isolation of the fibroin gene. Bombyx mori (Lepidoptera) (with Y. SUZUKI and L. P. GAGE)

BROWN, E. H. Ph.D. — Dept. of Zool., Univ. of Illinois, URBANA, Ill. 61801, U.S.A.

Genetic and cytological aspects of oogenesis. Drosophila melanogaster (Diptera)


BRUEL, Mrs. M. Th. Lic.ês Sci. — Lab. de Biol. Anim., Univ. de Clermont, B.P. 45, 63 AUBIERE, France

Action des pesticides sur le développement de l'embryon. (Aves)


Autoradiography of the effect of differentiation on mitotic cycle duration and cell proliferation during embryonic development. Pleurodeles waltli (Urodela)

BRÜMMETT, Miss A. R. Ph.D. — Dept. of Biol., Oberlin Coll., OBERLIN, Ohio 44074, U.S.A.

BRUN, J. L. Dr.ès Sci. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France

Adaptation aux températures élevées. Caenorhabditis elegans (Nematoda)

Genetic determination and development of dwarf mutants. Caenorhabditis elegans (Nematoda)

BRUNA, R. Dr. — Inst. of Biochem., Univ. of Turin. Via Giolitti 34, 10123 TORINO, Italy

BRINST, V. V. Dr.biol.sci. — Roswell Park Mem. Inst., 666 Elm St., BUFFALO, N.Y. 14203, U.S.A.

BRUST, R. A. Ph.D., Prof. — Dept. of Entomol., Fac. of Agric., Univ. of Manitoba, WIN- NIPEG 19, Man., Canada

The influence of thermal stress on development. Aedes spp. (Culicidae, Diptera)

Survey on the occurrence of autogeny in subarctic species (field and laboratory observations). Aedes spp. (Culicidae, Diptera)

Effect of mermithid parasitism on larval development. Aedes spp. (Culicidae, Diptera)

Effect of photoperiod and temperature on the induction and termination of diapause in larvae and embryos. Wyeomyia smithii, Aedes atropalpus (Culicidae, Diptera)
a Etude descriptive et expérimentale de la formation et de la différenciation des somites. Rana dalmatina, Bufo bufo, Discoglossus pictus (Anura)
b Régénération de la queue au cours du développement précoce. Rana dalmatina, Bufo bufo (Anura)

BRYAN, J. H. D. Ph.D., Prof. — Dept. of Zool., Univ. of Georgia, ATHENS, Ga. 30601, U.S.A.
a Cytochemistry of gamete formation. Mus musculus (Rodentia)
b Nucleic acid-protein ratios during growth and differentiation. Same species as a
c Cytochemistry of nuclear proteins in differentiating and adult tissues. Same species as a
d Differentiation of spermatozoa in mutants (light- and electron microscopy). Same species as a

BRYAN, J. K. Ph.D., Prof. — Dept. of Biol., Syracuse Univ., 130 College Place, SYRACUSE, N.Y. 13210, U.S.A.
a The mechanism of action of natural amino acids in the control of growth and development, especially inhibition of growth by lysine and threonine and its prevention by methionine. Marchantia polymorpha (Hepaticae)

BRYANT, P. J. Ph.D. — Developm. Biol. Lab. and Center for Pathobiol., Univ. of California, IRVINE, Calif. 92664, U.S.A.

BULLIERE, M. M. Ph.D., D.V.M. — Dept. of Vet. Anat., Univ. of Sydney, SYDNEY, N.S.W. 2006, Australia
a Prenatal and postnatal development. Mirounga leonina (Pinnipedia)
b General embryoology, Ovis aries (Artiodactyla)
c Embryo removal and replacement. Same species as b
d Experimental teratology. (with H. EVANS, Ithaca, N.Y. and W. BINNS, Logan, Utah)

BUDEGUER de ATENOR, Mrs. M. S. — Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina
a Chemical factors involved in fertilization: oviducal origin of the diffusible factor. Bufo arenarum (Anura)

a Regulation in the development of chimaeras. Mus musculus (Rodentia)
b In vitro culture of embryos. Same species as a

BUGGE, J. M.Sc. — Dept. of Anat., Royal Dent. Coll., Vennelyst Blvd., 8000 ARHUS C, Denmark
a Development of the cerebral periventricular vasculature. Mus musculus (Rodentia)
b Malformations of the vascular system of brain and head. Mus musculus, Rattus norvegicus (Rodentia) (with P. A. KNUDSEN)

a Fine structure and hormonal action of intact and cultured embryonic adrenal cells of different species

BULLIÈRE, D. Dr.ès Sci. — Lab. de Zool., Inst. de Rech. Biol., Univ. Scient. et Méd. de Grenoble, Cedex 53, 38 GRENOBLE, France
a Cellular determination in regenerating appendages; relations between regeneration and hormones. Blabera cranifer (Blattariae)
b Myogenesis and myofibrillogenesis during regeneration of appendages. Same species as a

BULLIÈRE (CHALLANDE), Mrs. F. Dr.spéc. — Lab. de Zool., Inst. de Rech. Biol., Univ. Scient. et Méd. de Grenoble, Cedex 53, 38 GRENOBLE, France
a Morphology and ultrastructure of organogenesis (in vitro culture, autoradiography). Blabera cranifer (Blattariae)
b Relations between differentiation and hormones in embryos. Same species as a
BULMER, D. M.D., D.Sc., Prof. — Chair of Human Morphol., Univ. of Southampton Med. School, Highfield, SOUTHAMPTON S09 5NH, England

a Cytochemistry of developing female genital tract. Various spp. (Mammalia)
b Cytochemistry of placenta. (Rodentia)


a Molecular control mechanisms of oral differentiation: possible involvement of information from the mitochondrial genome, effects of ultraviolet light on this involvement, and the functions of microtubules in differentiation (enzyme labeled antibody cytochemistry, electron microscopy). Stentor coeruleus (Ciliata)
b Sexual reproduction: mating types and the environmental conditions requisite for conjugation. Stentor coeruleus (Ciliata)

BURDA (WILSON), Mrs. D. J. Ph.D. — Biol. Dept., Univ. of California, San Diego, P.O. Box 109, LA JOLLA, Calif. 92037, U.S.A.
a Development and experimental modification of cerebrovascular system. Gallus domesticus (Aves)
b Early growth and differentiation of brain. Same species as a

a Variabilities and polymorphisms in prenatal dental development. Homo sapiens (Primates)
b Sexual dimorphisms in facial embryogenesis. Homo sapiens (Primates)
c Prenatal growth patterns of head and face. Homo sapiens (Primates)
d Effects of hypoxia on facial development. (Mammalia)
e Tissue interactions during early development of the skull. Gallus domesticus (Aves)

a Study of the cellular specificities responsible for controlling morphogenetic movements, using reaggregation of dissociated cells as a test system. Gallus domesticus (Aves). Mus musculus (Rodentia)

BURDON-JONES, C. Ph.D., Prof. — Depts. of Marine Sci., Botany and Zool., James Cook Univ. of North Queensland, P.O.Box 999, TOWNSVILLE, Qld. 4810, Australia
a Development and regeneration. Rhadopleura normani, Cephalodiscus spec. and other spp. (Pterobranchiata, Hemichordata)

BURGER, Mrs. E. H. Drs. — Lab. for Cell Biol. and Histol., State Univ., Rijnsburgerweg 10, LEIDEN, Netherlands
a The morphological and histochemical effect of parathyroid extract on the development of joints in embryonic toes in tissue culture. Mus musculus (Rodentia)

a RNA synthesis in dedifferentiating and redifferentiating regenerating tissues. Xenopus laevis, Ambystoma spec. (Amphibia)
b Somite morphogenesis. Xenopus laevis (Anura)
c Myogenesis. Xenopus laevis (Anura)

BURGHIEL, P. Dr.biolog.- — Ist. di Biol. Anim., Univ. di Padova, Via Loredan 10, 35100 PADOVA, Italy
a Differentiation of digestive tract. Botryllus schlosseri, Botrylloides leachi (Asciidae)
b Stages of the metamorphosis. Botryllus schlosseri (Asciidae)

BURKART, T. Dipl.Natw. — Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, W.Germany
a Role of electrolytes in limb regeneration and metamorphosis. Triturus cristatus (Urodela), Xenopus laevis (Anura)


a Investigation of the role of microtubules in the maintenance and production of cell shape in embryonic columnar epithelia. Taricha torosa (Urodela), Gallus domesticus (Aves)

BURTON, A. L. M.D., Prof. — Dept. of Anat., Univ. of Texas Med. School at San Antonio, 7703 Floyd Curl Drive, SAN ANTONIO, Tex. 78229, U.S.A.
a Development of mast cells in embryonic skin. Rattus norvegicus (Rodentia)

a Characteristics of parthenogenetic development. Meleagris gallopavo (Aves)
b Aneuploidy and polyploidy in embryonic development. Gallus domesticus (Aves)
c Hormonal influence on development of binucleated red blood cells. Same species as a

d Role of the posterior pituitary in development of diabetes insipidus. Same species as b
a The mechanics of the formation of the regeneration blastema; the influence of nerves on blastema formation; regression in nerveless non-regenerating limbs. Ambystoma punctatum, A. opacum (Urodela)
b Effects of ultraviolet radiation on limb development and supernumerary limb regeneration. (Urodela)
c Problems of polarity in the limb; regeneration after reversal of the proximo-distal axis. (Urodela)
d Epidermal hyperplasia. (Urodela; Mammalia)
e Spinal cord reconstitution after ablation. (Urodela)

BUTLER, H. M.D., B.Chir. — Dept. of Anat., Univ. of Saskatchewan, SASKATOON, Sask., Canada
a Reproductive cycle, implantation, placentation and early embryology. Galago senegalensis senegalensis (Lemuroida, Primates)

BUTLER, W. L. Ph.D., Prof. — Dept. of Biol., Univ. of California, San Diego, P.O. Box 109, LA JOLLA, Calif. 92037, U.S.A.
a Mechanism of phytochrome action in development. (Spermatophyta)
b Photosynthesis and the development of the photosynthetic apparatus. (Spermatophyta)
c Photocycle mechanisms of cellular metabolism and development. (Bacteria; Plantae; Animalia)

BUTTROS, J. M. Ph.D., Prof. — Biol. Dept., American Univ. of Beirut, BEIRUT, Lebanon
a Action of stimulants and depressants on development of the heart primordium in vivo. Gallus domesticus (Aves)
b Action of spermine on early differentiation and morphogenesis, in vitro and in vivo. Gallus domesticus (Aves)

BUTTERWORTH, F. M. Ph.D., Prof. — Dept. of Biol. Sci., Oakland Univ., ROCHESTER, Mich. 48063, U.S.A.
a The hormonal and genetic control of development and reproduction of the adipose tissue on the cellular and biochemical level (microsurgery, transplantation, cytology, biochemistry). Drosophila melanogaster (Diptera)
b The role of the internal environment and of development of lysosomes on cell death of the larval fat body. Drosophila spec. (Diptera)

a Developmental genetics of mating type. Paramaecium aurelia (Ciliata)
b Organelle development: study of the role of organelles in teratogenesis of single and double cells. Paramaecium aurelia (Ciliata)

a The role of neurotransmitters (acetylcholine, serotonin, catecholamines) in early embryogenesis. Strongylocentrotus droebachiensis, S. nudus, S. intermedius, Paracentrotus lividus, Arbacia lixula, Sphaerechinus granularis (Echinoidae), Rana temporaria, Bufo bufo (Anura) (with L. N. MARKOVA)

BYCZKOWSKA (SMYK), Mrs. W. Dr. — Dept. of Comp. Anat., Jagellonian Univ., ul.Krumpicza 50, KRAKOW, Poland

BYLINA (KUSSKA), Mrs. A. mgr. Sci. — Dept. of Histol. and Embryol., Warsaw Agric. Univ., ul.Grochowska 272, WARSAWA, Poland
a Histocytochemistry of metanephros differentiation. Sus domesticus (Artiodactyla)

BYRD, E. W., Jr. M.A. — Dept. of Zool., Univ. of British Columbia, VANCOUVER 8, B.C., Canada
a Histone synthesis during cleavage. Xenopus laevis (Anura) (with H. E. KASINSKY)
b Patterns of basic ribosomal protein and histone synthesis during development. Drosophila melanogaster (Diptera) (with H. E. KASINSKY)

BYSKOV (SJOLTE), Mrs. A. G. — Finsen Lab., Finsen Inst., 49 Strandboulevarden, 2100 COPENHAGEN, Denmark
a Development of ovaries (electron microscopy, autoradiography, cell dynamics of atresia). (Rotendita)

BYTINSKY-SALZ, H. Ph.D., Prof. — Dept. of Zool., Tel-Aviv Univ., 155 Herzl St., TEL-AVIV, Israel
a Hormonal influences on melanophore behavior in tadpoles. Rana spec., Pelobates spec. (Anura)
b Species specificity of different larvae tested by xenoplastic transplantation of hypophysis. Pelobates spec., Xenopus spec., Bufo spec., Rana spec., Bombina spec., Hyla spec. (Anura), Pleurodeles spec., Triton spec., Ambystoma spec. (Urodela)
c Cytology of the larval skin. (Amphibia)

CABADA, M. O. Biochem. — Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMAN, Argentina
a Chemical factors involved in fertilization: testicular factors, jelly coats. Bufo arenarum (Anura)
Mechanisms

Metabolism

Changes

Cell

Rapports

Regulatory

Involution

Ultrastructure

Mutants

Blastocoel

Dr.,

Morphology,

Time-lapse

Cell

Etude

Antigenic

Morphogenesis:

CAMENZIND,

f

CAMPTANO,

a

CAMBAR,

C.

TORINO,

Antonio,

Alytes

TALENCE,

Anticipating

with

animal

homing.

cycle

mechanisms

and

relating

Aves)

meiotic

and

meiotic

cycles,

meiotic

mechanics

cytology and electron microscopy.

Mus
crupus

(Rodentia),

Homo

sapiens

(Primates)

b

Blastocoeil

formation.

Mus
crupus

(Rodentia)

CALLEBAUT, M. E. M.D. — Lab. of Anat. and Embryol., State Univ. Center, Groenroos-

bergerlaan 171, 2000 ANTWERPEN, Belgium

a

Eearly

development.

Mus
crupus

 domesticus, Coturnix coturnix (Aves)

b

8H-uridine

and

8H-thymidine

incorporation in germ cells. Coturnix coturnix (Aves)

CABBAR, R. Dr. — Lab. de Biol. Anim. A, Univ. Bordeaux I, Av. des Facultés, 33

TALENCE, France

a

Etude descriptive et expérimentale de la morphogenése du mésonéphros. Rana
crump, Alytes

crump, Discoglossus

crump spec., Xenopus

spec. (Anura)

b

Etude expérimentale de la morphogenése du tube digestif et des glandes annexes. (Anura)

c

Involution ou transformation de l'appareil excréteur pendant la métamorphose. (Anura)

d

Rapports entre l'appareil génital et l'appareil excréteur. (Anura)

e

Ultrastructure du pronéphros et du mésonéphros. (Anura)

f

Différenciation sexuelle (Anura)

g

Infrastructures des cellules germinales. (Anura)


2, 8006 ZÜRICH, Switzerland

a

Morphology, physiology, and cytology of paedogenetic-bisexual reproduction cycle.

Heteropeza

pygmaea (= Oligarcos paradoxus), Tekomyia

populi, Mycophila

specyeri,

Miastor castaneae (Cecidomyiidae, Diptera)

b

Time-lapse cinematography of embryonic development in vitro and chromosome

elimination in early cleavage. Heteropeza

pygmaea (Cecidomyiidae, Diptera)

CAMERON, I. L. Ph.D. Prof. — Dept. of Anat., Univ. of Texas Med. School at San

Antonio, 7703 Floyd Curl Drive, SAN ANTONIO, Tex. 78229, U.S.A.

a

Synchronous cell differentiation. Tetrahymena

vora (Ciliata)

b

Cell proliferation and differentiation. Gallus gallus (Aves)

c

Cell homing. Gallus gallus (Aves)

d

Patterns in development. Gallus gallus (Aves)

CAMOSO, Miss M. E. Sc.D. — Inst. of Human Anat., Fac. of Med., Univ. of Bari,

Policlinico, 70124 BARI, Italy

a

Analysis of the morphogenesis of the wing. Gallus domesticus (Aves)

b

Nerve patterns in experimentally duplicated limbs. Gallus domesticus (Aves)

CAMPAINTO, E. Dr. — Inst. of Exper. Embryol., Univ. of Turin, Via Giolitti 34, 10123

TURINO, Italy

CAMPBELL (GIBSON), Mrs. J. A. B.Sc.(Hons.) — Dept. of Cell Biol., Univ. of Glasgow,

GLASGOW W.2, Scotland, U.K.


of Edinburgh, West Mains Rd., EDINBURGH EH9 3JN, Scotland, U.K.

a

Antigenic studies of lens regeneration. Xenopus

laevis, Triturus

alpestris (Amphibia)

(b) with D. E. S. TRUMAN

b

Regulatory mechanisms in lens regeneration. Xenopus

laevis (Anura)

c

Metabolism (immunochemistry) and regulatory mechanisms in lens development. Xenopus

laevis (Anura), Gallus domesticus (Aves) (with R. M. CLAYTON and D. E. S. TRU-

MAN)

d

Mutants affecting the eye and lens. Mus

musculus (Rodentia) (with R. M. CLAYTON)

e

Immunochemistry of retina and eye-cup. (Amphibia) (with R. M. CLAYTON)

CAMPBELL, R. D. Ph.D., Prof. — Dept. of Developm. and Cell Biol., Univ. of Calif.,

IRVINE, Calif. 92664, U.S.A.

a

Morphogenesis: relations between movements, adhesions, and shapes of epithelial cells, and

the animal shapes they produce. Hydra

litoralis (Hydrozoa)

b

Cell cycle kinetics: determination of the durations of cell cycles, DNA synthesis, G1 and

g2-phases, and relating these to cell turnover rates during normal growth. Hydra

 attenuata (Hydrozoa)

CAMPEHNOUT, E. van †. Dr., Prof. — Univ. de Louvain, LOUVAIN, Belgium

CANNATA, F. — Catt. di Istit. ed Embriol., Univ. di Messina, Via dei Verdi 75, 98100

MESSINA, Italy
CANNON, M. S. Ph.D. — Dept. of Anat., Ohio State Univ., 333 W. 10th Ave., COLUMBUS, Ohio 43210, U.S.A.

a Morphology and histology of the male and female adrenal gland from implantation to sexual maturity; histochemistry and electron microscopy of the cortical transient zone. _Meriones unguiculatus_ (Rodentia)

CANTELL, C.-E. Fil.líc. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden

a Larval development. (Heteronemertini, Nemertea)

CANTINO, D. M.D. — Dept. of Anat., Univ. of Turin, Corso M. d’Azeglio 52, 10126 TORINO, Italy


a Relation between biochemical and morphological differentiation. _Blastocladia emersonii_, _B. britannica_ (Fungi)
b Relation between changes in fine structure and germination in motile cells and associated biochemical differentiation. Same species as a

CAPANNA, a
CARELL, a
CARINCI, a
CASSAGNE-MEJEAN, Mrs. F. Dr.ès Sci. — Lab. de Zool. II, (Morphol. et Ecol.), Univ. des Sci. et Techn. du Languedoc, Place Eugène Batallion, 34 MONTPELLIER, France

a Embryonic and post-embryonic development and metamorphosis. _Arrenurus_ spec. (Hydrachnellae, Acanra, Arachnida)

CAPESIUS, Miss I. Dr. — Bot. Inst., Univ. Heidelberg, Hofmeisterweg 4, 69 HEIDELBERG, W.Germany

a Synthesis of DNA and RNA in developing organs and tissues of seedlings and in callus cultures. _Sinapis alba_ (Cruciferae), _Petroselinum_ (Umbelliferae)

CAPURION, A. P. Dr.ès Sci., Prof. — Lab. d’Embryol., Univ. des Sci. et Techn. de Lille, B.P. 36, 59 VILLENEUVE D’ASCQ, France

a Origine, migration et différenciation des cellules germinales primordiales (cultures embryonnaires). _Pleuronectes wallii_ (Urodela)
b Induction et organogénèse de la bouche et des dents _in vivo et in vitro_. Same species as a

CARELL, E. F. Ph.D. — Dept. of Biol., Univ. of Pittsburgh, PITTSBURGH, Pa. 15213, U.S.A.

a Effect of light and chemicals on chloroplast development. _Euglena gracilis_ (Eulencophyceae)

CARINCI, P. M.D. — Inst. of Histol. and Gen. Embryol., Univ. of Perugia, Via del Gochetto, 06100 PERUGIA, Italy

a Biochemical and histochemical analysis of embryonic fluids (albumen, yolk, and serum). _Gallus domesticus_ (Aves)
b Epithelio-mesenchymal interactions during lung and skin morphogenesis _in vitro_. Same species as a


a Supernumerary limb formation. _Triturus viridescens_ (Urodela)
b Microen mass muscle regeneration. _Ambystoma mexicanum_ (Urodela), _Rana_ spec. (Anura), _Rattus norvegicus_ (Rodentia)
c Muscle and limb morphogenesis in regenerates. _Ambystoma mexicanum_, _Triturus viridescens_ (Urodela)
d Inhibition of limb regeneration. _Triturus viridescens_ (Urodela)

car MONA de UZCATEGUI, Mrs. M. L. Dr. Bio. — Cat. de Embriol., Fac. of Med., Univ de Los Andes, MÉRIDA, Venezuela

a Development of the vascular system especially of the skin and its orifices (injection-preparations). _Sus domesticus_ (Artiodactyla), _Canis familiaris_ (Carnivora), _Homo sapiens_ (Primates)
b Developmental pathology of the skeletal system. _Homo sapiens_ (Primates)


a Early histogenesis of placental ultrastructure. _Mesocricetus auratus_ (Rodentia)
b Teratogenic effects of heavy metals and viruses, electron microscopy. _Mesocricetus auratus_ (Rodentia)

CARR, D. H. Ph.D., Prof. — Dept. of Anat., Fac. of Med., McMaster Univ., HAMILTON, Ont., Canada

a Chromosome abnormalities and development. _Homo sapiens_ (Primates)

CASPARI, E. W. Ph.D., Prof. — Dept. of Biol., Coll. of Arts and Sci., Univ. of Rochester, ROCHESTER, N.Y. 14627, U.S.A.

a Variegation in _x_-autosome translocations. _Mus musculus_ (Rodentia)
b Development of proteins. _Anagersta (= Ephestia) kühniella_ (Lepidoptera)

CASSAGNE-MEJEAN, Mrs. F. Dr.ès Sci. — Lab. de Zool. II, (Morphol. et Ecol.), Univ. des Sci. et Techn. du Languedoc, Place Eugène Batallion, 34 MONTPELLIER, France

a Embryonic and post-embryonic development and metamorphosis. _Arrenurus_ spec. (Hydrachnellae, Acanra, Arachnida)
a The effect of various intra-uterine devices (I.U.D.'s) upon embryonic survival and decidua formation. Rattus norvegicus, Mesocricetus auratus (Rodentia).

CHAMBERLAIN, J. G. Ph.D. — Dept. of Anat., Sch. of Med., Univ. of California, SAN FRANCISCO, Calif. 94122, U.S.A.

a Pathogenesis of experimentally induced congenital hydrocephalus: 6-aminonicotinamide injected during pregnancy. Rattus rattus (Rodentia)
b Intraamniotic injections of metabolites and antimetabolites as replacement therapy during teratogenesis. Same species as a
c Effects of hormones and hormone antibodies on fetal development and postnatal growth. Same species as a
d Transfer of blastocysts to drug treated and non-treated recipients. Same species as a

CHAMBOLLE, P. Dr.es Sci. — Lab. de Biol. Anim. A, Univ. Bordeaux I, Av. des Facultés, 33 TALENCE, France

a Expériments sur la gestation. Gambusia spec. (Teleostei), Salamandra spec. (Urodela)
b Développement in vitro. Gambusia spec. (Teleostei)
c L'ultrastructure des œufs. Same species as b

CHANCONIE (CHAMBERLAIN), b CHANG, Miss R. Dr.es Cycle — Lab. d'Anat. Comp., Univ. Paris VII, 2 Place Jussieu, 75 PARIS Ve, France

a Respiration during early stages of egg development, especially relation with oxidative phosphorylations as shown by the action of 2,4-dinitrophenol and some inhibitors of respiration. Salmo irideus, S. fario (Teleostei) (with Ch. DEVILLERS)
b Descriptive study of the developing nuclei in the prosencephalon. Salmo irideus (Teleostei)
c Teratogenesis in the prosencephalon after treatment of the blastula with 2,4-dinitrophenol. Same species as b (with P. CLAIRAMBAULT)

CHANDEBOIS, Miss R. Dr., Prof. — Lab. de Morphogénèt. Anim., Centre Saint-Charles, Univ. de Provence, Place Victor Hugo, 13 MARSEILLE 3e, France

a Activity of the undifferentiated material in normal and regenerating animals (electron microscopy, tissue culture, irradiation). Dugesia subtentaculata, D. yonocophala (Turbellaria)
b Equilibria between the two cell types of the undifferentiated tissue and equilibria between this undifferentiated tissue and the differentiated cells. Same species as a


a Reactivity of embryonic intestine to antigens. Gallus domesticus (Aves)

CHARNIAUX (COTTON), Mrs. H. Dr.es Sci., Prof. — Lab. d'Evol., Fac. des Sci. de Paris, 105 Bd. Raspail, 75 PARIS Vle, France

a — Lab. de Génét. Evol. et de Biométrie, C.N.R.S., 91 GIF-sur-YVETTE, France


a Developmental genetics of hair growth phases, using mutants hairless (hr), Rex (Re), and satin (sa). Mus musculus (Rodentia)
b Hereditary anophthalmia as influenced by teratogens. Mus musculus (Rodentia)
c Development and regeneration of wool follicles. Ovis aries (Artiodactyla)

CHAYTOR, D. H. S. D.phil., Prof. — Dept. of Zool., Univ. of Gorakhpur,GORAKHPUR, (U.P.), India

CHAYTOR, D. E. B. Ph.D., Prof. — Dept. of Zool., Njala Univ. Coll., Private Mail Bag, FREETOWN, Sierra Leone, W.Africa

CHEN, P. S. Dr.phil., Prof. — Zool.-Vergl. Anat. Inst., Univ. Zürich, Künstlergasse 16, 8006 ZURICH, Switzerland

CHENEY, R. H. Sc.D., Prof.(Emer.) — Brooklyn Botanic Garden, 1000 Washington Ave., NEW YORK, Brooklyn, N.Y. 11225, U.S.A.

a Retardation effect of dimethylated xanthines on development. Arbacia punctulata (Echioidea)
b Theophylline, theobromine, and caffeine effects on fecundity and development. Rattus norvegicus (Rodentia)
c Effect of di- and trimethylated xanthines on root tip growth. Allium spec. (Liliaceae)
d Effect of methylated xanthines on the oxygen consumption of the fertilized egg and early embryology. Arbacia punctulata (Echioidea)
effect of x-ray and ultra-violet irradiation on development of methylated xanthine-treated eggs. Arbacia punctulata (Echioidea)
f Effect of caffeine on development. Rana pipiens (Anura)
g Developmental effects of chemical inhibitors of protein synthesis. Arbacia punctulata (Echioidea)

CHENG, Th. C. Ph.D., Prof. — Dept. of Biol., Lehigh Univ., BETHLEHEM, Pa. 18015, U.S.A.

a Embryology and differentiation. Fasciola hepatica, Schistosoma mansoni, S. haematobium (Trematoda), Hymenolepis diminuta, H. nana (Cestoda)
b Developmental pathology: genetic basis of abnormal growth, cellular differentiation and
reaction to foreign bodies. _Crassostrea virginica_ (Lamellibranchia), _Helisoma trivolvis, H. duroy normale, Biomphalaria glabrata, Bulinus spp._ (Gastropoda)

c Transplantation biology, Same species as b


d The early differentiation of the suprarenal gland in chorioallantoic grafts. *Same species as a*

CHEVREAU, J. P. Dr.en Méd., Prof. — Dépt. d’Histol.-Embryol., Fac. de Méd., 6 rue du Général Sarrail, 94 CRÉTEIL, France

a Myelization of brain. _Oryctolagus cuniculus_ (Lagomorpha)

b Histogenesis and differentiation of the central nervous system. *Rattus* spec. (Rodentia)

CHIARODO, A. J. Ph.D., Prof. — Dept. of Biol., Georgetown Univ., 37th & O. St. N.W., WASHINGTON, D.C. 20007, U.S.A.

a Neuroembryology (experimental morphology). _Sarcophaga bullata_ (Diptera)

CHIBON, P. Dr.ès Sci. — Lab. de Zool., Inst. de Rech. Biol., Univ. Scient. et Méd. de Grenoble, Cedex 53, 38 GRENOBLE, France

a Nuclear labelling of embryonic cells (autoradiography). _Pleurodeles waltlii, Triturus alpestris_ (Urodela)

b Morphogenetic abilities and differentiation of neural crest cells. *Same species as a*

c Origin and differentiation of teeth. (Amphibia)

d Genetic and effects of high nuclear labelling. (Amphibia)

e Cellular proliferation in the embryo: kinetics and differentiation. (Amphibia)

CHIEFFI, G. M.D., Prof. — Lab. di Anat. Comp., Ist. di Istol. ed Embriol., Univ. di Napoli, Via Mezzocannone 8, 80134 NAPOLI, Italy

CHITNIS, P. S. Ph.D. — Cell Research Lab., Dept. of Zool., Nowrosjee Wadia Coll., POONA-1, India

CHOROSZEWSKA-LELIŚKI, Mrs. A. Dr.biol. — Lab. of Embryol., Dept. of Obstet. and Gynecol. II, Med. School, ul.Karowa 2, WARSZAWA 40, Poland

a Nutrition mechanisms of preimplantation stages: the concentration of free amino acids in uterine secretion, blastocyst fluid, and blood serum; effect of steroid hormones on differentiation of uterine secretion. *Rattus* spec. (Rodentia), _Oryctolagus cuniculus_ (Lagomorpha)

CHOUARD, C. H. — Lab. d’Anat., Univ. Paris V - René Descartes, 45 rue des Saints Pères, 75 PARIS VIle, France

a Brain stem and acoustic tracts

CHRISPEELS, M. J. Ph.D. — Dept. of Biol., Univ. of California, San Diego, P.O. Box 109, LA JOLLA, Calif. 92037, U.S.A.

a Biochemical processes in development: mechanism of protein secretion and cell wall formation in phloem explants and cell culture. _Nicotiana tabacum_ (Solanaceae), _Daucus carota_ (Umbelliferae)

CHRIST, B. Dr.med. — Inst. für Anat. der Ruhr-Univ. Bochum, Postfach 2148, 463 BOCHUM, W.Germany

a Development of vertebral column. *Gallus domesticus* (Aves)

b Differentiation of somites. *Gallus domesticus* (Aves)

CHUANG HSIAO HUI Dr. rer.nat.habil. — Lab. of Developm. Physiol., Inst. for Exper. Biol., Acad. Sinica, 320 Yo Yang Rd., SHANGHAI, People’s Republ. of China

CHURCH, N. S. Ph.D. — Research Station, Res. Branch, Canada Agric. Univ. Campus, SASKATOON, Sask., Canada

CHURCH, R. B. Ph.D., Prof. — Div. of Med. Biochem., Fac. of Med., Univ. of Calgary, CALGARY 44, Alta., Canada

a Study of messenger RNA synthesis by RNA/DNA molecular hybridization in developing neural tissue. *Mus musculus* (Rodentia)

b Analysis of RNA transcription by repetitive and non-repetitive DNA in developing neural tissue. *Mus musculus* (Rodentia). _Oryctolagus cuniculus_ (Lagomorpha)

ČIHÁK, R. MUDr. — Dept. of Anat., Charles Univ., U nemocnice 3, PRAHA 2, Czechoslovakia

a Prenatal development of muscles. *Homo sapiens* (Primates)

CLAIRAMBault, P. Dr.ès Sci. — Lab. d’Anat. Comp., Univ. Paris VII, 2 Place Jussieu, 75 PARIS Ve, France

a Morphological and experimental studies of brain development. _Discoglossus pictus, Rana pipiens, Bufo regularis, Rana pipiens spec., Nectophrynoides occidentalis* (Anura), _Pleurodeles waltlii_ (Urodela)

b Teratogenesis in the prosencephalon after treatment of the blastula with 2,4-dinitrophenol. _Salmo irideus_ (Teleostei) (with M. CHANCONIE)

CLARK (LATTO), Mrs. J. C. B.Sc. — Dept. of Zool., The Univ., GLASGOW W.2, Scotland, U.K.

a Biochemistry of early development. Rana pipiens, Xenopus laevis (Anura), Bombus mori and other spp. (Lepidoptera) (with D. D. BROWN, P. M. LIZARDI, K. SUGIMOTO and Y. SUZUKI)

CLAUVERT, J. M. J. Dr.es Sci., Prof. — Inst. d’Embryol., Fac. de Méd., 11 rue Humann, 67 STRASBOURG, France

a Le déterminisme de la symétrie bilatérale. (Pisces; Reptilia; Aves)

b Chimiotératogenèse (cortisone, antimitotiques). (Aves; Mammalia)


a Metabolism and immunochemistry of regulation and structure of lens proteins and lens development. Xenopus laevis (Anura), Gallus domesticus (Aves) (with J. C. CAMPBELL and D. E. S. TRUMAN)

b Immunochemistry of retina and eye cup. Xenopus laevis (Anura) (with J. C. CAMPBELL)

c Mutants affecting the eye and lens. Mus musculus (Rodentia) (with J. C. CAMPBELL)

CLAXTON, J. H. Ph.D. — Dept. of Agric. Biol., Univ. of New England, ARMIDALE, N.S.W. 2351, Australia

CLEFTMANN, G. Dr., Prof. — II. Zool. Inst. der Univ., Wartweg 95, 63 GIESSEN, W.Germany

a Synthesis of macromolecules in relation to the cell cycle. Tetrahymena pyriformis (Ciliata)

CLEG, E. J. M.D., Ph.D. — Dept. of Human Biol. and Anat., Univ. of Sheffield, Western Bank, SHEFFIELD 10, England (no embryological work in progress)

CLEGG, J. S. Ph.D., Prof. — Dept. of Biol., Univ. of Miami, CORAL GABLES, Fla. 33124, U.S.A.

a Biochemistry and physiology of cryptobiosis in the embryo (major emphasis on metabolism of trehalose, glycerol, and other carbohydrates). Artemia salina (Anostraca, Crustacea)

b Protein and nucleic acid metabolism during embryonic development (major emphasis on in vitro protein synthesizing system, analysis of polysome formation and breakdown, and synthesis of various RNA species). Same species as a

CLEMENT, A. C. Ph.D., Prof. — Dept. of Biol., Emory Univ., ATLANTA, Ga. 30322, U.S.A.

a Experimental analysis of early embryonic determination. Ilyanassa obsoleta (Gastropoda)

b Cytochemistry and physiology of early development. Same species as a

CLERMONT, Y. Ph.D., Prof. — Dept. of Anat., Med. School, McGill Univ., MONTREAL 2, Que., Canada

a Growth and renewal of the spermatogonial population in prepuberal animals. Rattus norvegicus (Rodentia)

CLEVER, U. Dr. — Dept. of Biol., Purdue Univ., LAFAYETTE, Ind. 47907, U.S.A.


a Physiology of gamete and zygote transport in the female. Oryctolagus cuniculus (Lagomorpha), (Primates)

CLUTTER (SUSSEX), Mrs. M. E. Ph.D. — Dept. of Biol., Yale Univ., NEW HAVEN, Conn. 06520, U.S.A.

a Experimental embryogenesis including fine structural changes of cell surfaces, structural and functional aspects of polytene chromosomes. Phascolus coccineus (Papilionaceae)

COALSON, R. E. Ph.D., Prof. — Dept. of Anat. Sci., Univ. of Oklahoma Med. Center, 801 NE 13th St., OKLAHOMA-City, Okla. 73104, U.S.A.

a Studies on insulin in the developing pancreas. Gallus domesticus, Columba livia (Aves), Rattus norvegicus, Cavia porcellus (Rodentia)

COCK, A. G. Ph.D. — Dept. of Zool., Univ. of Southampton, SOUTHAMPTON SO9 5NH, England

a Developmental genetics of body shape and size. Artemia salina (Anostraca, Crustacea), Gallus gallus (Aves)

COGNETTI, G. — Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

a Histones and other nuclear proteins in oocytes and during embryology. Paracentrotus lividus (Echinodidea)

b Biosynthesis of ribosomal proteins during oogenesis. Paracentrotus lividus (Echinodidea)


COHEN, M. H. Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, CHICAGO, Ill. 60637, U.S.A.

a Biochemical aspects of differentiation in liver during metamorphosis (enzyme changes and induction; RNA, DNA and histone changes; biochemical mechanism of thyroxine action as an inducer). Rana catesbeiana (Anura)
COHEN, S. Ph.D., Prof. — Dept. of Biochem., Sch. of Med., Vanderbilt Univ., NASHVILLE, Tenn. 37203, U.S.A.

COHN, S. A. Ph.D., Prof. — Dept. of Anat., Med. Units, Univ. of Tennessee, 800 Madison Ave., MEMPHIS, Tenn. 38103, U.S.A.

a Histology of the developing periodontium. (Primates)


a Oogenesis, especially nucleocytoplasmic interactions in primary oocytes (cytochemistry, electron microscopy, autoradiography). Rana pipiens (Anura)

b The effects of electromagnetic radiation on mitosis of neuroblasts. (organ culture, autoradiography, metabolic inhibitors). Chortophaga viridifasciata (Orthoptera)

COLE, R. J. Ph.D. — Sch. of Biol. Sci., Univ. of Sussex, Falmer, BRIGHTON BN1 9QG, England

a Physiology, biochemistry, and cell kinetics of the development of erythropoietic systems, both normal and mutant. Mus musculus (Rodentia)

b Regulation of cytodifferentiation during in vitro myogenesis


da Differentiation of embryonic cells in culture, particularly skeletal muscle, cartilage and retinal pigment cells: synthesis of specific proteins (myosin, collagen), glycosaminoglycans (chondroitin sulfate), synthesis and processing of RNA, and the effects of nucleoside analogs on cellular differentiation. Gallus domesticus (Aves)


a The possible role of sulfated mucopolysaccharides in normal and cleft palate development by employing radioactive sulfur (palatal defects induced by a transitory maternal deficiency of organic acid). Rattus norvegicus (Rodentia)

b Uptake of tritiated thymidine in normal and cleft palate development (palatal defects induced by a transitory maternal deficiency of organic acid). Same species as a

c Oro-facial abnormalities induced by the folic acid antagonist pyrimethamine. Mammalia

COLENOT, A. Drès Sci., Prof. — Lab. d’Embryol., Univ. de Paris VI, 9 quai St.Bernard, 75 PARIS Ve, France

a Development of the pineal gland (electron microscopy). (Cyclostomata; Reptilia; Aves; Mammalia)

b Embryogenesis and phylogenesis of the pineal gland. (Vertebrata)

c Proteins in the embryonic pineal gland (autoradiography and electron microscopy). (Vertebrata)

d Indolamines and catecholamines in the embryonic pineal gland. (Vertebrata)


a Development of the pineal gland (electron microscopy). (Cyclostomata; Reptilia; Aves; Mammalia)

b Embryogenesis and phylogenesis of the pineal gland. (Vertebrata)

c Proteins in the embryonic pineal gland (autoradiography and electron microscopy). (Vertebrata)

d Indolamines and catecholamines in the embryonic pineal gland. (Vertebrata)


a Electron microscopy of developmental stages. Hymenolepis citelli (Cestoda), Brugia pahangi (Nematoda)

b Morphology of third larval stage. Brugia pahangi (Nematoda)

COLLINS, M. F. Ph.D. — Dept. of Anat., Health Center, The Univ. of Connecticut, HARTFORD, Conn. 06105, U.S.A.

a Cellular surface properties and morphogenetic movements. Gallus domesticus (Aves), Mus musculus (Rodentia)

COŁL, KL. Dr. rer. nat. — Zool. Inst. der Univ., Weyeralt 119, 5 KÖLN 41, W.Germany

a Hormonale Steuerung des Proteinstoffwechsels in der Metamorphose. Ephesia kühniella (Lepidoptera)

COLOMERA, — Ist. di Biol. Anim., Univ. di Padova, Via Loredan 10, 35100 PADOVA, Italy

a Comparative spermatogenesis. (Enterogona, Ascididea) (with M. SALA)

COLOMBO, G. Dr.biol., Prof. — Ist. di Zool., Univ. di Ferrara, Via Previati 24, 44100 FERRARA, Italy

COLOMBO, L. Dr.biol.sci. — Ist. di Biol. Anim., Univ. di Padova, Via Loredan 10, 35100 PADOVA, Italy

a Differential embryonic myogenesis. (with M. SALA)

b no embryological work in progress

COLWIN, A. L. Ph.D., Prof. — Dept. of Biol., Queens Coll. of the City Univ. of New York, NEW YORK, New York, N. Y. 11367, U.S.A.

a Fertilization: sperm-egg association and zygote formation; cell contact and adhesion: fusion of plasma membranes; egg envelopes; lytic changes; cortical changes; sperm-
blastoschisma association (living material and electron microscopy). (Enteropneusta; Echinodermata; Annelida, etc.) (with L. H. COLWIN)

COLWIN, Mrs. L. HUNTER Ph.D., Prof. — Dept. of Biol., Queens Coll. of the City Univ. of New York, NEW YORK, FLUSHING, N.Y. 11367, U.S.A.

a Fertilization: sperm-egg association and zygote formation; cell contact and adhesion; fusion of plasma membranes; egg envelopes; lytic changes; cortical changes; sperm-blastomere association (living material and electron microscopy) (Enteropneusta; Echinodermata; Annelida, etc.) (with A. L. COLWIN)

COMOGLIO, P. M. M.D. — Cell and Molecular Biol. Lab., Dept. of Anat., Univ. of Torino, Corso M. D’Azezgl 52, 10126 TORINO, Italy

a Cell membrane differentiation; immunohistochemistry of surface macromolecules. Mus musculus (Rodentia)


CONNELLY, T. G. Ph.D. — Biol. Div., Oak Ridge Natl. Lab., P.O.Box Y, OAK RIDGE, Tenn. 37830, U.S.A.

a Influence of the pituitary on lens regeneration in the adult in vivo and in vitro. Notophthalmus (Triturus) viridescens (Urodela)

CONTE, G. M.D. — Ist. di Anat. e Istoembroliol., Univ. di Pisa, Via Roma 55, 56100 PISA, Italy

CONTI, G. M.D., Prof. — Inst. of Histol. and Gen. Embryol., Univ. de Fribourg, 1 rue Gockel, 1700 FRIBOURG, Switzerland

COOKE, J. Ph.D. — Sch. of Biol. Sci., Univ. of Sussex, Falmer, BRIGHTON BN1 9QG, England

a Dynamic properties of the fields of information in very early stages, and leading to the initial formation of patterns of cellular differentiation: methods: transplantations e.g. of organisers and rhythmical electrical stimulation by electrodes. Xenopus laevis and other spp. (Amphibia)

b The behaviour of growth cones of neurons studied in long term culture of embryonic brain and retina. Xenopus laevis (Anura)

CORLISS, C. E. Ph.D., Prof. — Dept. of Anat., Med. Units, Univ. of Tennessee, 800 Madison Ave., MEMPHIS, Tenn. 38103, U.S.A.

a Radioautography of nuclear migration in neural epithelium of normal and teratogen-treated embryos. Gallus domesticus (Aves)

CORNEC, J. P. Dr.spec. — Lab. de Morphogénét. Anim., Centre Saint Charles, Univ. de Provence, Place Victor Hugo, 13 MARSEILLE 3e, France

a Les facteurs qui déterminent l’absence de régénération. (Hirudinea)

CORNER, G. W. M.D., D.Sc., Prof. (Emer.) — American Philosoph. Soc., 104 South 5th St., PHILADELPHIA, Pa. 19106, U.S.A.


b Role of neural function in the embryonic development of the central nervous system (electrophysiology and neurohistology). Xenopus laevis (Anura), Gallus domesticus (Aves)

CORNIZU, Mrs. R. — Dépt. de Biol. Moléc., Inst. Suisse de Rech. Expér. sur le Cancer, rue Bugnon 21, 1011 LAUSANNE, Switzerland

a Red cell differentiation in erythroblastosis virus-induced anaemia. Gallus domesticus (Aves) (with S. P. MODAK and K. SCHERRER)

CORSIN, Miss J. Dr.és Sci. — Lab. d’Anat. Comp., Univ. Paris VII, 2 Place Jussieu, 75 PARIS Ve, France

a Experiments on cartilage and bone development in the skull. Pleurodeles waltlitt (Urodela)

COSTA, M. M.D. — Dept. of Anat., Univ. of Turin, Corso M.d’Azeglio 52, 10126 TORINO, Italy

COSTANZO, G. — Ist. Idrobiol. e Pescicol.t., Univ. di Messina, Via dei Verdi 75, 98100 MESSINA, Italy

a Ciclo vitale. Lichomolgus spp. (Cyclopoïda, Copepoda, Crustacea)

b Larval development in laboratory culture. Modiolicolinsignis (Cyclopoïda, Copepoda, Crustacea)

COSTELLO, D. P. Ph.D., Prof. — Dept. of Zool., Univ. of North Carolina, CHAPEL HILL, N.C. 27514, U.S.A.

COULOMB (GAY), Mrs. R. Lic.és Sc. — Lab. de Morphogénét. Anim., Centre Saint Charles, Univ. de Provence, Place Victor Hugo, 13 MARSEILLE 3e, France

a Variations des potentialités de régénération et hémihéteromorphoses. Eieseniiella tetraedra (Oligochaeta)
b Influence de l'ablation des ganglions cérébroids sur la régénération postérieure. Same species as a


b Development of ocular skeleton. Gallus domesticus (Aves) (with J. L. COULOMBRE)

COULOMBRE (LACY), Mrs. J. L. B.S. — Lab. of Vision Research, Natl. Eye Inst., Natl. Inst. of Health, BETHESDA, Md. 20014, U.S.A.


b Development of ocular skeleton. Gallus domesticus (Aves) (with A. J. COULOMBRE)

COULON (BUBLEX), Mrs. M. — Lab. de Biométrie, Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France

a Etude de la restauration après irradiation X dans ses rapports avec le déterminisme de la mue. Bombyx mori (Lepidoptera)

COULSON, Mrs. P. B. Ph.D. — Dept. of Zool. and Entomol., Univ. of Tennessee, KNOXVILLE, Tenn. 37916, U.S.A.

a Primary interactions and experimental steps in sperm capacitation and egg fertilization reactions. Rana pipiens (Anura)

COUNCE (NICKLAS), Mrs. S. J. Ph.D. — Dept. of Zool., Duke Univ., DURHAM, N.C. 27706, U.S.A.

a Embryo culture in vitro; experimental analysis of embryogenesis; developmental genetics and physiology; cytogenetics, including puffing patterns at various developmental stages in different tissues. Miastor spec. (Cecidomyiidae, Diptera)

b Genetics of egg structure (inheritance of egg pattern in different strains and species). Drosophila hydei and relatives, D. melanogaster (Diptera)

c Morphological and physiological effects of female-sterility genes. Same species as b

COUPE, R. J. F. Lic.ès Sci. — Lab. d'Anat. Comp., Fac. des Sci., 7 quai St. Bernard, 75 PARIS Ve, France

COUSINEAU, G. H. Ph.D. — Lab. de Biol. Moléc., Dépt. de Biol., Univ. de Montréal, C.P. 6128, MONTREAL 3, Que., Canada

a Measurement of the amount of translatable RNA in the presence of bentonite, and characterization of the proteins produced in vitro. Arbacia punctulata, Strongylocentrotus purpuratus, Lytechinus pictus (Echinoidea)

COWAN, W. M. Ph.D., Prof. — Dept. of Anat., Sch. of Med., Washington Univ., ST. LOUIS, Mo. 63110, U.S.A.


c Computer simulation of biological patterns. (with C. H. WADDINGTON)

CRACIUN, Mrs. O. L.Sc. — Cat. de Biol.-Histol., Inst. de Med. și Farmacie, St. Pasteur 6, CLUJ, Rumania

a Affrontement d'organes embryonnaires in vitro. Rattus rattus (Rodentia)

b Effets des hépatectomies sous-totales répétées. Rattus spec. (Rodentia)

CRAGG, B. G. Ph.D. — Dept. of Physiol., Monash Univ., CLAYTON, Vict. 3168, Australia

a Development of synapses in visual cortex. Felis domestica (Carnivora)

CRAIG, D. A. Ph.D. — Dept. of Entomol., Univ. of Alberta, EDMONTON, Alta., Canada

a Descriptive embryology. Anopheles stephensi, Gymnopais spec., Necurupira chiltoni, Simulium venustum, Prosimulium susanae (Nematocera, Diptera)

CRAIG, G. B. Dr. — Dept. of Biol., Univ. of Notre Dame, NOTRE DAME, Ind. 46556, U.S.A.

CRAWFORD, R. B. Ph.D., Prof. — Dept. of Biol., Trinity Coll., HARTFORD, Conn. 06106, U.S.A.

a The relationship of the synthetic pathways of adenosine triphosphate to morphogenesis and differentiation. Fundulus heteroclitus (Teleostei), Ambystoma maculatum (Urodela)

b The kinetics of RNA synthesis during early embryogenesis, especially in relation to energetics metabolism. Same species as a

c Activation of hexokinase activity in embryos. Ambystoma maculatum (Urodela)

d Relationship of free amino acid pool to protein synthesis in embryos. Same species as a


a Positional information. Rhodnius prolulus (Hemiptera)

b Fibrillar proteins in the cytoplasm.

c Proteins in or near cell membranes.

CRIPPA, M. M.D. — Lab. of Molec. Embryol., C.N.R., Via Toiano 2, 80072 ARCO FELICE (Napoli), Italy

a Control of transcription. Xenopus laevis (Anura)
a Developmental biology. (Cirripedia, Crustacea)

CRISTEA, Miss M. M.D. — Cat. de Biol.-Histol., Inst. de Med. și Farmacie, St. Pasteur 6, CLUJ, Rumania
a Influence d'alcool etylque sur le développement du foie embryonnaire (histochimie et biochimie) Rattus spec. (Rodentia)

CROISILLE, Y. Dr. — Inst. d'Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France
a Developmental, kinetic and immunological studies of enzymes (lactic dehydrogenases, hypoxantheme dehydrogenase, esterases) in different tissues. Gallus gallus (Aves)
b Immunohistological studies of the first appearance of organ-specific proteins during kidney differentiation. Same species as a

a Short-circuit current versus net ionic flux across the 6-day trophoblast membrane in order to identify the specific ions actively transported across the blastocoelic wall. Rattus spec. (Rodentia)
b Relationship between active ionic transport and fluid accumulation in the expanding blastocyst. Rattus spec. (Rodentia)

a Oocyte maturation: improvement of culture media: changes in oocyte metabolism (RNA, protein, energy) studied by isotope methods. Mus musculus, domestic animals, Homo sapiens (Mammalia)
b Factors responsible for successful fertilization in vitro. Same species as a

CROWELL, P. S. Ph.D., Prof. — Dept. of Zool., Indiana Univ., BLOOMINGTON, Ind. 47401, U.S.A.

CRUZ, A. R. M.D., Ph.D. — Dept. de Morfol. Hum. Func. e Aplic., Univ. de Sao Paulo, C.P. 301, RIBEIRAO PRETO, S.P., Brazil

CSABA, G. M.D., Prof. — Inst. of Histol. and Embryol., Med. Univ., Tüzoltó u. 58, BUDA-PEST IX, Hungary
a Experimental and physiological embryology; teratogenesis. Rattus rattus (Rodentia)
b Developmental genetics. Same species as a
c Molecular biology of mast cell formation. Same species as a

CSILLIK, B. M.D., Prof. — Dept. of Anat., Univ.Med.School, Kossuth L-sgt. 40, SZEGED, Hungary
a Developmental histochemistry of the archicerebellar cortex. Rattus rattus (Rodentia) (with P. KASA)
b Developmental histochemistry and electron microscopy of the vegetative ground plexus. Rattus rattus (Rodentia) (with E. KNYIHAR)
c Development of the adrenergetic inhibitory terminals in autonomic ganglia: fluorescence microscopy and electron microscopy. Rattus rattus (Rodentia) (with K. KALMAN and E. KNYIHAR)

CUMINGE, Miss D. Lic.ès Sci. — Inst. d'Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France
a Organogenese sexuelle précoce de l'embryon. Gallus gallus (Aves) (with R. DUBOIS)

CURTIS, A. S. G. Ph.D., Prof. — Dept. of Cell Biol., Univ. of Glasgow, GLASGOW W.2, Scotland, U.K.
a Structure and physical chemistry of embryonic cell surfaces. (Vertebrata)
b Segregation mechanisms in reaggregates of embryonic cells. (Vertebrata)
c Differentiation of cells in culture. (Vertebrata)
d Adhesion mechanisms in embryonic cells. (Porifera; Vertebrata)

CURY, G. Agr.Phil., Lic.ès Sci — Lab. d'Embryol., Univ. de Nancy I, 31 rue Lionnois, 54 NANCY, France
a La cytodifférenciation sanguine in vitro. Gallus domesticus (Aves)

CUSIMANO (CAROLLO), Mrs. T. D.Sc., Prof. — Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO, Italy.
a The causal development of the mouth. Discoglossus pictus (Anura)
M.D. • Functional
Effects
• Functional
Embryology
Development
Cleavage

3.
Cytological
Detection
Morphogenese
Regulation
Autoradiography
• Same
Molecular

Dr. en
b
CZYZEWSKA-LIEBHART, b
a
DABAGIAN
DADOUNE,
CZOEOWSKA,
CZAPSKA
DAEMEN,
CZIHAK,
DAIMON,
DALCQ,
DALLMAN,
DALTON,
DAMERON,
DALCQ, A. M., M.D., Prof. — U.R.E.D., Univ. libre de Bruxelles, 97 rue aux Laines, 1000 BRUXELLES, Belgium • Detection of various phosphatases and dehydrogenases in testicular tissue. (Mammalia)

b Enzymatic equipment of eggs during tubal period of development. (Rodentia)

DALLMAN, P. R. M.D. — Dept. of Pediat., Univ. of California, SAN FRANCISCO, Calif. 94122, U.S.A.


D'ANGELO, V. Ph.D., Prof. — Ist. di Istol. ed Embriol., Univ. di Palermo. Via Archirafi 20, 90123 PALERMO, Italy • Formation and structure of hemoglobin. Gallus spec. (Aves)

b Antigenic differentiation of red blood cell membrane. Gallus spec. (Aves)

DAMERON, Miss F. Dr.ès Sci. — Inst. d'Embryol. Expér. du Coll. de France et du C.N.R.S., 11 Place M. Berthelot, 75 PARIS Ve, France • Morphogenèse du poumon: 1. détermination de la maturation des structures spéciﬁques de l'épithélium (ultrastructure); 2. évolution du métabolisme du tissu pulmonaire (biosynthèse des lipides, activité enzymatique); 3. inﬂuence de mésenchymes hétérotropes sur l'évolution ultrastructurale de l'épithélium. Gallus gallus (Aves) (avec L. MARIN)

DAMJANOV, I. — Inst. of Biol., Univ. of Zagreb, Salata 3, 41001 ZAGREB, Yugoslavia • Preimplantation and early postimplantation stages: autoradiography, histochemistry, electron microscopy, Rattus norvegicus, Mus musculus (Rodentia) (with N. SKREB and D. SOLTER)

b Differentiation of early postimplantation stages under the kidney capsule, teratocarcinogenesis, nature of embryonic carcinoma cells; transplantation, electron microscopy. Mus musculus (Rodentia) (with N. SKREB and D. SOLTER)
Urethan teratogenesis in early embryos (histochemistry, electron microscopy). Same species as b (with D. SOLTER)

DAN, Mrs. J. C. Ph.D. — Embryol. Sect., Dept. of Biol., Ochanomizu Univ., 2-1-1 Otsuka, Bunkyo-ku, TOKYO, 112 Japan

a Acrosome formation; chemical characterization of acrosomal components; role of Golgi apparatus during spermiogenesis. *Mytilus edulis* (Lambillibranchia), (Echinoidea, Asteroidea, Ophiuroidea), *Oryzias latipes* (Teleostei)

b Mechanism of initiation of acrosome reaction. *Mytilus edulis* (Lambillibranchia), (Echinoidea)

DAN, K. Ph.D. Prof. — Tokyo Metropolitan Univ., 1-1 chome. Yakumo-machi, Meguro-ku, TOKYO, Japan

DAN (SOHKAWA), Mrs. M. D.Sc. — Lab. of Embryol., Fac. of Sci., Osaka City Univ., 459 Suqimoto-cho, Sumiyoshi-ku, OSAKA, Japan

a Mechanism of hemoglobin switch. *Rana catesbeiana* (Anura)

D’ANCONA (LUNETTA), Mrs. G. Ph.D. — Ist. di Istol. ed Embryol., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

a Sulphatases during embryonic development. *Ciona intestinalis* (Ascidiae)

b Analysis of the ovular mucin. *Physa acuta* (Gastropoda)

DANDRIEU, M. R. Drs. — Lab. of Anat. and Embryol., Free Univ., v.d. Boechorstr. 7, AMSTERDAM, Buitenveldert, Netherlands

a Innervation of the capsule articularis coxae in fetuses. *Homo sapiens* (Primates)

b The influence of high titers of antibodies against lens protein fractions in females before mating on fetal lens formation. *Oryctolagus cuniculus* (Lagomorpha)

DANEHOLT, B. Med.kand. — Dept. of Histol. Karolinska Inst., S-104 01 STOCKHOLM 60, Sweden

DANIEL, J. C., Jr. Ph.D., Prof. — Dept. of Molec., Cell. and Developm. Biol., Univ. of Colorado, BOULDER, Colo. 80302, U.S.A.

DANIELI, G. A. Dr. biol.sci. — Ist. di Biol. Anim., Univ. di Padova, Via Loredan 10, 35100 PADOVA, Italy

a Differentiation of salivary glands during larval development. *Drosophila hydei* (Diptera)


a Electron microscopy of normal and abnormal spermatogenesis of diploid and polyploid strains. *Bombyl mori, B. mandarina* (Lepidoptera) (with V. N. VEREISKAYA)

DANVMJIEFF, J. Med.Dr., Prof. — Anat.-Embryol. Lab., State Univ. of Leiden, Wassenaarseweg 62, LEIDEN, Netherlands

D’ANNA, T. Dr.nat.sci. — Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO, Italy

a Enzyme activity in embryonic development. (Ascidiae)

b The respiratory metabolism during embryonic development. (Ascidiae)

c Cytoplasmic DNA in eggs. (Ascidiae)

DAS, G. D. Ph.D., Prof. — Dept. of Biol. Sci., Purdue Univ., LAFAYETTE, Ind. 47907, U.S.A.

a Proliferation, migration, and differentiation of transplanted neuron precursors and undifferentiated neurons of the brain. (Mammalia)

b Neuroembryogenesis and morphogenesis of the cerebellum. *Rattus spec.* (Rodentia)

c Influences of transplanted pia mater on the proliferating and differentiating systems of the brain. (Mammalia)

d Projections of various neural structures on the spinal cord (neuroembryological and Guden’s techniques). (Mammalia)

e Electron microscopy of the differentiation and synaptogenesis of the interstitial nerve cells in the pyramidal and infra-pyramidal regions. (Mammalia)

D’ASARO, C. N. Ph.D., Prof. — Fac. of Biol., Univ. of West Florida, PENSACOLA, Fla. 32504, U.S.A.

a Embryogenesis and organogenesis through metamorphosis. *Bittium varium* (Gastropoda), *Codakia orbicularis* (Lambillibranchia), *Clypeaster rosaceus* (Echinoidea)

b Spawning and larval development. (Proscobanchia, Gastropoda)

DASGUPTA, B. Ph.D., Prof. — Dept. of Zool., Darjeeling Governm. Coll., North Bengal Univ., P. O. DARJEELING, W. Bengal, India

DAUGERAS, Miss N. — Lab. d’Anat. Comp., Fac. des Sci. d’Orsay, Bâtiment 441, 91 ORSAY, France

DAUWALDER (RICHARDS), Mrs. M. Ph.D. — Cell Res. Inst., B.L.220, Univ. of Texas, AUSTIN, Tex. 78712, U.S.A.

DAVENPORT, R. Ph.D. — Dept. of Zool., Univ. of Illinois, URBANA, III. 61801, U.S.A.

a Biochemistry of cellular interactions during oogenesis. *Onchopeltis fasciatus* (Hemiptera)

b Gene transcription during pre-larval development. *Ascidia nigra* (Ascidiae)

DAVID (BØGEI), Mrs. D. Dr.ès Sci. — Lab. de Biol. Anim., Univ. de Clermont. B.P. 45, 63 AUBIÈRE, France

a Organogénèse de l’estomac embryonnaire. *Oryctolagus cuniculus* (Lagomorpha)
DENUCÈ, J. M. Dr., Prof. — Dept. of Zool., Univ. of Nijmegen, Driehuizerweg 200, NIJMGEN, Netherlands

a Morphology, physiology, and biochemistry of the hatching glands. *Oryzias latipes, Brachydanio rerio* (Teleostei). *Xenopus laevis* (Anura)

b Changes in protein pattern during development. *Oryzias latipes, Brachydanio rerio* (Teleostei)

c Histochemical characterization of primordial germ cells. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)


a Developmental genetics of mutants with abnormalities of the inner ear. *Mus musculus* (Rodentia)

b Developmental genetics of mutants with abnormalities of pigmentation. *Mus musculus* (Rodentia)

DEPARIS, P. Dr.Biol. — Lab. de Biol. Génér., Univ. Paul-Sabatier, 118 Route de Narbonne, 31 TOULOUSE 04, France

a Hematopoiesis. (Urodela)

b Tissue transplantation. *Pleurodeles waltlii* (Urodela)

DÉPECHE, J. — Lab. d’Evol. des Etres Organisés, Fac. des Sci., 105 Bd. Raspail, 75 PARIS 6, France

a Physiology of embryos of viviparous species developing in vitro. *Lebistes reticulatus, Xiphophorus helleri, Gambusia affinis, Heterandria formosa* (Poeciliidae, Teleostei)

DERAY, A. Lic.ès Sci., Doct.3e Cycle — Lab. de Zool., Fac. des Sci., Place Maréchal Leclerc, 25 BESANÇON, France

a Differentiation sexuelles des hybrides. *Aves* (avec L. GOMOT)

DERBY, A. A. Ph.D. — Biol. Dept., Univ. of Missouri-St. Louis, 8001 Nat.Bridge Rd., ST. LOUIS, Mo. 63121, U.S.A.


b Qualitative and quantitative changes in pituitary gland activity during life cycle and identification of its hormones during metamorphosis. *Rana pipiens* (Anura)

DE REGGI, L. M. Dr.Spéc. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France

a Variations morphologiques et physiologiques dans le développement, sous l’action de divers facteurs. (Physiophilies, Hemiptera)

DEROM, R. M. J. M.D., Ph.D. — Dept. of Obstet. and Gynecol., Univ. of Ghent, Aan de Bocht 6, GENT, Belgium


a Ultrastructure and cytochemistry of the surface coat in early embryos. *Xenopus laevis* (Anura), *Triturus alpestris* (Urodela)

b Electron microscopy and cytochemistry of developing oocytes, especially nucleoli and nucleo-cytoplasmic relationships. *Xenopus laevis* (Anura)

DESVEAUX (CHABROL), Mrs. J. Lic.ès Sci. — Inst d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France

a Radioactive precursors incorporation in some embryonic tissues. *Gallus domesticus* (Aves)

b mRNA synthesis at the polysomal level in embryonic tissues: base composition of mRNA and rRNA. Same species as a (with L. I. SORIANO)

DE TERRA (WHITTAKER), Mrs. N. Ph.D. — Inst. for Cancer Research, 7701 Burholme Ave., PHILADELPHIA, Pa. 19111, U.S.A.

a Morphogenesis and nucleo-cytoplasmic interactions (microsurgery, histochemistry, autoradiography). *Stentor coeruleus* (Ciliata)


a Possible stimulation of the synthesis of developmental enzymes by cyclic AMP. *Dictyostelium discoideum* (Acrasiales)

DETTLÄFF, Mrs. T. A. Dr.biol.sci., Prof. — Inst. of Developm. Biol., Acad. of Sci. of the U.S.S.R., Vavilov St. 26, MOSCOW 117133, U.S.S.R.

a Regularities of the maturation process. (Acipenseridae, Chondrostei; Amphibia) (with S. I. DAVIDOVA and T. B. AISENSTADT)

b Regularities of transformation of the mitotic cycle during cleavage. (Acipenseridae, Chondrostei; Amphibia) (with G. GOLISHEVA)

c Relative duration of development. *Xenopus laevis* (Anura) (with T. RUDNEVA)

DE TURENNE, Miss M. Dr.Spéc. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France

a Control of DNA synthesis in the silk gland during the fifth larval instar. *Bombyx mori* (Lepidoptera)

DELuchar, Miss E. M. Ph.D. — Anat. Dept., Med. School, University Walk, BRISTOL BS8 1TD, England

a Processes of neural induction and early differentiation (tissue culture, biochemistry). *Xenopus laevis* (Anura)
b Morphogenetic movements and tissue differentiation in primitive streak to somite stages (cinematography and operations in embryo culture). *Rattus norvegicus* (Rodentia)

c Development of intraembryonic and intraterine organ grafts. Same species as b

d Effects of maternal immune sera and lymphocytes on embryonic tissues in *vivo* and

in *vitro*. *Mus musculus, Rattus norvegicus* (Rodentia) (with M. STANISSTREET, Liverpool)

DEVILLERS, Ch. Dr. d'es Sci., Prof. — Lab. d'Anat. Comp., Univ. Paris VII, 2 Place Jussieu, 75 PARIS V, France

a Respiration during early stages of egg development, especially relation with oxidative phosphylation as shown by the action of 2,4-dinitrophenol and some inhibitors of respiration. *Salmo irideus*, *S. fario* (Teleostei) (with Mrs. M. CHANCON-MAURY)

DE VINCENTII, M. Prof. — II. Chair of Histol. and Embryol., Univ. of Napoli, Via Mezzocannone 8, 80134 NAPOLI, Italy

DEWES, E. Dr. rer. nat. — Inst. für Entw. physiol., Univ. zu Köln, Gyrhofstr. 17, 5 KÖLN 41, W. Germany

a Experimental Untersuchungen zur postembryonalen Differenzierung und Regulations-

fähigkeit der männlichen Genitalimaginalanlagen. *Ephesia kühniella* (Lepidoptera)

DHAINAUT, A. — Serv. de Biol. Anim., Univ. des Sci. et Techn. de Lille, B.P. 36, 59 VILLENEUVE-D'ASCQ, France

a Electron microscopy and autoradiography of oogenesis. *Nereis diversicolor*, (Polychaeta)

b Oogenesis in the absence of brain hormone. (Nereidae, Polychaeta)

DHOUAILLY, Miss D. Dr. spéc. — Lab. de Zool. Inst. de Rech. Biol., Univ. Scient. et Méd. de Grenoble, Cedex 53, 38 GRENOBLE, France

a Analysis of the differentiation of supernumerary limb; study of the plumage that develops therein. *Gallus domesticus, Anas boschas* (Aves)

b Experiments on the differentiation of the cutaneous appendages in chimaeric organisms between different species. (Aves, Mammalia)

DIAMOND, M. Ph.D., Prof. — Dept. of Anat., Univ. of Hawaii, 1960 East-West Rd., HONOLULU, Hawaii 96822, U.S.A.

a Sexual differentiation and masculinization. *Cavia porcellus, Rattus norvegicus* (Rodentia), *Homo sapiens* (Primates)

b Pseudopregnancy. *Cavia porcellus, Mesocricetus auratus* (Rodentia), *Oryctolagus cuniculus* (Lagomorpha), *Homo sapiens* (Primates)

c Sexual behavior and reproduction. *Cavia porcellus, Rattus norvegicus, Mesocricetus auratus* (Rodentia), *Homo sapiens* (Primates)


a Nuclear, chromosomal, and cytoplasmic changes during development. *Rana pipiens* (Anura)

DICK, D. A. T. D.Phil., Prof. — Dept. of Anat. Univ. of Dundee, DUNDEE DD1 4HN, Scotland, U.K.

a Study of water and ion fluxes in oocytes. *Bufo bufo* (Anura)

DICKINSON, W. J. Ph.D. — Biol. Dept., The Reed College, PORTLAND, Ore. 97202, U.S.A.

a Genetic regulation of enzymes during development, especially genes controlling the differentiated tissue distribution of aldehyde oxidase. *Drosophila melanogaster* (Diptera)

DICKSON, A. D. M.D., Prof. — Div. of Morphol. Sci., Fac. of Med., Univ. of Calgary, CALGARY 44, Alta., Canada

a Control and significance of trophoblastic giant cell transformation of the blastocyst. *Mus musculus* (Rodentia)

b Hormonal secretion by unimplanted blastocysts. *Mus musculus* (Rodentia)

DICKSON, D. H. M.Sc. — Dept. of Anat., Univ. of W.Ontario, LONDON, Ont., Canada

DICKSON, D. ROSS Ph.D., Prof. — Dept. of Anat., Cleft Palate Center, Univ. of Pittsburgh, 320 Salk Hall, PITTSBURGH, Pa. 15213, U.S.A.

a Morphology of the cartilages, ligaments, joints and muscles of the larynx from the end of the second fetal month to adulthood. *Homo sapiens* (Primates)

DI DINO, Miss G. Dr. rer. nat. — Ist. di Anat. Umana Norm., 2a Catt., Univ. di Catania, Via Biblioteca 4. 95124 CATANIA, Italy

a The ciliary ganglion in anencephaly. *Homo sapiens* (Primates)

DIEHL, F. A. Ph.D. — Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, Va. 22903, U.S.A.

a Problems of development: cell and tissue migrations; the roles of individual cell types during morphogenesis; the synthesis of extracellular mesoglea and perisarc and their role in development. *Cordylophora caspia* (Hydrozoa)

DIETERLEN (LIEVRE), Mrs. F. Dr.és Sci. — Inst. d’Embryol. Expér. du Coll. de France et du C.N.R.S., 11 Place M. Berthelet, 75 PARIS V, France

a Formation of abnormal hepatic tubules after association to bird embryonic liver of mouse embryonic organs developing as coelomic graft. *Gallus gallus, Coturnix japonica* (Aves), *Mus musculus* (Rodentia)

b La différenciation chimique du pancréas de l’embryon. *Gallus domesticus* (Aves) (avec D. BEAUPAIN)
DI GRANDE, Miss F. Dr. — Inst. of Zool., Fac. of Sci., Univ. of Bologna, Via S. Giacomo 9, 40126 BOLOGNA, Italy

a X-ray treatment of germ cells, sterile gonad development and sex differentiation. Bufo bufo, Rana dalmatina (Anura)
b Descriptive and experimental study of development and sex differentiation of genital apparatus. Sepia officinalis (Cephalopoda)

DIJK, Miss J. G. van Drs. — Lab. for Cell Biol. and Histol., State Univ., Rijnsburgerweg 10, LEIDEN, Netherlands

a The influence of parathyroid hormone on the morphology of embryonic and adult mammary glands in vitro, on the Ca-concentration of the gland in different stages, and on the milk. Mus musculus (Rodentia)

DILLARD, W. L. Ph.D. — Dept. of Zool., Univ. of Oklahoma, 730 Van Vleet Oval, Rm. 222, NORMAN, Okla. 73069, U.S.A.
a RNA biosynthesis in nucleate and anucleate cells. Acetabularia mediterranea. A. crenulata, Aciculata schenki (Chlorophyta)
b Macromolecular changes during microstome-macrostome transformation. Tetrahymena vorax, T. pyriformis (Ciliata)

DI MARCOTULLIO, A. D.Sci. — Inst. of Zool. and Comp. Anat., Univ. of Trieste, Via A. Valerio 32, 34127 TRIESTE, Italy

a Regeneration and germ cell differentiation. (Planariidae, Turbellaria)

DIMOND, Sister M. T. Ph.D., Prof. — Dept. of Biol., Trinity Coll., WASHINGTON, D.C. 20017, U.S.A.

a Histogenesis and interrelations of endocrines: the hypophysis under normal conditions and after treatment with goitrogens; the developmental sequence of organic iodine compounds in the thyroid; ultimobranchial body and calcitonin in bone development. Chelydra serpentina serp. and other spp. (Chelonia)

a The possible directive influences of the transplanted carpal blastema over subjacent minced limb muscle fragments implanted in the orbit. Ambystoma mexicanum (Urodela)
b Electron microscopy of the relative ratios of satellite cells in regenerating and non-regenerating limb musculature. (Amphibia; Mammalia)

DI STEFANO, L. Ph.D. — Ist. di Istol. ed Embriol., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

a Reticulocyte maturation in the embryo. Gallus spec. (Aves)


a Developmental and physiological genetics of isoaamylases: analysis of genetic regulatory mechanisms in cellular differentiation as revealed through the combined techniques of biochemistry, genetics and cyagenetics. Drosophila melanogaster, D. hydei and other spp. (Diptera)
b Developmental and experimental analysis of mutants characterized by abnormalities in lipid and carbohydrate metabolism, as well as in endocrine and reproductive physiology. Drosophila melanogaster (Diptera)

DOBKIN, Sh. Ph.D., Prof. — Dept. of Biol. Sci., Florida Atlantic Univ., BOCA RATON, Fla. 33432, U.S.A.

a Description of larval stages. Macrobachium offeris (Decapoda, Crustacea)

DOBROWOLSKI, J. M.Sc. — Dept. of Zool., Wyzsza Szkoła Pedagogiczna, ul. Podbrzezie 3, KRAKÓW, Poland

DODSON, J. W. Ph.D. — Dept. of Zool., Univ. of Bristol, BRISTOL BS8 1UG, England

a Temporal aspects of genetic expression in early embryos. Mus musculus (Rodentia)
b Prenatal diagnosis of biochemical and cytogenetic abnormalities. Homo sapiens (Primates)

DOHLE, W. Dr rer. nat. — I. Zool. Inst. der Freien Univ., Kön.-Luiser Str. 1-3, 1 BERLIN 33, W.Germany

DOLFINI, Miss S. D.Sc. — Ist. di Genet., Univ. di Milano, Via Celoria 10, 20133 MILANO, Italy

a Development and cytology of cultured cells. Drosophila melanogaster (Diptera)

DOLLANDER, A. Dr.en Méd., Prof. — Lab. d’Embryol., Univ. de Nancy I, 31 rue Lionnois, 54 NANCY, France

a Ultrastructure du développement de la glande surrenale. Gallus domesticus (Aves)
b Ultrastructure du cortex de l’oeuf. Triturus spec. (Urodela)

DOMAC (TESAR), Mrs. B. M.D., Sc.M.D. — Inst. of Histol. and Embryol., Fac. of Med., P.O.Box 166, Salata 3, 41001 ZAGREB, Yugoslavia

a Selective inhibitory effects of the hypophysis upon growth and differentiation of the adrenal glands in the fetus. Rattus norvegicus (Rodentia)
b Teratogenic effect of some quinoliziners on neural plate and tube derivatives (in vivo injection and histochemistry). Oryctolagus cuniculus (Lagomorpha), Rattus spec. (Rodentia)
DOMINICI, C. M. — Inst. of Histol. and Gen. Embryol., Univ. of Perugia, Via del Giochetto, 06100 PERUGIA, Italy
a Histochemical analysis of morphogenesis in vitro compared with that in vivo. *Gallus domesticus* (Aves)

a The effects of maternal diet on embryonic fat metabolism (fatty acid biosynthesis, oxidation. and interconversion). *Gallus domesticus*, Coturnix c. japonica (Aves)

DONATO (CEL1), Mrs. A. — Ist. di Zool. e di Anat. Comp., Univ. di Messina, Via dei Verdi 75, 98100 MESSINA, Italy
a Vitellogenesis. (Teleostei)

DONGEN, C. A. M. van M.Sc. — Zool. Lab., State Univ. of Utrecht, Janskerkhof 3, UTRECHT, Netherlands
a Biochemistry of protein synthesis during early development (radio-isotopes, disc-electrophoresis). *Lymnaea stagnalis* (Gastropoda)
b Cell-lineage of normal and lobeless embryos. *Dentalium* spec. (Scaphopoda)

DONELLY, Miss G. — Depts. of Microbiol. and Biochem., Med. Center, Univ. of Kentucky, LEXINGTON, Ky. 40506, U.S.A.

DOORENMAALEN, W. J. van M.D., Prof. — Dept. of Med. Anat. and Embryol., State Univ. of Utrecht, Janskerkhof 3A, UTRECHT, Netherlands
• Immunological and immunohistological investigations on lens proteins in induction and differentiation. (Aves). *Homo sapiens* (Primates)

DORFMAN, A. — Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, CHICAGO, Ill. 60637, U.S.A.

DORGAN, W. J. Ph.D. — Dept. of Zool.-Entomol., Montana State Univ., BOZEMAN, Mont. 59715, U.S.A.
a Age-related changes in placentals giant cells in tissue culture. *Rattus norvegicus* (Rodentia)

DÖRR, H. — Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, W.Germany
• Effects and mode of action of temperature on puffing patterns in giant chromosomes. *Chironomus thummi* (Diptera)

DOSKOCIL, M. MUDr. D.Sc., Prof. — Dept. of Anat., Charles Univ., U nemocnice 3, PRAHA 2, Czechoslovakia
a Experimental embryology of the hypophysis. *Gallus domesticus* (Aves)

a The fine structure of endocrine organs of normal and hypophysectomized embryos. *Gallus domesticus* (Aves)
b The fine structure of embryonic organs (descriptive). Same species as a
c Development of function and fine structure of mesonephric and metanephric kidneys, liver, and pancreas. Same species as a

DOSTAL, M. MUDr. — Lab. of Plastic Surg., Dept. of Exper. Teratol., Czechoslov. Acad. of Sci., Legerova 61, PRAHA 2, Czechoslovakia
a Development of the secondary palate under normal and experimental conditions. *Mus musculus*. *Rattus norvegicus* (Rodentia)
b Elaboration of an appropriate method for testing the teratogenic activity of drugs. Same species as a

• Effect of irradiation of spermatozoa in vitro under various conditions on the development of eggs exposed to them. *Oryctolagus cuniculus* (Lagomorpha)
b Lysosomal enzymes and spermatozoa. (Mammalia)

DOUCET (DE BRUIN), Mrs. M. H. M. M.Sc. — Hubrecht Lab. (Intern. Embryol. Inst.), Uppsalaalaan 1, Universiteitscentrum “De Uithof”, UTRECHT, Netherlands
a Induction of gastrulation. *Ambystoma mexicanum* (Urodela)


DOWNIE, J. R. B.Sc. — Dept. of Zool., Univ. of Glasgow, GLASGOW W.2, Scotland, U.K.
a Cell behaviour, mainly epithelial cells, in the expansion of the blastoderm. *Gallus gallus* (Aves)
b Development of specialised cell contacts in the early blastoderm. *Gallus gallus* (Aves)

DRACHMAN, D. B. M.D., Prof. — Dept. of Neurol., Johns Hopkins Hosp., 601 North Broadway, BALTIMORE, Md. 21205, U.S.A.
a Development of joints and joint malformations. *Gallus domesticus* (Aves)
b Development of muscle and neuromuscular connections. Gallus domesticus (Aves), (Mammalia)

c Developmental neuropharmacology (transmitter substances). Gallus domesticus (Aves)

d Trophic influence of motor neurons in developing muscle. Gallus domesticus (Aves), (Mammalia)


a The organogenesis gradients in the hyoido-mandibular section of the lateral sensory system. Acipenser golddentatidii, A. ruthenus (Chondrostei)

DREYER, Miss M. V. M.Sc. — Dept. of Zool., Univ. of the O.F.S., BLOEMFONTEIN, S.Africa

a The application of different stains (with differences of the pH) to detect the Nissl bodies in embryonic and adult neurons. Gallus domesticus (Aves), Ornitholyx africanus (Lagomorpha)

DRUGA (PUSZTASZERI), Mrs. A. M.D. — Inst. of Histol. and Embryol., Med. Univ., Tűzoltó u. 58, BUDAPEST IX, Hungary

a Teratogenetic effect of chemicals, especially drugs containing the piperazin ring. Rattus rattus (Rodentia)

b The importance of the praedifferential stage in teratogenesis. Same species as a

DRUKKER, J. Ph.D. — Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands

a Descriptive and experimental studies of the developing central nervous system. Gallus domesticus (Aves)

b Histochemical characteristics of developing chemoreceptor organs. Ornitholyx africanus (Lagomorpha), Mus musculus. Rattus norvegicus (Rodentia)

c Embryology of the endocrine cells of the pancreas. Same species as a

DÜBENDORFER, A. Dipl.phil.II — Zool.-Vergl. Anat. Inst., Univ. Zürich, Künstleriagasse 16, CH-8006 ZÜRICH, Switzerland

a Determination and cell lining in imaginal discs. Musca domestica (Diptera)

DUBEN, P. N. M.Sc., Prof. — Dept. of Anat., Med. Coll., NAGPUR-3, M.S., India

a Regeneration of the apical ectodermal ridge: its influence on individuation of distal limb elements (histology). Gallus domesticus (Aves) (with S. S. NAVAGIRI and T. L. PATIL)

b Morphology and histochemistry of metanephros development to stage 40. Same species as a (with A. QUADEER)

c Effect of removal of the optic vesicle on histogenesis of the optic lobe. Same species as a
(with V. M. SALTHE)

DUBY (TIWARI), Mrs. R. M.Sc. — Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD-2, U.P., India

a Cuticle proteins in egg shell, larva, and pupa (electrophoresis). Philosamia ricini (Lepidoptera) (with R. PANT)

DUBOIS, R. Dr. — Inst. d'Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France

a Lignée germinale et morphogénèse sexuelle. Gallus gallus (Aves) (avec D. CUMINGE)

DUERksen, J. D. Ph.D., Prof. — Dept. of Biol., Univ. of Calgary, CALGARY 44, Alta., Canada

a Genetic expression and its regulation in eucaryotic and procarayotic cells. Mus musculus (Rodentia)


a Comparative histology of the ovary (including developmental stages and history of germ cells). (Mammalia)


a Cytology of the oocyte, especially development and vitellogenesis. Xenopus laevis (Anura)

b Electron microscopy of Wolffian lens regeneration. (Urodela)

DUNCAN, D. Ph.D., Prof. (Emer.) — Dept. of Anat., Med. Branch, Univ. of Texas, GALVESTON, Tex. 77550, U.S.A.

DUNCAN, J. T. Ph.D., Prof. — Dept. of Cell and Molec. Biol., School of Nat. Sci., San Francisco State Coll., SAN FRANCISCO, Calif. 94132, U.S.A.

a Pigment cell migration and differentiation; developmental control of migration and pattern formation; developmental behavior of chromatophores and their immunological interactions in mixed populations of pigment cells from different species or from animals with different pigment pattern genotypes. Taricha torosa, Ambystoma mexicanum (Urodela)

b Heart determination and differentiation; temporal and spatial patterns of control of heart development; isolation and characterization of intracellular materials controlling heart development. Taricha torosa, Ambystoma tigrinum (Urodela)

DUNG, H. C. Ph.D. — Dept. of Anat., Univ. of Texas Med. School at San Antonio, 7703 Floyd Curl Drive, SAN ANTONIO, Tex. 78229, U.S.A.

a Etiology of the developmental abnormalities in the "torpid" mutant. Mus musculus (Rodentia)
DUPRAT (ESCUIDIE), Mrs. A.-M. Dr.és Sci. — Lab. de Biol. Génér., Univ. Paul-Sabatier, 118 Route de Narbonne, 31 TOULOUSE 04, France
a Experiments on the differentiation of cultured embryonic cells. (Uroidea) (with J. C. BEETSCHEN)

DURAN de LOPEZ, Mrs. L. M.D. — Cat. de Embriol., Fac. de Med., Univ. de Los Andes, MÉRIDA, Venezuela
a Developmental pathology, especially rachischis, sympodia, anomalies of the urogenital system etc. Homo sapiens (Primates)
b Developmental and functional anatomy of the mammmary gland in relation with hormonal control especially of the placenta and the gonads. (Rodentia), Homo sapiens (Primates)
c Histo- and toxoplasmosis as teratogenic factors. Homo sapiens (Primates) (with E. KLEISS)

DURAND, J. P. — Lab. Souterrain du C.N.R.S., 09 MOULIS, France
a Experiments on onogenesis and eye degeneration. Proteus anguinus (Uroidea)
b Reproduction and development. Hydromantes italicus (Uroidea)

DURANTE, Miss M. C. D.Sci., Prof. — Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO, Italy.
a The biochemistry of regeneration. (Annelida)

DURCHON, M. Prof. — Lab. de Zool., Univ. des Sci. et Techn. de Lille, B.P. 36, 59 VILLENEUVE-D'ASCQ, France

DURST (ZIVKOVIĆ), Mrs. B. M.D., D.Sc. — Inst. of Histol. and Embryol., Univ. of Zagreb, Salata 3, P.O.Box 166, 41001 ZAGREB, Yugoslavia
a Differentiation of the stroma of chorionic villi. Homo sapiens (Primates)

DURSTON, A. J. Dr.phil. — Sch. of Biol. Sci., Univ. of Sussex, Falmer, BRIGHTON BN1 9QQ, England
a Chemotactic signalling and pattern formation. Dictyostelium discoideum (Acraelae)

DUSPIVA, F. Dr., Prof. — Zool. Inst. der Univ., Physiol. Lehrstuhl, Berlinerstr. 15, 6900 HEIDELBERG, W. Germany
a Localization of enzymes within the embryo and in subcellular fractions. (Insecta; Amphibia)
b Protein differentiation, ontogeny of enzyme patterns. (Insecta; Amphibia)
c Energy metabolism and metabolism of nucleic acids, nucleotides, cofactors during development. (Teleostei; Amphibia)
d Cell-physiological mechanisms of malformation in early development. (Amphibia)

DUTRIEU, Miss J. Dr.és Sci. — Lab. de Physiol. Gén., Fac. des Sci. de Bordeaux, Av. des Facultés, 33 TALENCE, France

DUTTON, R. W. Ph.D., Prof. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.
a Development of immune system; in vitro differentiation of immunogenic response. Mus musculus (Rodentia)

DUVAL-BEAUPERE, Mrs. G. — Lab. d'Anat., Univ. Paris V — René Descartes, 45 rue des Saints Pères, 75 PARIS 6, France
a Growth data of limbs and spinal column. Homo sapiens (Primates)

DWORKIN, M. Ph.D., Prof. — Dept. of Microbiol., Med. School, Univ. of Minnesota, MINNEAPOLIS, Minn. 55455, U.S.A.
a Developmental biology of fruiting. Myxococcus xanthus (Myxobacteria)
b Relationship of developmental cycle and ecology. Myxococcus xanthus, Stigmatella aurantiaca (Myxobacteria)

a The effects of hyperglycaemia and insulin on embryonic tissues grown in vitro. Gallus gallus (Aves)
b Growth of heart muscle in vitro. Same species as a

DYLEVSKÝ, I. MUDr. — Dept. of Anat., Charles Univ., U nemocnice 3, PRAHA 2, Czechoslovakia
a Prenatal development of muscles. Homo sapiens (Primates)

DYSON (DEPLEDGE), Mrs. M. Ph.D. — Dept. of Anat., Guy’s Hosp. Med. School, LONDON S.E.1, England
a Mechanism and effect of ultrasonically induced red cell stasis in development. Gallus domesticus (Aves)
b Stimulation of tissue regeneration by ultrasound: 1. the effects of ultrasonically induced anaerobiosis on granulation tissue and blastemata; 2. protein synthesis; 3. cell mobility. Orctolagus cuniculus (Lagomorpha), Mus musculus (Rodentia)

EAKIN, R. M. Ph.D., Prof. — Dept. of Zool., Univ. of California, BERKELEY, Calif. 94720, U.S.A.

a Electron microscopy of induction systems. Hyla regilla (Anura)
b Development of photoreceptors. Helix aspersa (Gastropoda) (and other Invertebrata)

EAYRS, J. T. Ph.D., D.Sc., Prof. — Dept. of Anat., Med. School, Univ. of Birmingham, Edgbaston, BIRMINGHAM B15 2TJ, England

a Effects of hormones on central nervous development. Rodentia

EBERT, J. D. Ph.D., Prof. — Dept. of Embryol., Carnegie Inst. of Washington, 115 W.University Parkway, BALTIMORE, Md. 21210, U.S.A.

b Dept. of Biol., Johns Hopkins Univ., Charles & 34th Sts., BALTIMORE, Md. 21218, U.S.A.
a Animal viruses (esp. tumor viruses) as tools in studying embryonic development. Gallus gallus (Aves) (with C. W. ORR, and J. RASH)

ECHAVE LLANOS, J. M. M.D., Prof. — Inst. de Embriol., Biol. e Histol., Fac. de Cienc. Med., Univ. Nac. de La Plata, 60 y 120, LA PLATA, Argentina

a Analysis of growth control (tissue and humoral factors) of liver tissue in ontogenetic, regenerative and neoplastic growth; circadian rhythms of growth variables. Mus musculus (Rodentia)
b Ultrastructure of the pars distalis of the hypophysis in growth situations (ontogenesis, liver regeneration, and hepatomas). Mus musculus (Rodentia)

ECKSTEIN, P. M.D., D.Sc., Prof. — Dept. of Anat., Med. School, Univ. of Birmingham, Edgbaston, BIRMINGHAM B15 2TJ, England

a Mode of action of intra-uterine devices: 1. hormone concentrations in blood at critical stages of primate cycle; 2. composition of tubo-uterine secretions; 3. tissue reactions to intra-uterine materials. Rattus rattus (Rodentia), Macaca mulatta, Papio papio ( Primates)


b Development of transplantation antigens. Mus musculus (Rodentia)
b Expression of histocompatibility antigens in the early embryo. Mus musculus (Rodentia)
c Relationship between tumor cell surface antigens and embryo cell surface antigens. Mus musculus (Rodentia)


a The action of inherited abnormalities and lethal genes in development. Gallus gallus (Aves)
b Experimental studies on limb bud development. Gallus gallus (Aves)
c Cell adhesion and movement, and cell death and degeneration in normal and mutant embryos. Gallus gallus (Aves)


a Development of transplantation antigens. Mus musculus (Rodentia)
b Expression of histocompatibility antigens in the early embryo. Mus musculus (Rodentia)
c Relationship between tumor cell surface antigens and embryo cell surface antigens. Mus musculus (Rodentia)

EDSTRÖM, J.-E. — Dept. of Histol., Karolinska Inst., S-140 01 STOCKHOLM 60, Sweden

a Formation of adhesions in reaggregating cells: embryonic cells, Gallus domesticus (Aves), cultured cell lines, various species

EDWARDS, R. G. D.Sc. — Marshall Lab., Dept. of Physiol., Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3EG, England

a Genetics and embryology of pre-implantation stages. Homo sapiens ( Primates) and other Mammalia
b Immunology of reproduction. Homo sapiens ( Primates) and other Mammalia

a Morphology and biochemistry of somatic embryogenesis (microcinematography, histology, autoradiography). Ephedra fluviatilis, Spongilla lacustris, Hippopsonia communis, Agelas oroides, Hamigera hamigera (Porifera)

EGAMI, N. Ph.D., Prof. — Zool. Inst., Univ. of Tokyo, Hongo 7-3, Bunkyo-ku, TOKYO, 113 Japan

a Change in radiation-sensitivity during embryonic development. Oryzias latipes (Teleostei)
b Embryology of endocrine organs. Same species as a

EGELHAAF, A. Dr.rer.nat., Prof. — Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, W.Germany

a Genetische Grundlagen der Differenzierung von Augenpigmenten. Ephestia kühniella (Diptera)
b Morphogenetische Genwirkungen. Ephestia kühniella (Lepidoptera), Drosophila melanogaster (Diptera)
c Genetik und Physiologie der Blutproteine im Entwicklungsverlauf. (Insecta)


a Enzyme histochemistry of tissues. Drosophila melanogaster (Diptera)
EGUCHI, G. Ph.D., Prof. — Lab. of Cell Sci., Inst. of Biophys. and Molec. Biol., Fac. of Sci., Univ. of Kyoto, Sakyoku-ku, KYOTO, Japan
a Molecular and cellular events in Wolffian lens regeneration. *Trirurus pyrhogaster* (Urodela)
b Stability in the differentiation of chondrocytes and lens epithelial cells in clonal cell culture. *Gallus gallus* (Aves), *Mus bactrianus* (Rodentia) (with T. S. OKADA and M. TAKEIUCHI)

EHN, J. A. Fil.Dr. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden
a Effects of sulphhydryl-blocking and other substances on development of the embryo. *Aegleina labrithina* (Arachnoidea)
b Animalization and vegetalization of the embryo by means of chemical agents. Same species as a

EICHER, Miss E. M. Ph.D. — Dept. of Biol., Coll. of Arts & Sci., Univ. of Rochester, ROCHESTER, N.Y. 14627, U.S.A.

EISSLIN, J. A. Fil.Dr. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden
a Effects of sulphhydryl-blocking and other substances on development of the embryo. *Aegleina labrithina* (Arachnoidea)
b Animalization and vegetalization of the embryo by means of chemical agents. Same species as a

EISSLIN, J. A. Fil.Dr. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden
a Effects of sulphhydryl-blocking and other substances on development of the embryo. *Aegleina labrithina* (Arachnoidea)
b Animalization and vegetalization of the embryo by means of chemical agents. Same species as a

ELBER, P. F. Ph.D. — Biol. Ultrastruct. Res. Unit, State Univ. of Utrecht, Sorbonnelaan 4, Utrecht, Netherlands

ELGER, W. A. M.D. — Inst. für Endokrinpharmakol., Schering A.G., Müllerstr. 172, 1 BERLIN 65, W.Germany
a Experiments on sex differentiaion, using androgens and antiandrogens; the possible occurrence of two sex inducers. *Oryctolagus cuniculus* (Lagomorpha), *Mus musculus*, *Rattus norvegicus* (Rodentia)
b Immunology of embryonic gonads. Same species as a

a Biophysical (osmotic, therimc, densitometric) and biochemical (proptides, water, minerals) aspects of the efiects of exogenoe noxae on the embryonic liquid. *Gallus domesticus* (Aves), *Rattus norvegicus* (Rodentia)

ELIASSON (KLEIN), Mrs. E. Fil.Dr. — Wenner-Gren Inst., Norrtullsgatan 16, S-113 45 STOCKHOLM, Sweden
a Enzyme induction and repression, particularly arginase. *Gallus spec.* (Aves)
b Induction and repression of enzyme synthesis in cells in tissue culture. *Homo sapiens* (Primates)

a RNA and protein metabolism in salivary glands during development. *Drosophila melanogaster* (Diptera)

ELLIOTT, D. S. Ph.D. — Natl. Inst. of Environm. Health Sci., P.O.Box 12233, RESEARCH TRIANGLE PARK, N.C. 27709, U.S.A.
a Microenvironment of the early cleavage stages: characterization and effect of changes on embryonic development. *Mus musculus*, *Rattus spec.* (Rodentia), *Oryctolagus cuniculus* (Lagomorpha)
b Methods of storage for unfertilized eggs and embryos (progesterone, low temperature), and viability tests by transfer to recipients. Same species as a


a Differentiation of eye lens fiber cells: 1. stability increase of the proteins which control the turning on of macromolecular synthesis, 2. control of various RNA species by the different regulator molecules. *Bois taurus* (Artiodactyla)
b Genetic control of chondrogenesis on the macromolecular level in the crepper mutation (cell cycle times of genotypically different chondrocytes). *Gallus domesticus* (Aves)

a Morphogenesis in cell cultures. *Homo sapiens* (Primates)

EMANUELSSON, H. Fil.Dr. — Zoophysiol. Inst., Univ. of Lund, Helgonavägen 3, 223 62 LUND, Sweden

a Heterochrony in appearance and rate of development of dorsal and anal fin elements (radialia, musculature, fin rays, fin folds). *Salmo salar*, *Esox lucius*, *Tetragonopterus*
rubropictus, Rutilus rutilus, Callichthys fasciatus, Hoplochilus pleferi, Perca fluviatilis, Atherina hepsetus (Teleostei)
b Early postembryonic development and individual variability. Acipenser guldenstädtii, A. stellatus, A. nudiventris, Huso huso (Chondrostei)
EMERIT, M. Dr.-es Sci. — Lab. de Zool. II, (Morphol. et Ecol.), Univ. des Sci. et Techn. du Languedoc, Place Eugène Bataillon, 34 MONTPELLIER, France
a Embryonic and post-embryonic development. Gasteracantha spec., Isoxya spec., Acro-
somoiodes spec. (Gasteracanthinae, Araneida, Arachnida)
EMMERICH, H. Dr. — Zool. Lab., Dept. of Cell Biol., Univ. of Nijmegen, Driehuizerweg 200, NIJMGEN, Netherlands
a Steroid hormone metabolism, especially hormone binding in cytoplasm and nuclei of saline gland cells. Drosophila hydei (Diptera)
EMMERT, W. Dr.rer.nat. — Zool. Inst. der Univ., Röntgenring 10, 87 WÜRZBURG, W.Germany
b Postembryonic development and metamorphosis. Calliphora erythrocephala (Diptera)
a Chromosomal studies of early embryos, especially electron microscopy. Mus musculus, Rattus spec., Mesocricetus auratus (Rodentia)
ENDO, Y. D.Sc. — Dept. of Biol., Keio Univ., YOKOHAMA-Hiyoshi, Japan
a Fertilization and development. (Echinoidea)
r Electron microscopy of oogenesis. (Echinoidea)
ENEMAR, E. A. W. — Prof. — Inst. of Zool., Univ. of Gothenburg, Fack, S-400 33 GOTHEN-
BURG 33, Sweden
a Development of hypothalamo-hypophysial connections. Rana temporearia (Anura)
ENGELS, W. Dr.rer.nat. — Zool. Inst. der Univ., Badestr. 9, 44 MÜNSTER/Westf., W.Germany
a Speed of yolk formation: composition of reserve proteins (radio-isotopical methods). Apis mellifera (Hymenoptera)
  b Regulation and enzymatic conditions of glycogen synthesis in oogenesis (radio-isotopical methods). Musca domestica (Diptera)
ENGLAND, Mrs. M. A. B.A. — Dept. of Anat., Royal Free Hosp., Sch. of Med., Hunter Street, LONDON W.C.1, England
a Primary neural induction. Gallus domesticus (Aves)
  b Electron microscopy and histochemistry of yolk formation. Gallus domesticus (Aves)
(with M. R. BELLAIRS)
ENGLANDER, H. Dr.med., Dr.rer.nat., Prof. — Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, W.Germany
a Regionalspezifische Induktion. (Urodela)
  b Die Wirkung von Lithium auf die Differenzierungsfähigkeit des Ektodermis. (Urodela)
  c Disaggregation und Reaggregation von früh-embryonalem Gewebe. (Urodela)
EPEL, D. Ph.D., Prof. — Marine Biol. Research Div., Scripps Inst. of Oceanography, Univ. of Calif., San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.
a Biochemistry and physiology of fertilization, especially chemistry of cortical granules and cortical reactions, block to polyspermy, and activation of enzymes. Strongylocentrotus purpuratus and other marine spp. (Invertebrata)
  b Control of enzyme synthesis during development. Strongylocentrotus purpuratus, Dend-
raster excentricus (Echinidea)
a Phylogeny and ontogeny of phosphagen kinases. (Insecta; Pisces; Aves)
ERHART, E. A. M.D., Ph.D., Prof. — Sect. of Neuroanat., Dept. of Anat., Univ. de São Paulo, Caixa Postal 2921, SÃO PAULO, Brazil
a Degeneration and regeneration of peripheral nerve fibres. Gallus domesticus (Aves), Canis familiaris (Carnivora)
ERIKSSON, Miss M. M.D. — Lab. of Teratol., Karolinska Inst., S-104 01 STOCKHOLM 60, Sweden
a Induced fetal damage late in pregnancy of special interest for animal tests of new drugs. Mus musculus (Rodentia)
ESCHENBERG, Miss K. M. Ph.D., Prof. — Dept. of Biol. Sci., Clapp Lab., Mount Holyoke Coll., SOUTH HADLEY, Mass. 01075, U.S.A.
a Cytology and developmental physiology of the ovary (histochemistry, autoradiography). Gerris remigis, Belostoma fimbriatum, Ranaatre lasca (Hemiptera)
ESHEL, Mrs. Sh. M.Sc. — Dept. of Zool., Hebrew Univ. of Jerusalem, JERUSALEM, Israel.
ETHERIDGE, A. L. Ph.D., Prof. — Dept. of Biol., Univ. of Arkansas, Monticello, COL-
LEGE HEIGHTS, Ark. 71655, U.S.A.
a Determination and morphogenesis of the pronephros, nephric duct, and mesonephros. Ambystoma tigrinum (Urodela)
ETKIN, W. Ph.D., Prof. — Dept. of Anat., Albert Einstein Coll. of Med., Yeshiva Univ., 1300 Eastchester Rd. and Morris Park Ave., NEW YORK, Bronx, N.Y. 10461, U.S.A. •

a Development of sensitivity to thyroxine in larval tissues. Rana papiens, Rana catesbeiana (Anura)

b Endocrine control of metamorphosis. Rana papiens, Rana catesbeiana (Anura)

ETOH, H. Dr.Agri. — Div. of Biol., Natl. Inst. of Radiol. Sci., 9-1, 4-chome, CHIBA, 280 Japan

a Long term effects of low doses of ionizing radiation on various embryonic stages. Oryzias latipes (Teleostei)

EURENIUS-PERSON, Mrs. L. Fil.lic. — Inst. of Zool., Univ. of Gothenburg, Fack, S-400 33 GOTHENBURG 33, Sweden

a Fine structure of the development of the median eminence, neural lobe, and adenohypophysis (from 14-day embryo to adult). Mus musculus (Rodentia) (with R. J. JARSKAR)

b Uptake and distribution of monoamines and/or their precursors in the developing median eminence (electron microscopical autoradiography). Mus musculus (Rodentia) (with R. J. JARSKAR)


a Study of skeletal development in regard to inter-litter variation and position in the uterus, utilizing cesarian removals. Canis familiaris (Canivora)

b Veratrum induced cyclopia. Ovis aries (Artiodactyla)

c Serial sections of embryos at spaced ages, available for inspection. Canis familiaris, Felis catus (Canivora), Bos taurus, Ovis aries (Artiodactyla), and other Mammalia


EWEN, AL. B. Ph.D. — Research Station, Research Branch, Canada Agric., Univ. Campus, SASKATOON, Sask., Canada

a Physiology and functional morphology of reproduction with special emphasis on the endocrinology of reproduction in males. Melanoplus sanguinipes (Orthoptera)

b Histology and histochemistry of neurosecretory cells and their cycles of activity. Melanoplus sanguinipes (Orthoptera)

c Insect hormones and analogues: effects on embryogenesis; possible uses as insecticides. Melanoplus sanguinipes (Orthoptera)

EYAL (GILADI), Mrs. H. Ph.D. — Dept. of Zool., Hebrew Univ. of Jerusalem, JERUSALEM, Israel

d Differentiation potencies of the uterine embryo and its ultrastructure. Gallus domesticus (Aves)

EYRIES, Ch. Dr.en Méd. — Dept. of Anat., Univ. Paris V — René Descartes, 45 rue des Saints Pères, 75 PARIS 6e, France

a Sensory neurons and sensory pathways of cochlear nucleus. Homo sapiens (Primates)

FABER, J. Ph.D. — Hubrecht Lab. (Intern. Embryol. Inst.), Uppsalalaan 1, Universiteits- centrum "De Uithof", UTRECHT, Netherlands

FABIAN, B. C. Ph.D. — Zool. Dept., Univ. of the Witwatersrand, Milner Park, JOHAN NESBURG, S.Africa

a Isolation and assay of intercellular messages during development. Bufo regularis (Anura), Gallus domesticus (Aves)

b 5-Bromodeoxyuridine inhibition of differentiation in vivo and in vitro. Same species as a

FACCHINI, Miss L. Dr. — Ist. di Anat. Comp., Univ. di Perugia, Via A. Pascoli, 06100 PERUGIA, Italy

a Descriptive embryology. Dugesia lugubris (Turbellaria)

b Electron microscopy of vitellogenesis. Branchiobdella pentodonta (Oligochaeta)

FACHBACH, G. Dr.phil. — Zool. Inst. der Univ., Universitätspalzat 2, A 8010 GRAZ, Austria

a Vergleichende Entwicklungsgeschichte. Salamandra salamandra subsp. (Urodela)

FAINSTAIN, (HAMERMAN), Mrs. N. M.Sc. — Dept. of Zool., Hebrew Univ. of Jerusalem, JERUSALEM, Israel

a Ultrastructural changes in the egg from ovulation through fertilization and cleavage. Gallus domesticus (Aves)


a Maturation of eggs, atresia of ovarian follicles, and regulation of these processes. Acipenser ruthenus, A. stellatus (Chondrostei), Rutillus rutillus, Pelecus cultratus (Cypriniformes), Acerina cernua, Macropodus opercularis, Hemichromis bimaculatus (Perciformes, Teleostei)

FALIN, L. I. M.D., Prof. — Dept. of Histol. and Embryol., Moscow Stomatol. Inst., Kaljavekskaja 18, MOSCOW, U.S.S.R.


a DNA and nuclear size during postembryonic development of liver, salivary glands, and
prostata. Biomphalaria (=Australorbis) glabrata and other spp. (Pulmonata, Gastropoda)


a Cell death during limb morphogenesis. Gallus domesticus (Aves), Mesocricetus auratus (Rodentia), Homo sapiens (Primates)
b Ultrastructure of the gametes before and during interaction. Nereis limbata (Polychaeta)


a Ontogeny of nerve-muscle interactions. Rattus norvegicus (Rodentia)

FANGHANEL, J. Dr.med. — Anat. Inst., Med. Bereich, Univ. Rostock, Gertrudenstr. 9, 25 ROSTOCK 1, East Germany

a Experimentelle Untersuchungen zur Frage von Organ- und Schädelveränderungen auf Grund statischer Veränderungen in der Postnatalperiode (Amputation der Vorderextremitäten). Rattus norvegicus (Rodentia)
b Untersuchungen des postnatalen Schädel- und Organwachstums nach pränatalem Einfluss peristatischer Faktoren (akustische und optische Reize, diätetische Einflüsse). Rattus norvegicus (Rodentia), Oryctolagus cuniculus (Lagomorpha)


a Metamorphosis. (Urodela)
b History of experimental embryology and cytology.

FANTEU, A. M.Sc. — Central Lab. for Human Embryol., Dept. of Pediat., Univ. of Washington, SEATTLE, Wash. 98105, U.S.A.

a Morphology and development of the placenta. (Mammalia)

FANTONI, A. M.D. — Lab. di Radiobiol. Anim., C.S.N.-Casaccia, C.P. 2400, 00100 ROMA, Italy

FARGEIX, N. Dr.esis Sci. — Lab. de Biol. Anim., 1 Av. Vercingétorix, 63 CLERMONT-FERRAND, France

FARINELLA (FERRUZZA), Mrs. N. D.Sc. — Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO, Italy

FASANELLO DE BUSTOS, Mrs. L. M.D. — Sect. of Exper. Neurol., Inst. of Neurol., Hosp. de Clinicas, Piso 2, MONTEVIDEO, Uruguay

a Development of sleep-wakefulness cycle in the newborn. Cavia porcellus (Rodentia)

FAUCOUNAI, Mrs. N. Lic.esis Sci. — Lab. de Biol. et d'Histol., Univ. of Bordeaux II, Place de la Victoire, 33 BORDEAUX, France

a Le rôle teratogène des hormones thyroïdiennes. (Aves)

FAULHABER, Miss I. E. W. Ph.D. — Inst. für Biochem. und Molek. Biol., Fachbereich I (Vorklinik), Freie Univ. Berlin, Arnimallee 22, 1 BERLIN 33, W.Germany

a Isolation and biochemical characterization of the primary induction factor in the gastrula. Xenopus laevis (Anura)
b Protein and nucleic acid metabolism during the process of differentiation. Xenopus laevis (Anura), Triturus alpestris, Ambystoma mexicanum (Urodela)

FAULKNER, Ch. S. M.D. — Dept. of Pathol., Dartmouth Med. School, HANOVER, N.H. 03755, U.S.A.

a Electron microscopy of lung development. Didelphys americanus (Marsupialia), Felis domesticus (Carnivora)

FAURE-FREM IET, E. Dr., Prof.hon. — Lab. d'Embryol. Expér. du Coll. de France, Place M. Berthelot, 75 PARIS Ve, France

FAUTREZ, J. C. M.D., Prof. — Lab. of Anat., Univ. of Gent, Ledeganckstr. 35, 9000 GENT, Belgium

a Mechanism of maturation and segmentation divisions. Artemia salina (Anostraca, Crustacea)

FAUTREZ (FIRLEFYN), Mrs. N. J. — Lab. of Anat., Univ. of Gent, Ledeganckstraat 35, 9000 GENT, Belgium

a Mechanism of maturation and segmentation divisions. Artemia salina (Anostraca, Crustacea)

FEDECKA (BRUNER), Mrs. B. Dr.esis Sci. — Inst. d'Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France

a Enzyme synthesis during development. Strongylcentrotus purpuratus, Allocentrotus fragilis (Echinidea), Gallus gallus (Aves)

FEDINEC, A. A. Ph.D., Prof. — Dept. of Anat., Med. Units, Univ. of Tennessee, 800 Madison Ave., MEMPHIS, Tenn. 38103, U.S.A.

a The effect of bacterial toxins and pathogenic bacteria on the fetus; relation between infection routes and barrier properties of placenta and fetal membranes. Rattus norvegicus (Rodentia)

FEDOROFF, S. Ph.D., Prof. — Dept. of Anat., Coll. of Med., Univ. of Saskatchewan, SASKATOON, Sask., Canada

a Development of cell surface antigens and the surveillance mechanism. Mus musculus (Rodentia)

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FEIERTAG (KOPPEN), Mrs. C. C. M. Drs. — Genet. Inst., Univ. van Groningen, Biol. Centrum, Vleugel A, Kerklaan 30, HAREN (Gr.). Netherlands

a Oogenesis and fertilization; parthenogenesis. Tetanychus urticae (Acarii)


a Origin of polarity in the eye and morphological development of the optic tectum. Xenopus laevis (Anura)
b Formation of specific connections between retina and optic tectum. Same species as a

FELDMAN, M. Ph.D. — Dept. of Cell Biol., Weizman Inst. of Sci., REHOVOTH, Israel

a The cochlear nucleus and superior olivine of newborn and young animals: 1. Nerve cell development, especially dendritic morphology (light microscopy); 2. Development of synapses (electron microscopy). Rattus norvegicus (Rodentia)

FELIX, J.-M. D.E.S. — Lab. de Physiol. Anim., Fac. des Sci., B.P. 347, 51 REIMS, France

a Endocrine function of the foetal pancreas; insulin blood levels in the foetus and in the mother. Rattus norvegicus (Rodentia) (with R. L. JACQUOT, B. C. J. SUTTER and Mrs. M. T. SUTTER)

FELL, Dame Honor B. Dr., Prof. — Strangeways Res. Lab., Wort’s Causeway, CAMBRIDGE, England

FELTS, W. Ph.D., Prof. — Dept. of Anat. Sci., Univ. of Oklahoma Med. Center, 801 NE 13th St., OKLAHOMA-City, Okla. 73104, U.S.A.
a Biomechanics of bone including developmental changes. (Soricidae, Insectivora), Mus musculus, Rattus spec. (Rodentia), (Cetacea), Homo sapiens (Primates)
b Gravity effects on bone development. Mus musculus (Rodentia)

FERM, V. H. M.D., Ph.D., Prof. — Dept. of Anat., Dartmouth Med. School, HANOVER, N.H. 03755, U.S.A.

a Teratogenic effects of heavy metals. Mesocricetus auratus (Rodentia)
b Experimentally induced twinning. Mesocricetus auratus (Rodentia)

FERNANDEZ, Miss S. N. Pharm.M. — Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S.M.de TUCUMAN, Argentina

a Intermediate metabolism during early development. Bufo arenarum (Anura)

b Mitochondria during embryogenesis. Same species as a

FERRIER, V. Lic.ès Sci. — Lab. de Biol. Gén., Univ. Paul-Sabatier, 118 Route de Narbonne, 31 TOULOUSE 04, France

a Hybridisation intergénérique. (Urodela)
b Gynogénèse. Pleurodeles waltl (Urodela)

c FERRIS, W. R. Dr. — Dept. of Biol. Sci., Univ. of Arizona, TUCSON, Ariz. 85721, U.S.A.

FICQ, Mrs. A. A. D.Sc., Prof. — Lab. de Cytol. et d’Embryol. Moléc., Univ. libre de Bruxelles, 67 rue des Chevaux, 1640 RHODE-ST-GENESE, Belgium

a Etude autoradiographique du métabolisme au cours de l’oogénèse. Asterias spec. (Asteroidea), Rana spec. (Anura)
b Observations autoradiographiques sur l’oogénèse et la morphogénèse. Pleurodeles spec., Triturus spec. (Urodela), Rana fusca (Anura)
c Studies on metabolism during maturation. Asterias rubens, Arbacia lixula, Paracentrotus lividus (Echinodermata), Pleurodeles waltl (Urodela)
d Effects of actinomycin D and histones on early differentiation of oocytes. Xenopus laevis (Anura)
e DNA synthesis during early oogenesis. Xenopus laevis (Anura)
f Template activities of chromat in meliotic cells. Xenopus laevis (Anura)
g Protein metabolism in early oogenesis. Xenopus laevis (Anura), Ambystoma mexicanum (Urodela)

FILOGAMO, G. M.D., Prof. — Dept. of Human Anat., Univ. of Torino, Corso M.D’Azeglio 52, 10126 TORINO, Italy

a Trophic influences of glossopharyngeal nerve on the development of foliate papillae. Oryzotolagus cuniculus (Lagomorpha)
b Neuronal cell membrane differentiation at molecular level. Mus musculus (Rodentia)

FILOLI, S. Dr.Biol.Sci. — Ist. di Anat. Comp. "Battista Grassi", Univ. di Roma, Via A. Borelli 50, 00161 ROMA, Italy

a Influence of metamorphosis on regeneration power of the central nervous system; effects of thyroxin, thiouracil, and hypophysectomy. Xenopus laevis (Anura)
b Stimulation of central nervous system regeneration power by transplantation of neuroblasts into the ventricular cavities. (Amphibia)

FILOSOF, M. F. Ph.D., Prof. — Dept. of Zool., Scarborough Coll., Univ. of Toronto, WEST HILL, Ont., Canada

FINGER, I. Ph.D., Prof. — Dept. of Biol., Haverford Coll., HAVERFORD, Pa. 19041, U.S.A.

FINNEGAN, C. V. Ph.D., Prof. — Dept. of Zool., Univ. of British Columbia, VANCOUVER 8, B.C., Canada
a Analysis of postgastrula axial mesoderm differentiation in vitro. Taricha torosa, Ambystoma gracile (Urodela). Gallus domesticus (Aves)
b Cytochemical and electron microscopic examination of myoblast, endo- and ectomesenchymal differentiation. Taricha torosa, Ambystoma gracile (Urodela)
c Molecular and cellular aspects of arm formation in larvae. Strongylocentrotus droebachiensis, S. purpuratus, S. franciscanus (Echinoidae) (with D. H. LARRIVEE)
d In vitro differentiation of 6-day lens epithelium: biochemical (protein synthesis) and ultrastructural analysis. Gallus domesticus (Aves) (with B. G. McLEAN)
e The effect of transplanted epidermis from the hind limb field on regeneration of the forelimb: structure of muscle, cartilage and bone. Triturus viridescens (Urodela) (with E. F. M. GARROD)
FIORONI, P. P.D., Dr.phil. — Zool. Anstalt der Univ., Rheinsprung 9, 4051 BASEL, Switzerland
a Development of integument (chromatophores, shell), nervous system, coelom and yolk sac (including electron microscopy). Loligo spec., Alloteuthis spec., Sepiola spec., Sepieta spec. (Decapoda), Eledone spec., Octopus spec. (Octopoda, Cephalopoda), and others
b Morphology of embryonic nutrition (yolk, albumine, food eggs) and transitory larval organs. (Gastropoda; Malacostraca, Crustacea)
c Histological normal tables of development. (Cephalopoda; Gastropoda; Crustacea)
FISCHBERG, M. Dr.phil., Prof. — Station de Zool. Expér., Univ. de Genève, Route de Malagnou 154, CHÈNE-BOUGERIES, Genève, Switzerland
FISCHER, A. Dr.reer.nat. — Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, W.Germany
a Maternal effect on the eye colour in juvenile or/or-mutants: oocyte genetic activity with respect to or-gene product. Platynereis dumerilii (Polychaeta)
FISCHMAN, D. A. M.D., Prof. — Dept. of Biol., Univ. of Chicago, 1101 East 57th St., CHICAGO, Ill. 60637, U.S.A.
a Intercellular junctions in cardiac morphogenesis. Gallus domesticus (Aves)
b Ultrastructure of skeletal muscle development. Same species as a
c Myofibrilar assembly in embryonic heart muscle. Same species as a
FITCH, F. W. Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, CHICAGO, Ill. 60637, U.S.A.
FITZGERALD, L. R. Ph.D., Prof. — Dept. of Anat., Med. Units, Univ. of Tennessee, 800 Madison Ave., MEMPHIS, Tenn. 38103, U.S.A.
a Effects of environmental factors and antibiotics on development of teeth, and control mechanisms of tooth formation. Mus musculus (Rodentia)
b Development of incisor teeth and significance of the various types of dentin seen in early stages. Mus musculus (Rodentia)
FLAMM, H. M.D., Prof. — Hygiene Inst., Med. Fac., Univ. of Wien, Kinderspitalgasse 15, Postfach 23, A-1095, WIEN, Austria
a Infections of the blastocyst by viruses: fate of the blastocyst and embryo. duration of presence of the virus in the blastocyst. Orgetolagus curiculus (Lagomorpha)
b Infections of fetus and placenta. Homo sapiens (Primates)
FLEISCHHAUER, K. Dr.med., Prof. — Anat. Inst. der Univ. Bonn, Abt. für Neuroanat., Nussallee 10, 53 BONN, W.Germany
Flickinger, C. J. M.D., Prof. — Dept. of Anat., Med. School, Univ. of Virginia, CHARLOTTESVILLE, Va. 22901, U.S.A.
a Postnatal development of the prostate (electron microscopy). Rattus rattus (Rodentia)
b Development and adult structure of the bulbulo-urethral glands (light and electron microscopy). Same species as a
a Behaviour and differentiation of normal and mutant limb mesenchyme cells in vitro. Gallus gallus (Aves)
FLYNN, T. THOMSON D.Sc., Prof. — Address unknown
FOOTE, Mrs. F. MARTINDALE Ph.D. — Dept. of Physiol., Southern Illinois Univ., CARBONDALE, Ill. 62901, U.S.A.
a Growth and maintenance of gonads on synthetic media, and on standard media composed of chick embryo extract and agar. Xenopus laevis (Anura)
b Growth of avian thymus in vitro. Gallus domesticus (Aves)
c Effects of lithium and mercury compounds on embryonic development in vitro and in vivo. Gallus domesticus (Aves)
FORD, P. Ph.D., Prof. — Dept. of Zool., Univ. of British Columbia, VANCOUVER 8, B.C., Canada
a Developmental histochemistry. Raja binoculata (Selachii)
b Microspectro-photometry of enzyme concentrations in development. Same species as a
FORD, P. J. D.Phil. — Dept. of Anim. Genet., Univ. of Edinburgh, King’s Buildings, EDINBURGH EH9 3JN, Scotland, U.K.
a The synthesis of proteins by ovary in organ culture. Xenopus laevis (Anura)

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b The structure and function of ribosomes during cell differentiation. *Xenopus laevis* (Anura)

c Control of nucleic acid synthesis in oogenesis, especially 5s RNA. *Xenopus laevis* (Anura)

d Synthesis and assembly of ribosomes during oogenesis, especially 5s RNA and associated proteins. *Xenopus laevis* (Anura)

FORET, J. E.  Ph.D. — Dept. of Zool., Univ. of New Hampshire, DURHAM, N.H. 03824, U.S.A.
a Biochemical regulation of larval regeneration. Ambystoma spec., Notophthalmus viridescens (Urodela)

b In vitro cultivation of larval and adult tissues and regeneration blastema. Ambystoma spec. (Urodela)

c Migration of cardiac primordia. Gallus domesticus (Aves)

FORMAN, M.  Ph.D. — Dept. of Biol. Sci., Purdue Univ., LAFAYETTE, Ind. 47907, U.S.A.
a Synthesis of regulatory macromolecules during embryo development. Fucus furcatus (Phaeophyta)

b Control and synthesis of cell walls. Same species as a

FORREST, H. S.  Ph.D., D.Sc., Prof. — Dept. of Zool., Univ. of Texas, AUSTIN, Tex. 78712, U.S.A.
a RNA synthesis in very early development of eggs and at later stages; examination of the products of RNA polymerase activity by competition-hybridization techniques. Oncopeltus fasciatus (Hemiptera)

b The role of dAT (deoxyadenine-thymidine) in embryogenesis. Drosophila melanogaster (Diptera)

c Effects of long wave length UV on development. Same species as b

FORSBERG, J.-G.  Prof. — Inst. of Anat., Univ. of Bergen, Arstadvollen, 5000 BERGEN, Norway
a Regulative mechanisms behind epithelial differentiations in the genital region. Mus musculus, Rattus spec. (Rodentia)

b Antigen content of the Müllerian epithelium. Mus musculus (Rodentia)

c Influence of antiandrogenic substances on the differentiation of the male genital tract. Rattus spec. (Rodentia)

d Heterologous transplantation. (Mammalia)

FORTAK, W.  M.D. — Dept. of Histol. and Embryol., Acad. of Med., ul. Narutowicza 60, ŁÓDŹ, Poland
a Comparative morphochemistry of the development of the adrenal gland. Xenopus laevis (Anura), Rattus norvegicus (Rodentia)

b The distribution and activity of some hydrolytic enzymes in lysosomes and of oxido-reducing enzymes in mitochondria, in various tissues and organs during metamorphosis and embryogenesis. Xenopus laevis (Anura), Gallus domesticus (Aves), Rattus norvegicus, Cavia porcellus (Rodentia)

c Histology and histochemistry of adrenal gland regeneration. Rattus norvegicus (Rodentia)

FORTI, G.  Prof. — Ist. Botanico, Univ. di Bari, BARI, Italy

FOSKET (BAKER), Mrs. E.  Ph.D. — Developm. Biol. Lab. and Center for Pathobiol., Univ. of California, IRVINE, Calif. 92664, U.S.A.
a Cytology: endomitosis, ultrastructure. Drosophila melanogaster (Diptera)

FOSSE, G.  Dr.odont., Prof. — Anat. Inst., Univ. of Bergen, Arstadvollen, 5000 BERGEN, Norway
a Reconstructions of tooth-germs in pouch-youngs. Isoodon obesulus, I. macrourus, Perameles gunnii (Marsupialia)

b Odontogenesis. Gadus callarias, Esox lucius (Teleostei)

c Epithelial-mesenchymal interactions in odontogenesis. Rattus norvegicus (Rodentia)

FOURCHE, J.  Dr.es Sci. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France
a Le métabolisme respiratoire au cours du développement. Drosophila melanogaster (Diptera), Bombyx mori (Lepidoptera)

FOURNIER, B.  Dr.Biol.anim. — Lab. de Zool. Expér., Univ. de Bordeaux I, Av. des Facultés, 33 TALENCE, France
a Recherches descriptives et expérimentales sur la morphogenèse embryonnaire des appendices. Carausius spec. (Phasmida)

FOWLER, J. A.  Ph.D. — Dept. of Biol., State Univ. of New York at Stony Brook, STONY BROOK, N.Y. 11790, U.S.A.
a Development of hybrids. Rana pipiens (Anura)

b Developmental (genetic, environmental). Oryzias latipes (Teleostei)

a Developmental enzymology. Drosophila melanogaster (Diptera)

a Growth and degeneration of the pronephric system (electron microscopy). (Anura)

b Grafting of pronephros and mesonephros in larvae under hypo- and hyperthyroid conditions. Rana temporaria (Anura)
c Haploid and diploid tissues (electron microscopy). *Xenopus laevis* (Anura) (with L. HAMILTON, Middlesex Hosp.)
d Tail degeneration (electron microscopy). Same species as b
e Ultrastructure of larval tissues. Same species as c
FRAGATA, M. Ph.D. — Dept. of Plant Sci., Fac. of Agric., Univ. of Manitoba, WINNIPEG 19, Man., Canada
a Fine structure of normal and irradiated male and female germ cells. (Rodentia; Primates)
b Structure and function of chromosomes in oocytes in relation to radiosensitivity. (Mammalia)
a Study of the overall character of the sequence of gene controlled processes during cell differentiation, using the enzyme complement of developmental mutants. (Acrasiales)
a Teratogenic effects of vinblastine (VLB, Velban) on embryogenesis. *Dugesia tigrina* (Turbellaria), *Blatta orientalis*, *Periplaneta* spec. (Blattariae), *Drosophila melanogaster* (Diptera), *Oryzias latipes* (Teleostei)
b New techniques in reproduction from theoretical and social viewpoint: artificial insemination, in vitro gestation, prenatal monitoring, in vitro fertilization, etc. Homo sapiens (Primates)
FRANÇOIS, Y. Dr.ès Sci., Prof. — Lab. d’Anat. Comp., Univ. Paris VII, 2 Place Jussieu, 75 PARIS Ve, France
a Development of paired fins. (Teleostei)
b Development of vertebrae. *Polypterus* spec. (Dipnoi), (Teleostei)
c Growth of embryo. (Teleostei)
d Evolution of bone structures. (Osteichthyes)
FRANK, G. H. D.Sc. — Dept. of Zool., Univ. of Durban-Westville, Private Bag 4001, DURBAN, S.Africa
a Development of the chondrocranium and osteocranium, especially morphology of the sound conducting apparatus. (Amphibia), *Crocodilus niloticus* (Crocodilia and other Reptilia)
FRANKEL, J. Ph.D., Prof. — Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA City, Iowa 52240, U.S.A.
a Morphogenesis. *Tetrahymena* spec. (Ciliata)
b Developmental genetics: analysis of the cortical pattern. *Tetrahymena pyriformis*, *Bipalium minuta* (Ciliata)
a Electron microscopy of gametes and fertilization. (Annelida; Echinodermata; Mammalia)
c Fine structure of the morphogenesis of sperm organelles which play crucial roles in fertilization. *Cricetus auratus* (Rodentia), *Macaca mulatta*, *Pan troglodytes* (Primates)
FRANZEN, A. S. Fil.Dr. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden
a Comparative study of the spermatozoon and spermatogenesis. (Invertebrata)
b Larval development. (Brachiopoda; Entoprocta)
FRASCHINI, Miss A. Ph.D., Prof. — Dept. of Histol. and Embryol., Univ. of Pavia, Piazza Botta 10, 27100 PAVIA, Italy
a Histochemical analysis of catecholamines and 5-HT (5-hydroxytryptamine) during the development of central nervous system. *Rattus norvegicus* (Rodentia)
b Histophotometric quantitative determination of nuclear DNA (Feulgen reaction) during the development of central nervous system. Same species as a
FRASER, F. C. Ph.D., M.D., F.R.S.C. Prof. — Dept. of Biol., McGill Univ., MONTREAL 110, Que., Canada
a Maternal and environmental factors (e.g. diet) influencing the frequency of cleft lip. *Mus musculus* (Rodentia)
b Effect of oligohydramnios on fetal lung development. *Mus musculus* (Rodentia)
a Kinetics of synthesis of globin and incorporation of iron into hemoglobin in blood islands of blastodiscs between the primitive streak and 12-somite stages. *Gallus gallus* (Aves)
FRASER, R. C. Ph.D., Prof. — Dept. of Zool. and Entomol., Univ. of Tennessee, KNOXVILLE, Tenn. 37916, U.S.A.
a Biosynthesis of hemoglobins in the embryo and characteristics of embryonic erythroid cells. *Gallus domesticus* (Aves)
b Endocrine regulation of carbohydrate metabolism, esp. changing patterns of control during metamorphosis. *Rana pipiens* (Anura), *Ambystoma mexicanum*, *A. tigrinum* (Urodela)

FUJII, R. Ph.D., Prof. — Dept. of Biol., Sapporo Med. Coll., SAPPORO, Hokkaido, 060 Japan

(no embryological work in progress)

FUJII, T. Ph.D., Prof. (Emer.) — Zool. Inst., Univ. of Tokyo, Hongo 7-3, Bunkyo-ku, TOKYO, 113 Japan

a The mechanism of chemical carcinogenesis. *Rattus norvegicus* (Rodentia)

FUJISAWA, H. M.Sc. — Lab. of Cell Sci., Inst. of Biophys. and Molec. Biol., Fac. of Sci., Univ. of Kyoto, Sakyo-ku, KYOTO, Japan

a Analysis of the factors affecting cell aggregation and cell contact. *Gallus gallus* (Aves) (with T. S. OKADA and K. TAKAHASHI)

b Mechanisms of tissue reconstitution from dissociated retinal cells. *Gallus gallus* (Aves)

FUKE, M. D.Sc. — Biol. Inst., Fac. of Sci., Univ. of Kanazawa, Marunouchi-1, KANAZAWA, Japan

a Reaggregation of dissociated cells. *Calyptospongia elongata* (Porifera)

b Cytological properties of polar lobe. *Ostrea gigas* (Lamellibranchia)

FUKUDA, S. D.Sc. — Prof. — Biol. Inst. of Sci., Nagoya Univ., Chikusa-ku, NAGOYA, Japan

FUKUMITSU, F. — Natl. Inst. of Anim. Industry, CHIBA-shi, 280 Japan

a Transfer of fertilized eggs by non-surgical techniques. *Boa taurus*, *Capra hircus* (Artiodactyla)

FULLER, M. S. Ph.D., Prof. — Dept. of Botany, Univ. of Georgia, ATHENS, Ga. 30601, U.S.A.

a Development of motile cells in aquatic species. *Allomyces cystogenes* (Blastocladiaceae, Phycomycetes)

b Mitosis. (Fungi)

FULLILOVE, Miss S. L. Ph.D. — Dept. of Zool., Univ. of Texas, AUSTIN, Tex. 78712, U.S.A.

a Developmental aspects of embryonic lethals. *Drosophila* spec. (Diptera)

b Patterning of morphogenetic information during oogenesis (ovary transplantation, isotopic labeling of developing oocytes). Same species as a

c 'in vitro interactions between inducing and responding tissues in heart development. *Taricha torosa* (Urodela)

FULTON, C.M. Ph.D. — Dept. of Biol., Brandeis Univ., WALTHAM, Mass. 02154, U.S.A.

a Cell differentiation during ameba-to-flagellate transformation, with emphasis on the initiation of transformation and the morphogenesis of new organelles, especially flagella and basal bodies. *Naegleria gruberi* (Protozoa)

FURUKAWA, M. D.Sc. — Lab. of Embryol., Fac. of Sci., Osaka City Univ., 459 Sugimotocho, Sumiyoshi-ku, OSAKA, Japan

a Immunological analysis of the structural molecules of the erythrocyte membrane. *Mus musculus* (Rodentia)

b Erythroid differentiation of Friend virus-induced tumor cell. Same species as a

FURUYA, M. Prof. — 7-3-1 Hongo, Bunkyo-ku, TOKYO, Japan

GABAJEVA, Mrs. N.S. Cand.biol.sci. — Dept. of Embryol., Leningrad Univ., Mendeleevsky St. 5, LENINGRAD B-164, U.S.S.R.

GABELLA, G. M.D. — Dept. of Anat., Univ. of Turin, Corso M.d’Azeglio 52, 10126 TORINO, Italy

GABIE (GUBBAY), Mrs. V. Ph.D. — Dept. of Zool., Univ. of the Witwatersrand, Milner Park, JOHANNESBURG, S.Africa

a Neural crest cells in vitro: 1. effect of thyroxine on differentiation of pigment cells; 2. autoradiography of the histones and RNA synthesis. *Xenopus laevis* (Anura) (with A. ANDREW, Dept. of Anat.)

GABRIEL, M. L. Ph.D., Prof. — Biol. Dept., Brooklyn Coll., NEW YORK, Brooklyn, N.Y. 11210, U.S.A.

a Development of vertebrae: meristic variation. (Teleostei)

GABRIEL-ROBEZ (KREMER), Mrs. O. Dr.en Méd. — Inst. d’Embryol., Fac. de Méd., Rue Kirschleger, 67 STRASBOURG, France

a Chimeritétaragénèse. (Aves; Mammalia)


a Silk gland development and differentiation, especially silk fibroin synthesis, fibroin message synthesis, and isolation of the fibroin gene. *Bombyx mori* (Lepidoptera) (with Y. SUZUKI and D. D. BROWN)


a Morphology, cytochemistry, and autoradiography of oogenesis, especially nuclear apparatus behavior during oocyte growth. (Teleostei), (Fringillidae, Passeriformes, Aves)
GAillard, J. A. M.D. — Dept. of Pathol., Central Lab., Centre Hospitalier Region., rue Saint-Louis, 27 EVREUX, France

a. Embryonic tumors; germ cell tumors; dysembryomas of ovary and testis; blastemal tumors. *Homo sapiens* (Primates)
b. Comparative developmental morphology of embroyoids and first stages of normal ova. *Homo sapiens* (Primates)

Gallard, P. J. M.D., Prof. — Lab. for Cell Biol. and Histol., State Univ., Rijnsburgerweg 10, LEIDEN, Netherlands

a. Hormones and bone development (organ culture, enzyme chemistry, isotope techniques). *Mus musculus* (Rodentia)
b. Imidazol and its derivates and bone development (organ culture). Same species as a

Gaino, Miss E. Dr.Biol.Sci. — Ist. di Zool., Univ. di Genova, Via Balbi 5, 16126 GENOVA, Italy

a. Sexual dimorphism in the embryos of a parthenogenetic form. *Penilia avirostris* (Cladocera, Crustacea)


a. Functional development of small intestine. *Rattus norvegicus* (Rodentia)

Gall, J. G. Ph.D., Prof. — Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, Conn. 06520, U.S.A.

b. Development of small intestine. *Rattus norvegicus* (Rodentia)
c. Meaning of the period of latency inserted between the beginning of the induction process and the beginning of the neurulation. Same species as a

d. Subcellular changes during early morphogenesis (electron microscopy). (Aves) (with G. NICOLET)

Gallien, L. Dr.Biol.Sc. — Ist. di Zool. e Anat. Comp. dell’Univ., Via A. Volta 4, 56100 PISA, Italy

a. Lambrush chromosomes. (Anura)

Gallea, J. D.Sc. — Lab. d’Embryol. Expér., Inst. d’Histol., Univ. de Genève, 20 rue de l’École de Médecine, 1211 GENEVE 4, Switzerland

b. Comparison between the inductive capacities of the presumptive endoblast and mesoblast cells located in the primitive streak. Same species as a

c. Meaning of the period of latency inserted between the induction time and the beginning of neuronulization. Same species as a

d. Subcellular changes during early morphogenesis (electron microscopy). (Aves) (with G. NICOLET)

Gallien, L. Dr.èes Sci., Prof. — Lab. d’Embryol., Univ. de Paris VI, 9 quai St.Bernard, 75 PARIS Ve, France

Galston, A. W. Ph.D., Prof. — Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, Conn. 06520, U.S.A.

a. Analysis of molecular bases for the developmental roles of hormones such as indole-3-acetic acid and of light (absorbed by phytochrome). *Pisum sativum* (Papilionaceae)
b. Plant protoplasts: preparation by the use of cell-wall digesting enzymes; culture; cell wall regeneration: attempts to achieve fusion. *Pisum sativum* (Papilionaceae); *Avena sativa* (Gramineae); *Nicotiana tabacum* (Solanaceae)

Gallin, E. Ph.D. — Dept. of Plant Genet., The Weizmann Inst. of Sci., REHOVOTH, Israel

a. Determination of sex expression: genetic and hormonal factors. *Cucumis* spec. (Cucurbitaceae)
b. Photo-induced changes in differentiation: structural, biochemical & genetic aspects. *Trichoderma* spec. (Fungi imperfecti)


a. Development of peripheral nervous tissue in the foetus. *Homo sapiens* (Primates)
b. Development of spinal cord in the foetus (electron microscopy). *Homo sapiens* (Primates)

c. GARBER (BILSKY), Mrs. B. B. Ph.D. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, CHICAGO, III. 60637, U.S.A.

Garcia Austt, E. M.D., Prof. — Sect. of Exper. Neurol., Inst. of Neurol., Hosp. de Clinicas, Piso 2, MONTEVIDEO, Uruguay

a. Influence of uterine contractions on fetal EEG. *Homo sapiens* (Primates)


a. Developmental genetic analysis of the wing imaginal disc; development in situ and in culture. *Drosophila melanogaster* (Diptera)
b. Nature of the specificity of cell recognition in cell aggregates of imaginal discs; cell affinities of normal versus mutant genotypes. *Drosophila melanogaster* (Diptera)

c. Gardener, G. Dr. — Inst. of Zoöl., Univ. of Bologna, Via S. Giacomo 9, 40126 BOLOGNA, Italy

b. Hormonic regulation of ovarian and Bidder’s organ oogenesis. Same species as a

Gardner, R. L. Ph.D. — Marshall Lab., Dept. of Physiol., Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3EG, England

a. Differentiation, determination, and interaction between trophoblast and inner cell mass in the blastocyst (microsurgery, microinjection). *Mus musculus* (Rodentia)
b Interaction of normal and mutant genotypes in development of chimaeras produced by microsurgery and microinjection. *Mus musculus* (Rodentia)

c Investigation of X-chromosome markers by transfer of single cells from early female embryos heterozygous for X-linked genes to host blastocysts of a distinct genotype. *Mus musculus* (Rodentia)

GARGOUIL, Y. M. Dr.és Sci., Prof. — Lab. de Physiol. Anim., Fac. des Sci., Univ. de Poitiers, 40 av. du Recteur Pineau, 86 POITIERS, France

a Electrophysiology of embryonic heart and muscles: study of the development of membrane properties. *Ambystoma tigrinum* (Urodela), *Cavia porcellus*, *Rattus norvegicus* (Rodentia)

b Histology and electron microscopy of the embryonic heart. *Rattus norvegicus* (Rodentia)

GARROD, D. R. Ph.D. — Dept. of Biochem., Univ. of Leicester, LEICESTER LE1 7RH, England

a Morphogenetic movement and cell adhesion. *Dictyostelium discoideum* (Acrales)

GARROD, Mrs. E. M. F. — Dept. of Zool., University of British Columbia, VANCOUVER 8, B.C., Canada

a The effect of transplanted epidermis from the hind limb field on regeneration of the forelimb: structure of muscle, cartilage, and bone. *Triturus viridescens* (Urodela) (with C. V. FINNEGAN)

GARWEG, G. Dr.med. — Anat. Inst. der Univ., Abt. für Neuroanat., Nussallee 10, 53 BONN, W.Germany


a X-ray damages on embryonic intestine at biochemical level. *Gallus domesticus* (Aves)

b Incorporation of tritiated thymidine in gonads in organ culture of normal animals and b after treatment with x-rays or steroid hormones. *Gallus domesticus*, *Anas platyrhynchos* (Aves)

GASSER, F. Dr.Biol. — Lab. de Biol. Génér., Univ. Paul-Sabatier, 118 Route de Narbonne, 31 TOLOUSE 04, France

a Genetical aspects of protein differentiation in embryonic stages. *Pleurodeles waltl* (Urodela) (with J. C. BEETSCHEN)


a Tongue development. *Mus musculus*, *Rattus spec.* (Rodentia), *Homo sapiens* (Primates)

b Atlas of developmental stages. *Homo sapiens* (Primates)

GASTON, J. D. Ph.D., Prof. — Dept. of Anat., Developm. Biol. Center, Western Reserve Univ. School of Med., 2119 Abington Rd., CLEVELAND, Ohio 44106, U.S.A.

a Nucleic acids and protein synthesis during development (ribosomes). *Rana pipiens*, *Xenopus laevis* (Anura)

GATEFF (ZOLLIKOFER), Mrs. E. A. Ph.D. — Developm. Biol. Lab. and Center for Pathobiol., Univ. of California, IRVINE, Calif. 92664, U.S.A.

a Normal and abnormal (neoplastic) development of the nervous system and the imaginal discs (tissue culture). *Drosophila melanogaster* (Diptera)

b Analysis of genetical controlled neoplasms. Same species as a


a Physiological and genetical mechanisms regulating egg and embryo development. *Mus musculus* (Rodentia)

GAUTHIER, Miss G. F. Dr. — Lab. of Cell Biol., Dept. of Biol. Sci., Wellesley Coll., WELLESLEY, Mass. 02181, U.S.A.

GAY, Miss H. Ph.D., Prof. — Dept. of Zool., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.

a Molecular structure of chromosomes during genetic activity, especially nucleic acids and proteins of heterochromatin and euchromatin (electron microscopy, cytochemistry, autoradiography, biochemistry). *Drosophila melanogaster* (Diptera)

GAYER, J. Dr. — Dept. of Biol., Charles Univ., Šimkova 870, HRADEC KRALOVÉ, Czechoslovakia


a Functional aspects of regeneration of the optic nerve. *Xenopus laevis*, *Rana temporaria* (Anura)

b Cellular changes in tectum and eye after optic nerve section. *Triturus cristatus* (Urodela)

c Functional results of tectal grafting. *Carassius auratus* (Teleostei)

d Development of visual connections in embryos. *Xenopus laevis* (Anura)

GECHBARDT, D. O. E. Ph.D. — Dept. of Obstet. and Gynecol., Academic Hospital, LEIDEN, Netherlands

a Neonatal respiration and metabolism. *Ovis aries* (Artiodactyla), *Homo sapiens* (Primates)

b Amniotic fluid analysis. *Homo sapiens* (Primates)

GEHRING, W. J. Ph.D., Prof. — Dept. of Anat., Yale Univ., NEW HAVEN, Conn. 06510, U.S.A.
GIANNINI (FORLI), Mrs. E. Dr.Biol.Sci. — Ist. di Zool. e Anat. Comp. dell’Univ., Via A. Volta 4, 56100 PISA, Italy

a Development and cytology. *(Tricladiidae, Turbellaria)*


a Influence of altering the uterine environment by X-irradiation during the preimplantation phase of pregnancy on implantation and fetal development. *Rattus norvegicus* (Rodentia)


b Histochemistry and electron microscopy of differentiating experimentally induced renal carcinomas. *Mesocricetus auratus* (Rodentia)

GIBSON, I. Ph.D. — School of Biol. Sci., Univ. of East Anglia, University Plain, NORWICH, NOR 88C, England

a Nuclear-cytoplasmic interaction in single cells. *Paramaecium aurelia* (Ciliata)
b Function and origin of B-chromosome DNA during development. *Myrmecotettix maculatus* (Acrididae, Orthoptera)

GIDHOLM, L. Fil.Dr. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden

a Larval development. *(Syllidae, Polychaeta)*

GILH, Miss M. Dr.phil. — Brain Anat. Inst., Untere Zollgasse 71, (Waldau), 3072 OSTERMUNDIGEN-BE, Switzerland

a Ontogenesis of the brain. *(Cetacea)*

GILANI, S. H. Ph.D. — Dept. of Anat., Coll. of Med. and Dent., 100 Bergen St., NEWARK, N.J. 07103, U.S.A.

a A Mechanism of heart morphogenesis (morphology and cytology), and teratogenic action of nicotine, lead, and other substances. *Gallus domesticus* (Aves)

GILBERT, P. W. Ph.D., Prof. — Div. of Biol. Sci., Cornell Univ., ITHACA, N.Y. 14850, U.S.A.

GILBERTSON, D. E. Ph.D. — Dept. of Zool., Coll. of Biol. Sci., Univ. of Minnesota, MINNEAPOLIS, Minn. 55455, U.S.A.

a Metabolism of nucleic acids and proteins in larvae. *(Schistosoma mansoni* (Trematoda)


GILLET (PERDRIX), Mrs. S. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France


a Cytological, electron microscopic, and experimental investigations of the fertilization process. *Spisula sachalinensis*, *Mactra sulcataria* (Lamellibranchia), *Ambystoma mexicanum* (Urodea)


a Determination of imaginal disc cells in normal and mutant stocks. *Drosophila melanogaster* (Diptera)

GIORG, F. Dr.Biol.Sci. — Ist. di Zool. e Anat. Comp. dell’Univ., Via A. Volta 4, 56100 PISA, Italy

a Structure and function of lampbrush chromosomes. *(Anura)*
b Molecular hybridization in embryo, larva, and adult. *(Amphibia)*


a Sviluppo dei meccanismi eritropoietici durante la vita neonatale. *Oryctolagus cuniculus* (Lagomorpha)
b Sviluppo del sistema neurosecretorio in embrioni. *Allolobophora caliginosa* (Oligochaeta)

g POULOUX, J.-D. Dr.ès Sci. — Lab. de Biol. Anim. A, Univ. Bordeaux I, Av. des Facultés, 33 TALENCE, France

a Etude expérimentale de la morphogenèse de l’appareil génital. *(Anura)*
b Evolution des cellules germinales. *(Anura)*
c Etude de l’ultrastructure embryonnaire. *(Anura)*
e Etude descriptive et expérimentale de la formation et de la différenciation des somites. Same *species* as d
GIRARD (DECHAMBE), Mrs. C. Dr.Biol.Anim. — Lab. de Biol. Anim. A, Univ. Bordeaux I, Av. des Facultés, 33 TALENCE, France
a Modalités et facteurs de formation de l’ostium et de l’oviducte. (Anura)
b Modalités de la métamorphose de l’appareil excréteur. Rana dalmatina, Bufo bufo (Anura)
c Modalité de formation des glandes épidénogènes in vivo et in vitro durant la métamorphose. Alytes obstetricans (Anura)

GIRARD, H. Dr.es Sci. — Dept. of Anat., McMaster Univ., HAMILTON, Ont., Canada
a Physiologie embryonnaire: cathétérisme de fins vaisseaux, injections vasculaires, pression artérielle, action d’adrénaline et noradrénaline, pH et gaz du sang. Gallus domesticus (Aves)

GIROUD, A. Prof. — Lab. d’Histol.-Embryol. B, Fac. de Méd., 45 rue des Sts. Pères, 75 PARIS Vle, France
a L’influence tétрагénoe des infections Rickettsiennes. Rattus rattus, Mus musculus (Rodentia)
b Mécanismes des abnormités diverses, spécialement du système nerveux. Same species as a
c Teratogènic action of vitamin deficiency. Mus musculus, Mesocricetus auratus (Rodentia)
d Late influences on the developing nervous system. Rattus spec. (Rodentia)

GITLIN, G. Ph.D., Prof. — Dept. of Anat., The Hebrew Univ., Hadassah Med. Sch., P.O. Box 1172, JERUSALEM, Israel

GIUDICE, G. M.D., Prof. — Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy
a Protein synthesis during early development. Paracentrotus lividus (Echinoidea)
b Aggregation of cells isolated from embryos. Paracentrotus lividus (Echinoidea)
c RNA synthesis during early development. Paracentrotus lividus (Echinoidea)

GIUNTA, C. Dr. — Inst. of Biochem., Univ. of Turin, Via Giolitti 34, 10123 TORINO, Italy


GLAS, P. M.Sc. — Dept. of Anat. and Embryol., State Univ. of Groningen, Oostingsel 69, GRONINGEN, Netherlands
a The early development of the commissures in the medial telencephalic area. Mus musculus (Rodentia)

GLASS, Miss L. E. Ph.D. — Dept. of Anat., Sch. of Med., Univ. of California, SAN FRANCISCO, Calif. 94122, U.S.A.

a Maternal macromolecules transferred to developing ovarian oocytes and oviductal or uterine embryos; interrelationships with macromolecules synthesized by the oocyte or embryo itself. Mus musculus (Rodentia). Lepus spec. (Lagomorpha)

GLATZER, K. H. Dr.rer.nat. — Inst. für Allgem. Biol., Univ. Düsseldorf, Mettman Str. 16-18, 4000 DÜSSELDORF, W.Germany
a Egg and embryo development, especially electron microscopy concerning vitellogenesis. Coryphendrium parasiticum (Hydrozoa)
b Gene physiology, Y chromosome. Drosophila spp. (Diptera)
c Genetic regulation of cells differentiated: male germ line cells. Drosophila spp. (Diptera)

a Reaction of genital tract tissues to hormones in vitro. (Mammalia)
b Blastocyst implantation in vitro. (Mammalia)
c Behaviour of trophoblast in vitro. (Mammalia)
d Development of embryos in vitro. (Mammalia)

a Ultrastructure of embryo-maternal relationships during implantation. (Mammalia)

GLOBERSON, A. Dr. — Dept. of Cell Biol., Weizman Inst. of Sci., REHOVOTH, Israel

GLOOR, H. J. Ph.D., Prof. — Stat. de Zool. Expér., Univ. de Genève, 154 Route de Malagnou, 1224 CHÊNE BOUGERIES, Switzerland

GODET (NONNENMACHER), Mrs. J. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France
a La différenciation cellulaire dans le tissu sain, et les diverses formes d’hémoglobine. Gallus domesticus (Aves)

GOEDBLOED, J. F. M.D. — Anat.-Embryol. Lab., State Univ. of Leiden, Wassenaarseweg 62, LEIDEN, Netherlands


a Mesoderme-ectoderm interaction in differentiation (limb, scales, and feathers). Gallus domesticus (Aves)
b Chondroitin sulfate and collagen metabolism in micromelic mutants. Same species as a

GOETZER, A. M.Sc. — Univ. of Zululand, Private Bag, Kwa-Dlangezwa, EMPANGENI, Natal, S.Africa
a Ontogenesis of the chordochoron, especially the homologies of the elements of the viscerochoron. Barbus holubi (Cyprinidae, Teleostei)

GOFF, R. A. Ph.D., Prof. — Dept. of Zool., Univ. of Oklahoma, 730 Van Vleet Oval, Rm. 222, NORMAN, Okla. 73069, U.S.A.
a Analysis of the development of the appendicular skeleton by means of x-rays. *Gallus domesticus* (Aves)
b Histochemical analysis of morphogenesis. *Gallus domesticus* (Aves)

a Development of the retina and visual pathways. *Gallus domesticus* (Aves)

GOLDBERG, S. Ph.D.—Biol. Inst., Hacettepe Univ., ANKARA, Turkey

GOLZDE, M. Ph.D.—Dept. of Biol., Loyola Univ., 6525 N. Sheridan Rd., CHICAGO, Ill. 60626, U.S.A.
a Morphogenesis of the tail. *Gallus domesticus* (Aves)
b Site of action of factors inducing the rumple depression. Same species as a
c Effects of excess nutrients on early development in ovo and in vitro. Same species as a
d Effect of cytochalasin on the embryo. Same species as a

GOLDSMITH, M. Ph.D.—Dept. of Biol., Univ. of Pittsburgh, PITTSBURGH, Pa. 15213, U.S.A.
a The role of cytolytic enzymes in cell death and the hormonal control of cellular events during metamorphosis (electron microscopy, histo- and cytochemistry). *Rhodnius prolixus* (Hemiptera), *Rana pipiens* (Anura)
b Epidermal-mesodermal relationships during cell death and cell differentiation in the integument during larval stages and metamorphic climax, studied at the level of cellular ultrastructural changes, in vivo and in vitro. *Rana pipiens* (Anura)

GOLDFASS, E. Prof.—Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, CHICAGO, Ill. 60637, U.S.A.

a Regularities of transformation of the mitotic cycle during cleavage. (*Acipenseridae. Chondrostei; Amphibia*) (with T. A. DTTLEAFF)

GOMEZ DUIMM, C. L. M.D.—Inst. de Embriol., Biol. e Histol., Fac. de Cienc. Med., Univ. Nac. de La Plata, 60 y 120, LA PLATA, Argentina
a Ultrastructure of the pars distalis of the hypophysis in growth situations. *Mus musculus* (Rodentia)

GOMOT, L. Dr.es Sci., Prof.—Lab. de Zool., Fac. des Sci., Place Maréchal Leclerc, 25 BESANCON, France
a Développement embryonnaire de la glande uropygienne. (Aves) (avec J. BRIDE)

GONTO, A. M.D.—Dept. of Anat., Coll. of Med. and Dent., 100 Bergen St., NEWARK, N.J. 07103, U.S.A.
b Prolactin-thyroid interaction during metamorphosis. *Triturus* (Diermictylus) viridescens (*Urodela*)

a Ultrastructure of ovarian and testicular germ cell development. (*Oryctolagus cuniculus* (Lagomorpha), *Homo sapiens* (Primates))
b Ultrastructure of fertilization and cleavage. *Oryctolagus cuniculus* (Lagomorpha)

GONTCHAROFF, Miss M. — Lab. de Biol. Cell., Fac. des Sci., B.P. 347, 51 REIMS, France
a Regeneration. *Lineus ruber* (Anopla, Nemertes)
b Analogues of DNA in embryonic development. *Strongylocentrotus purpuratus* (Echinodidea)
c Regulation of cell division. *Physarum polycephalum* (Eumycetozoa)

GONZALEZ-SANTANDER, R. — Inst. Cajal, Velazquez 144, MADRID 6, Spain
a Citofenicolacion de los gonocitos
b Ultraestructura de la crest neural. *Gallus domesticus* (Aves)
c Ultraestructura de los ovocitos. *Homo sapiens* (Primates)
GOODWIN, B. C. Ph.D. — School of Biol. Sci., Univ. of Sussex, Falmer, BRIGHTON, BN1 9QG, England
a Control of regeneration by local electrical and biochemical stimulation. *Hydra littoralis* (Coelenterata)
b Analysis of field phenomena in early gastrulae by grafting techniques, temperature perturbation, and electrical stimulation. *Xenopus laevis* (Anura)
c Morphogenetic movements during gastrulation and neurulation. *Xenopus laevis* (Anura)

GopalAn, H. N. B. — Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, W.Germany
a Influence of organic ions on puffy patterns in giant chromosomes. *Chironomus thummi* (Diptera)
b Cytology and cytogenetics. *Dacus cucurbitae* (Diptera)

GopINATH, G. M. M.Sc. — Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA-2, India
a Development of integument and plumage. (Aves)

a Developmental phenomena associated with myocardial cell interactions in vitro. *Gallus domesticus* (Aves)
b Onset of protein synthesis and its control in parotid gland: epithelial-mesenchymal interaction leading to biochemical differentiation and exogenous agents affecting control of secretory events in vitro including synthesis, storage, and expulsion of proteins. *Rattus rattus* (Rodentia)

a Influence of albumen of different breeds on embryonic and postembryonic development. *Gallus domesticus* (Aves)

a Compensatory renal hypertrophy. *Rattus rattus* (Rodentia)
b Atrophy of auxiliary heart grafts. Same species as a
c Regeneration and wound healing in ear, *Oryctolagus cuniculus* (Lagomorpha) and wing (Cirroptera)

Gösswald, K. Dr. Phil., Prof. — Inst. für Angew. Zool., Univ. Würzburg, Röntgenring 10, 87 WÜRZBURG, W.Germany
a Development. (Formicinæ, esp. Formica rufa group, Hymenoptera)

a Electron microscopy of oogenesis in marine forms. (Teleostei)
b Viviparity. *Zoarces viviparus* (Teleostei)

Gottlieb, F. J. Ph.D., Prof. — Dept. of Biol., Univ. of Pittsburgh, PITTSBURGH, Pa. 15213, U.S.A.
a The development and differentiation of the wing imaginal disc. *Drosophila melanogaster* (Diptera), *Ephesia kühniella* (Lepidoptera)
b Genetic control and ultrastructure of development of pigmentation in the eye and testis. *Ephesia kühniella* (Lepidoptera)
c Genetic control and ultrastructure of the effects of female sterile mutants. *Drosophila melanogaster* (Diptera)

a Behavioral development of foetuses and embryos. *Anas platyrhynchos, Gallus gallus* (Aves)

Gottschewski, G. H. M. Dr. phil. habil., Prof. — Max-Planck-Inst. für Immunbiol., Stefan-Meier-Str. 8, 78 FREIBURG i.B., W.Germany
a Teratogenic influence of maternal metabolic status on the embryo. *Oryctolagus cuniculus* (Lagomorpha), *Mus musculus* (Rodentia)
b Determination and differentiation of organ primordia. *Oryctolagus cuniculus* (Lagomorpha), *Mus musculus* (Rodentia)
c Effects of agents after application in the early cleavage stage. (Mammalia)

Gottschling, H. Dr. — Inst. für Biochem. und Molek. Biol., Freie Univ. Berlin, Arnimallee 22, 1 BERLIN 33, W.Germany
a Isolation, characterization, and function of tRNAs and aminoacyl-tRNA-synthetases from embryos. *Gallus domesticus* (Aves)
b Isolation, structure, and function of ribosomes and protein synthesis in vivo and in vitro in the embryo. Same species as a

Götzos-Cappelli, Mrs. B. Dr. Biol. — Inst. d’Histol. et d’Embryol. Gén., Univ. de Fribourg, 1 rue Gockel, 1700 FRIBOURG, Switzerland
a Culture of embryonic arteries. *Gallus domesticus* (Aves)

Götzos, V. Dr. Vet. — Inst. d’Histol. et d’Embryol. Gén., Univ. de Fribourg, 1 rue Gockel, 1700 FRIBOURG, Switzerland
a Culture of embryonic fibroblasts. *Gallus domesticus* (Aves)
a Teratological effects of hypoxia and their morphogenetic and biochemical analysis. *Gallus domesticus* (Aves). *Rattus norvegicus* (Rodentia)


c Blood chemistry of the young embryo. Same species as a

d Serum potassium in development. *Rattus spec.* (Rodentia)


a Functions of satellite DNA’s and macromolecular metabolism in regenerating tissues. *Geccarcinus lateralis* (Decapoda, Crustacea) (with D. M. SKINNER)


GRANGER (PARSONS), Mrs. N. Ph.D. — Dept. of Developm. and Cell Biol., Univ. of Calif., IRVINE, Calif. 92664, U.S.A.

a Biochemistry and morphology of an isolated subcellular fraction of blastulae supporting a significant level of protein synthesis; mechanism of synthesis and the nature of the polypeptide products. *Rana pipiens* (Anura)

b The feasibility of attaching aminoacyl-TRNA synthetases obtained from embryonic material to artificial matrices. Same species as a

GRANGER, R. E. Ph.D. — Developm. Biol. Lab. and Center for Pathobiol., Univ. of California, IRVINE, Calif. 92664, U.S.A.

a Mode and time of action of insect hormones primarily ecdysones and juvenile hormone: cell cycles and determination: correlation of morphological changes with both quantitative and qualitative differences in RNA population (sucrose gradient centrifugation, acylamide gel electrophoresis, DNA RNA hybridization). *Galleria mellonella* (Lepidoptera)

GRANT, Ph. Ph.D. — Dept. of Biol., Univ. of Oregon, EUGENE, Ore. 97403, U.S.A.

GRASSO, J. A. Ph.D., Prof. — Dept. of Anat., Boston Univ., 80 E.Concord St., BOSTON, Mass. 02118, U.S.A.

a The relationship between various RNA species and the onset of hemoglobin synthesis. *Triturus cristatus* carnellis (Urodela)

b Red blood cell development in anaemic animals. *Triturus spec.* (Urodela)

GRASSO, M. Dr., Prof. — Inst. of Zool., Univ. of Bologna, Via S.Giacomo 9, 40126 BOLOGNA, Italy

a Role of neurosecretion in the regeneration and in the differentiation and ripening of the genital apparatus. *Dugesia lugubris*, *Polycelis nigra* (Turbellaria), *Fasciola hepatica* (Trematoda)

b Descriptive and experimental study of development and sex differentiation of genital apparatus. *Sepia officinalis* (Cephalopoda)


a Effects of operations on formation of dental lamina in the regenerating mandible. *Triturus viridescens* (Urodela)


GRAY, Miss F. H. Ph.D. — Dept. of Zool. and Entomol., The Ohio State Univ., 1735 Neil Ave., COLUMBUS, Ohio 43210, U.S.A.


GRAZIOSI, G. D.Sc. — Inst. of Zool. and Comp. Anat., Univ. of Trieste, Via A. Valerio 32, 34127 TRIESTE, Italy.

a Determination of the biological activity of the polar granules (irradiation, microinjection, removal of the polar cytoplasm). *Drosophila melanogaster*, *D. hydei* (Diptera)

GREEN, Mrs. M. C. Ph.D. — The Jackson Lab., BAR HARBOR, Me. 04609, U.S.A.

a Developmental genetics. *Mus musculus* (Rodentia)

GREEN, P. B. Ph.D., Prof. — Dept. of Biol., Univ. of Pennsylvania, PHILADELPHIA, Pa. 19104, U.S.A.


GREENWOOD, M. S. Ph.D. — Biol. Dept., Middlebury College, 3rd Floor Science Center, MIDDLEBURY, Vt. 05743, U.S.A.
a Origin and physiology of roots regenerated by hypocotyl slices from dormant, mature embryos. *Pinus lambertiana* (Gymnospermae).

b The cause of enhancement of auxin transport by pretreatment of embryos with auxin. *Pinus lambertiana* (Gymnospermae).

GREGG, J. H. Ph.D., Prof. — Dept. of Zool., Univ. of Florida, GAINESVILLE, Fla. 32601, U.S.A.

a Developmental physiology (Acrasiales).


GREMIGNI, V. Dr.Biol.Sci. — Ist. di Zool. e Anat. Comp. dell’Univ., Via A. Volta 4, 56100 PISA, Italy.


GRIFFOND (ROGNON), Mrs. B. Licès Sci. — Lab. de Zool., Fac. des Sci., Place Maréchal Leclerc, 25 BESANÇON, France.


GRIGNON, G. Prof. — Lab. de Biol. Méd., Univ. de Nancy I, 30 rue Lionnois, 54 NANCY, France.


GRILLO, H. C. M.D., Prof. — Dept. of Surgery, Massachusetts Gen. Hosp., BOSTON, Mass. 02114, U.S.A.

a Biological characteristics and function of native tissue collagenases in-wounds; partial purification and characterization. (Mammalia).

b Tissue resorption in healing wounds. *Oryctolagus cuniculus* (Lagomorpha).

GRILLO, T. A. I. Prof. — Dept. of Anat., Univ. of Ibadan, IBADAN, Nigeria.

GRIM, M. M. M.Dr. — Dept. of Anat., Charles Univ., U nemocnice 3, PRAHA 2, Czechoslovakia.


GROBSTEIN, C. Ph.D. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.


a Yolk from the ripe egg; influence of hypo- and hypertonic NaCl solutions; supravital basic and acidic dyes; electron microscopy. *Myxine* spec. (Cyclostomata).


a Intereelation of embryonic gonads, thyroids, pituitaries and oviducts; mechanism of oviduct regression in male and female, and of right ovary regression in female (hematicastration, castration, implantation of endocrine glands, administration of gonadal and other hormones). *Gallus domesticus* (Aves).

b Hormonal dependency of down feather pigmentation (castration, pituitary implantation, modification of thyroid hormone levels, administration of drugs (a - MSH etc.)). Same species as a.

GROS, D. Dr.3e Cycle — Lab. de Physiol. Anim., Univ. de Poitiers, 40 av. du Recteur Pineau, 86 POITIERS, France.

a Electron microscopy and electrophysiology of the heart before and after metamorphosis. *Ambystoma tigrinum* (Urodela).


a Egg production and survival of embryos after mother has ingested, or been injected with, chemical agents: without and with irradiation. *Habrobracon* spec. (Hymenoptera).

b The effects of space flight on reproductive performance (weightlessness. dynamic factors of launching and recovery, and radiation effects). (Insecta).


GROSS, P. R. — Dept. of Biol., Massachusetts Inst. of Technol., CAMBRIDGE, Mass. 02139, U.S.A.

GROTE, W. Dr.med. — Inst. für Humangenet. und Anthropol., Univ. Düsseldorf, Ulenberg-str. 127, 4000 DÜSSELDORF, W.Germany.


a Developmental biology. (Lamellibranchia).


a Developmental genetics. *Mus musculus* (Rodentia).
GRUNZ, H. Dr rer. nat. — Inst. für Biochem. und Molek. Biol., Fachbereich I (Vorklinik), Freie Univ. Berlin, Arnimallee 22, 1 BERLIN 33, W.Germany

a RNA and protein synthesis with regard to aggregation of dissociated embryonic cells. (Amphibia)

b Changes of cell affinity during morphogenesis. (Amphibia)

c Competency in early development. Triturus alpestris, Ambystoma mexicanum (Urodela)

GUARDABASSI, Miss A. Dr.nat.sc., Prof. — Inst. of Exper. Embryol., Univ. of Turin, Via Giolitti 34, 10123-TORINO, Italy

GUEDENET, J. C. Ing. — Lab. de Biol. Méd., Univ. de Nancy I, 30 rue Lioinnois, 54 NANCY, France

a Ultrastructure du développement du complexe hypothalamo-hypophysaire. Gallus domesticus (Aves)

GUERRIER, P. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France

a Etude microcénénatographique du développement. (Nemataeda; Spiralina)

GUICHARD (CHAVENAT), Mrs. A. M.ès sci.biol.anim. — Lab. de Chim. Horm., Maternité de Port-Royal, 121 Bd. de Port-Royal, 75 PARIS XIV, France

a Biosynthesis of steroids and sterols in organ culture of immature gonads; influence of HCG on steroidogenesis. Gallus domesticus (Aves)

b Cholesterol synthesis from acetate-14C and utilization of endogenous cholesterol for progesterone synthesis in placenta perfused in vitro; influence of choriionic gonadotropin and LH. Homo sapiens (Primates)

GUICHARD (CHAIK), Mrs. M. T. D.E.A. — Lab. de Physiol. des Insectes — Bâtiment A, Univ. de Paris VI, 11 quai Saint-Bernard, 75 PARIS Ve, France

a Recherches descriptives et expérimentales sur le développement. Culex pipiens (Diptera)

GUIRAO-PEREZ, M. Med.Dr., Prof. — Inst. F. Olóriz, Fac. of Med., Univ. of Granada, GRANADA, Spain


a Reproduction, especially delayed implantation: 1. light - ultrastructural studies of the blastocyst and uterine epithelium; 2. histochemistry of the reproductive tract. Mustela erminea (Carnivora)

b Light and electron microscopy of pre and post implantation changes in the uterus and the development of endotheliocorial placenta. Mustela putorius (Carnivora)

GULLUNI (CUOMO), Mrs. M. Dr. — Ist. di Biol. Gen., Fac. di Med., Univ. di Roma, Policlinico Umberto I, 00100 ROMA, Italy

a Effects of gravity acceleration during growth of primary root. Vicia faba (Papilionaceae)

b Effects of L-asparaginase during rejection of embryonic and larval transplants. Ranaesculenta (Anura), Triturus taeniatus (Urodela)


a Delayed implantation: DNA, RNA, and protein synthesis in blastocysts (autoradiography, scintillation counting, etc.). Dasypus spec. (Edentata), Oryctolagus cuniculus (Lagomorpha), Rattus spec., Mus musculus (Rodentia), Mustela vison (Carnivora)

b Biochemistry and ultrastructure of formation and fate of annulate lamellae, nucleolar function, and blastocyst formation. Oryctolagus cuniculus (Lagomorpha), Rattus spec. (Rodentia)

GUMBRECK, L. Ph.D., Prof. — Dept. of Anat. Sci., Univ. of Oklahoma Med. Center, 801 NE 13th St., OKLAHOMA-City, Okla. 73104, U.S.A.

a Development of genital, ophthalmic and urinary anomalies as related to genes, with emphasis on hermaphroditic alterations. Rattus rattus (Rodentia)

GUMPEL (PINOT), Mrs. M. Dr.ès Sci. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France

a La croissance et la différenciation du bourgeois de membre in vitro. Gallus gallus (Aves)

b Rapports mésenchyme axial - mésenchyme latéral dans l’organogenèse du membre. Same species as a

c Organogenèse du mésonephros. Gallus gallus, Coturnix japonica (Aves) (avec Y. CROSILIE et C. S. MARTIN)

GUNBERG, D. L. Ph.D., Prof. — Anat. Dept., Univ. of Oregon Med. School, 3181 S.W. Sam Jackson Park Rd., PORTLAND, Ore. 97201, U.S.A.

a In vitro investigations of the metabolic requirements of early post-implantation embryos. Rattus norvegicus (Rodentia)

b An investigation of the effects of teratogens on 6-30 somite embryos cultured in serum. Rattus norvegicus (Rodentia)

GUPTA, P. C. Ph.D. — Dept. of Zool., Univ. of Gorakhpur, GORAKHPUR, (U.P.), India

GURAYA, S. S. Ph.D., D.Sc., Prof. — Dept. of Zool., Punjab Agric. Univ., LUDHIANA, Punjab, India

a Cytology and histochemistry of oogenesis. Herdmania pallida (Tunicata), (Selachii).

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Anolis carolinensis (Lacertilia), Bungarus coeruleus, Naja n. naja (Ophidia), Mesocricetus auratus (Rodentia).

b Cytology and histochemistry of spermatogenesis. Bubalus bubalis (Artiodactyla), Oedipomides oedipus, Pan troglodytes (Primates).

GURDON, J. B. D.Phil. — Dept. of Zool., Univ. of Oxford, South Parks Rd., OXFORD OX1 3PF, England

GUSTAFSON, T. Fil.Dr., Prof. — Wenner-Gren Inst., Norrtullsgatan 16, S-113 45, STOCKHOLM, Sweden

a Morphogenetic movements and cell contacts. (Echinoidea)

b Enzyme induction and repression in cell cultures

GUYARD, A. Lic.és Sci. — Lab. de Zool., Fac. des Sci., Place Maréchal Leclerc, 25 BESANÇON, France

a La différenciation de la glande hermaphrodite. Helix aspersa (Pulmonata, Gastropoda) (avec L. GOMOT)


a Studies on fertilization, implantation and early development. Mesocricetus auratus, Mus musculus (Rodentia)


a Fine structure and hormonal activity of intact and cultured embryonic adrenal cells of different species

HACCUSIUS, Miss B. Dr., Prof. — Inst. für spez. Bot., Johannes-Gutenberg Univ., 65 MAINZ, W.Germany

a Beeinflussung der Entwicklung von Embryonen durch Chemikalien (Wachstumsregulatoren; Phytokinine). Eranthis hiemalis (Ranunculaceae)

b In vitro culture of callus cells with free tubular connections between the single cells. Cannabis sativa (Cannabinaceae)

c In vitro Kultur von Embryonen. Tulipa spec. (Liliaceae)

d In vitro Kultur von Geweben. Nicotiana spec. (Solanaceae)

HACH, P. M.D. — Inst. of Embryol., Fac. of Med., Charles Univ., Albertov 4, PRAGUE 2, Czechoslovakia

a Histogenesis of the hypophysis (comparative studies on the submicroscopic structure and enzyme histochemistry). Rattus rattus (Rodentia), Homo sapiens (Primates)

b Peri- and postnatal differentiation of rough endoplasmic reticulum in acinar pancreatic cells (ratio free:bounded ribosomes). Rattus rattus (Rodentia)

HADFIELD, M. G. Ph.D. — Kewalo Lab., Pacific Biomed. Research Center, Univ. of Hawaii, 2538 The Mall, HONOLULU, Hawaii 96822, U.S.A.

a Sources of yolk and causative factors in the non-development of nurse eggs (cytochemistry, electron, phase-contrast, and interference-contrast microscopy). (Vermitidae, Gastropoda)

b Externally induced metamorphosis and settling in marine larvae. (Gastropoda)

HADJISKI, P. Dr. — Lab. d’Histol., Fac. de Méd. de Paris. 45 rue des Sts. Pères, 75 PARIS VIe, France

a Development of the ovary. (Mammalia)

HADORN, E. Dr.Phil., Prof. — Zool.-Vergl. Anat. Inst., Univ. Zürich, Künstlergasse 16, CH-8006 ZÜRICH, Switzerland

a Determination, transdetermination and differentiation in cells of imaginal discs. Drosophila melanogaster (Diptera)


a Development of the olfactory organ (morphogenesis, histogenesis). Salmo trutta (Teleostei)


a Yolk protein synthesis by the fat body. Aedes aegypti (Diptera)

b Developmental patterns of protein synthesis by the fat body. Rhynchosciara hollaenderi (Diptera)

HAGET, A. Dr.és Sci., Prof. — Lab. de Zool. Expér., Univ. de Bordeaux I, Av. des Facultés, 33 TALENCE, France

a Activation du système ovulaire. Leptinotarsa spec. (Coleoptera)

b Recherches sur l’édification de la blastule et de la gastrule. Same species as a

c Ségrégation et migration des initiales germinales. Same species as a


a Lymphoid cell differentiation with respect to γ-globulins synthesis. Mus spec. (Rodentia)

HAGLUND, Miss B. M. Fil.llic. — Dept. of Zoophysiol., Univ. of Umeå, S 901 87 UMEA, Sweden

a Permeability and osmoregulation. Xenopus laevis, Rana spp. (Anura), Siredon mexicanum (Urodela)

HAIDER, M. H. M.Sc. — Dept. of Zool., Univ. of Gorakhpur, GORAKHPUR, (U.P.), India
HAKANSSON, L. M.D. — Tornblad-Inst, for Comp. Embryol., Biskopsgatan 7, S 223 62 LUND, Sweden
a Chromosome biochemistry during development. Homo sapiens (Primates)
HALBA, R. M.Sc. — Dept. of Vert. Zool., Univ. of Warsaw, Krakowskie Przedmieście 26/28, WARSZAWA 64, Poland
a Ossification of the skull. (Charadriidae, Aves)
HALEY, L. E. Ph.D. — Dept. of Biol., Dalhousie Univ., HALIFAX, N.S., Canada
a The activation of genes controlling some enzymes in development. Coturnix coturnix japonica, Coturnix c. japonica x Gallus domesticus (258)
a Origin of germ line, prelarval development, reproductive cycling, and developmental adaptations to the terrestrial environment. Ocygynus ceratophthalmus, O. laevis (Brachyura, Crustacea)
HALPER, Miss C. — Ist. di Genet., Univ. di Milano, Via Celoria 10, 20133 MILANO, Italy
a DNA replication in cells cultured in vitro. Drosophila melanogaster (Diptera)
b Biology of established cell lines. Drosophila spec. (Diptera)
HALL, B. K. Ph.D. — Dept. of Biol., Dalhousie Univ., HALIFAX, N.S., Canada
a The origin of cartilage and bone from common germinal cells. Gallus domesticus (Aves)
b Control of organ size, especially the adrenal gland. Gallus domesticus (Aves)
c Ontogeny of the pituitary-adrenal axis. Gallus domesticus (Aves)
HAMA, T. D.Sc., Prof. — Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa-ku, NAGOYA, Japan

HAMBURGER, K. Cand.mag. — Biol. Inst., Carlsberg Found., 16 Tagensvej, DK 2200 COPENHAGEN N, Denmark
a Respiratory metabolism during early development (gradient diver technique). Rana oxynotus, R. platycephalus (Anura)
HAMBURGER, V. Ph.D., Prof.(Emer.) — Dept. of Biol., Washington Univ., Skinker and Lindell Ave., ST. LOUIS, Mo. 63130, U.S.A.
a Neuro-embryology. Gallus domesticus (Aves)
b Embryology of behavior. Gallus domesticus (Aves), Rattus domesticus (Rodentia)
HAMBURGH, M. Prof. — Dept. of Biol., City Coll, Univ. of New York, Convent Ave. and 139th St., NEW YORK, N.Y. 10031, U.S.A.
a Dept. of Anat., Albert Einstein Coll. of Med., Eastchester Rd. & Morris Park Ave., NEW YORK, N.Y. 10461, U.S.A.
HAMILTON, H. L. Ph.D., Prof. — Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTEsville, Va. 22903, U.S.A.
a Organogenesis. Gallus domesticus (Aves)
a Haploid syndrome. Xenopus spp. (Anura)
b Radiation sensitivity of haploid and diploid embryos. Xenopus laevis (Anura)
c Haploid and diploid tissues (electron microscopy). Same species as b (with H. FOX, Dept. of Zool.)
HAMILTON, T. H. Ph.D., Prof. — Dept. of Zool., Univ. of Texas, AUSTIN, Tex. 78712, U.S.A.
HAMMERLING, J. Dr.phil., Prof. — Max-Planck-Inst. für Zellbiol., Abt. Schweiger, Anton Dohn-Weg, Postfach 1009, 294 WILHELMSHAVEN, W.Germany
a Nucleo-cytoplasmic relationships. Acetabularia spec. and other spp. (Algae)
a Hypophyseal development in the embryo. Gallus domesticus (Aves)
a The composition of oviduct secretions of ovariectionized females with and without estrogen and progesterone injections and the effects of these secretions on sperm metabolism, fertilizing ability and blastocyst development. Orictolagus cuniculus (Lagomorpha)
b The role of steroids in capacitation of sperm in the female reproductive tract. (Mammalia)
c Reproductive physiology; artificial insemination technique, sperm characterization, seminal plasma constituents. in vitro fertilization. Felis catus (Carnivora)
HANAOKA, Y. M.Sc. — Dept. of Comp. Endocrinol., Inst. of Endocrinol., Gunma Univ., Showa-machi, MAEBASHI, Japan
a Endocrinology of metamorphosis. Xenopus laevis, Rana japonica (Anura)
b Action of hormones on oogenesis and ovulation. Xenopus laevis, Rana japonica (Anura)
HANKCOCK, J. L. Ph.D., Prof. — Dept. of Anat. Royal Vet. Coll., LONDON NW1 0TU, England
a Intergeneric hybrids. Capra hircus x Ovis aries (Artiodactyla)
b Fertilization (experimental studies). Sus scrofa, Ovis aries (Artiodactyla)
Developmental pathology of hybrid placenta. Capra hircus x Ovis aries (Artiodactyla)

Immunoological aspects of foetal-maternal relationships exemplified by hybrid gestation. Capra hircus x Ovis aries (Artiodactyla) (with P.T. McGovern)

HANCOCK, R. L. M.D., Prof. — Div. of Med. Biochem., Fac. of Med., Univ. of Calgary, Calgary 44, Alta., Canada

Methylation of tRNA in liver development. Rattus norvegicus (Rodentia)

HANEK, W. Dr., Prof. — Zool. Inst. der Univ., Siesmayerstr. 70, 6000 Frankfurt a.M., W. Germany

Influence of hormones on skin. Rana temporaria (Anura), Mus musculus (Rodentia)

Effects of adrenocortical hormones. Anguilla anguilla (Teleostei), Ambystoma spec. (Urodela), Rana temporaria, Xenopus laevis (Anura)

Development of endocrine tissue. Ambystoma spec. (Urodela), Xenopus laevis (Anura)


Nucleic acid metabolism (chiefly DNA) during maturation of oocytes (autoradiography, biochemistry). (Amphibia)

Characterization of oocyte DNA ("vitelline" DNA). (Amphibia)

HANOCQ (Quertier), Mrs. J. A. Dr.en Sci.Biol. — Lab. de Cytol. et Embryol. Moléc., Univ. libre de Bruxelles, 67 rue des Chevaux, 1640 ROHDE-ST-GENESE, Belgium

Studies on DNA synthesis during oogenesis. (Amphibia)

Localization of cytoplasmic DNA during embryonic development. (Amphibia)


Differentiation of transplanted mouse limb-buds in the 3-day chick embryo and the immune responses of the host. Gallus domesticus (Aves), Mus musculus (Rodentia)

HANSEN-DEKESKAMP, Mrs. E. Dr. — Zool. Inst. der Univ., Physiol. Lehrstuhl, Berlinerstr. 15, 6900 Heidelberg, W. Germany

Metabolism of eggs and embryos. Gryllus domesticus (Orthoptera)

HANSON, E. D. Ph.D., Prof. — Dept. of Biol., Wesleyan Univ., Middletown, Conn. 06457, U.S.A.

Developmental genetics of oral structures (techniques: UV microbeam, nucleic acid antimetabolites). Paramecium aurelia, P. trichium (Ciliata)

HANSSON MILD, K. Fil.lic. — Dept. of Zoophysiol., Univ. of Umeå, S 901 87 UMEA, Sweden

Permeation, diffusion of water and osmoregulation. Rana spp. (Anura)

Cortical tension. Rana spp. (Anura)


Development of the olfactory organ. Salmo trutta (Teleostei)


Development of the digitonin-induced cell wall system in dividing meristematic root tip cells (electron microscopy). Allium sativum (Liliaceae)

Effects of morphactins on vegetative growth and propagation (electron microscopy). Bryophyllum daigremontianum (Crassulaceae)

HARA, K. Ph.D. — Hubrecht Lab. (Intern. Embryol. Inst.), Uppsalaalan 1, Universiteitssentrum "De Uithof", UTRECHT, Netherlands

Temporal aspects in the process of neural induction by the young head process. Gallus domesticus (Aves)

Cinematography of cleavage pattern and gastrulation movement. Ambystoma mexicanum (Urodela), Xenopus laevis (Anura) (with E.C. Boterenbrood)

The origin of the dorso-ventral polarity of the egg (microcinematography). (Amphibia) (with P.D. Nieuwkoop)


Ovum transport through the reproductive tract. Oryctolagus cuniculus (Lagomorpha), Rattus rattus (Rodentia)

Ovum development and implantation. Mesocricetus auratus, Rattus rattus (Rodentia), Oryctolagus cuniculus (Lagomorpha)

Effects of chemical compounds on pregnancy. Oryctolagus cuniculus (Lagomorpha), Rattus rattus, Mus musculus, Mesocricetus auratus (Rodentia)

Fertilization. Oryctolagus cuniculus (Lagomorpha)


Regeneration blastemata induced in heterotopic positions and their development. Ambystoma mexicanum (Urodela)

Differentiation and de-differentiation during regeneration. Same species as a

b Effect of trophoblast on uteroplacental blood vessels. *Mesocricetus auratus* (Rodentia), *Homo sapiens* (Primates)

HARRIS, M. Ph.D., Prof. — Dept. of Zool., Univ. of California, BERKELEY, Calif. 94720, U.S.A.
a Somatic cell hybridization: mechanisms of cell fusion and phenotypic expression of characters in hybrids. *Mesocricetus auratus* (Rodentia)

HARRIS, (FIELDMAN), Mrs. P. J. Ph.D., Prof. — Dept. of Zool., Oregon State Univ., CORVALLIS, Ore. 97331, U.S.A.
a Localization of "maternal" messenger RNA in eggs; isolation of "heavy bodies" and characterization of their RNA (biochemistry, electron microscopy). *Strongylocentrotus purpuratus* (Echinoidea)
b Centriole replication and separation, using mercaptoethanol to induce direct divisions from one to four cells (electron microscopy). *Strongylocentrotus purpuratus, Dendraster excentricus* (Echinoidea)

HARRISON, J. R. Ph.D., Prof. — Dept. of Zool., State Univ. Coll., OSWEGO, N.Y. 13126, U.S.A.
a *In vitro* studies on the growth and differentiation of the retinal pigment in the embryonic eye: analysis of developmental factors contained in the yolk-albumen of the egg. *Gallus domesticus* (Aves)
b Uptake of glucose by early primitive streak to early somite embryos (isotope techniques). Same species as a

HARRISON, R. G. D.M., Prof. — Dept. of Anat., Univ. of Liverpool, P.O.Box 147, LIVERPOOL L69 3BX, England
a Factors influencing the process of spermatogenesis. (Mammalia)

HARRISON, R. J. M.D., D.Sc., Prof. — Anat. School, Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3DY, England
a Reproduction, gonads, placenta, endocrine organs. *Phoca spec., Lobodon spec.* (Pinnipedia), Tursiops spec., Delphinus spec. (Cetacea)

HARTE, Miss C. Dr., Prof. — Inst. für Entw.physiol., Univ. zu Köln, Gyrhofsstr. 17, 5 KÖLN 41, W.Germany
a Interactions between genes and environment in controlling morphogenesis of leaves. *Antirrhinum majus* (Scrophulariaceae)
b Growth of callus, and differentiation in tissue cultures of different mutants. *Oenothera hookeri* (Onagraceae), *Antirrhinum majus* (Scrophulariaceae)

a Biochemistry of spermatozoa. (Mammalia)

HARTH, M. S. Ph.D. — Div. of Research, North Carolina Dept. of Mental Health, Dorothea Dix Hosp., Box 7532, RALEIGH, N.C. 27611, U.S.A.
a Descriptive comparative analysis of embryonic behavioral development in altricial and precocial species. *Columbia livia, Gallus gallus* (Aves)
b Brain development and behavioral function correlation in the embryo. *Columbia livia* (Aves)

a Derivatives of the sphincter cloacae. *Capra hircus* (Artiodactyla)

HARTMANN, R. Dr rer.nat. — Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, W. Germany
a Light and electron microscopy of spermatheca development in connection with endocrine ablations. *Gomphocerus rufus, Syrbyla fuscovittata* (Acrididae, Orthoptera)

HARTWIG, H. Dr.phil., Doz. — Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, W. Germany
a Wirkungsmechanismus von Schilddrüsenhormonen (Amphibia)
b Epithelcysten (Amphibia)
c Geweihbildung. *Capreolus capreolus* (Artiodactyla)

HASEGAWA, M. D.Sc., Prof. — Lab. of Biol., Women's Coll. of Tokai-Gakuen, Tenpakucho, Shiyowa-ku, NAGOYA, Japan
a Restitution of the eye. (Teleostei: Amphibia)
b Morphogenesis of the retinal pigment cell. Same species as a


HASELKORN, R. Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, CHICAGO, Ill. 60637, U.S.A.

a Embryogenesis of cutaneous fine structures. *Homo sapiens* (Primates)

HASHIMOTO, K. D.Sc. — Biol. Lab., Kozu High School, Tennoji-ku, OSAKA, Japan
a Relationships between encystment and morphogenesis. (Colpodaetidae, Ciliata)

HATAE, T. Dr.med. — Dept. of Anat., Fac. of Med., Kyushu Univ., FUKUOKA, 812 Japan
HATIER (AUTELIN), Mrs. R. Lic. ès Sci. — Lab. de Biol. Méd., Univ. de Nancy I, 30 rue Lionnois, 54 NANCY, France

a Ultrastructure du développement de la glande surrénale. Gallus domesticus (Aves)
b Ultrastructure du cortex de l’œuf. Triturus spec. (Urodela)

HAUENSCHILD, C. Dr rer. nat., Prof. — Zool. Inst. der Techn. Univ. Pockelsstr. 10a, 3300 BRAUNSCHWEIG, W. Germany

a Reproduction, sex differentiation, endocrinology and periodicity. Platynereis. Ophryotrocha
and other spp. (Polychaeta)

HAUSER, R. F. Ph.D. — Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlstr. 8, CH-3012 BERN, Switzerland

a The role of the subcomissural organ in normal development and regeneration of axial structures. Xenopus laevis (Anura)
b In vitro culture of larval tissues. Xenopus laevis (Anura)

HAY, Miss E. E. M.D. Prof. — Dept. of Anat., Harvard Med. School. 25 Shattuck St., BOSTON, Mass. 02115, U.S.A.

a Regeneration cells, and localization of RNA turnover (electron microscopic autoradiography). Planaria spec. (Turbellaria), Triturus viridescens (Urodela)
b Fine structure of the developing cornea, and localization and identification of proteins secreted by the epithelium (autoradiography and chromatography). Gallus domesticus (Aves)
c Ribosomal and glycogen configurations in oocytes and embryos (electron histochemistry). Xenopus spec. (Anura)
d Secretion of collagen by neural tube and other embryonic epithelia; its role in tissue interaction. Same species as b


a Relationship between embryo and corpus luteum. Óvis aries (Artiodactyla)


a Tissue regression in development and ageing; diploid cell degeneration in vitro. Gallus gallus (Aves), Mus musculus, Cricetulus griseus (Rodentia), Homo sapiens (Primates)

HAYASHI, Y. Ph.D., Prof. — Inst. of Zool., Tokyo Kyöiku Univ., Otsuka 3-29-1, Bunkyo-ku, TOKYO, Japan

a Epithelio-mesenchymal interactions in beak formation. Gallus domesticus (Aves)
b Biochemistry and immunochemistry of muscle differentiation. Rana nigromaculata (Anura), Gallus domesticus (Aves) (with T. HIRABAYASHI)
c Cytochemical studies on primary induction. Triturus pyrrhogaster (Urodela)


a Electron microscopy of experimentally induced malformations of the central nervous system. Mus musculus, Rattus norvegicus (Rodentia)
b Development of the vascular system in the central nervous system. Mus musculus, Rattus norvegicus (Rodentia)
c Morphogenesis of malformations in the auditory system induced by excess vitamin A given to the mother. Mus musculus (Rodentia)

HAYNES, J. F. Ph.D. — Dept. of Zool., Univ. of Maine, ORONO, Me. 04473, U.S.A.

a Proliferation. DNA synthesis and nerve fiber patterns in forelimb blastema. Ambystoma mexicanum (Urodela)
b Cytochemistry of dedifferentiation and redifferentiation in denervated limbs. Ambystoma maculatum, A. opacum (Urodela)
c Investigation of proliferation patterns in aneurogenic forelimb blastema. Ambystoma maculatum, A. opacum (Urodela)


a Cell relations in tissue culture. Gallus gallus (Aves), Mus musculus (Rodentia) (with M. ABERCROMBIE and S. M. PEGRUM)

HEBY, O. — Zoophysiol. Inst., Univ. of Lund, Helgonavägen 3, 223 62 LUND, Sweden

HEERSCHE, J. N. M. Dr. — Lab. for Cell Biol. and Histol., State Univ., Rijnsburgerweg 10, LEIDEN, Netherlands

a Fluctuation in cyclic 3'5'AMP levels in embryonic bone after prolonged exposure to parathyroid hormone (radioimmunossay). Rattus spec., Mus musculus (Rodentia)
b Hormonal regulation of calcium transport in the shell gland. Gallus domesticus, Coturnix coturnix japonica (Aves)

HEIM, W. G. Ph.D., Prof. — Dept. of Biol., The Colorado Coll., COLORADO SPRINGS, Colo. 80903, U.S.A.

a Serum proteins during ontogeny. Gallus domesticus (Aves), Rattus rattus (Rodentia)
b Alpha-2 macroglobulin during development, regeneration and various physiological states.  
Rattus rattus (Rodentia)  

HEIN, Miss R. R. Ph.D., Prof. — Biol. Dept., Upsala College, Prospect St., EAST ORANGE, N.J. 07019, U.S.A.  
a Effect of chemical agents (usually metals) on development and possible correlation with the effect of selected enzyme systems present in developing and regenerating tissues.  
Dugesia dorotocephala (Turbellaria), (Echinodermata)  

HEIZMANN, P. Dr.Ing. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 November 1918, 69 VILLEURBANNE, France  
a Métabolisme des acides nucléiques. Euglena gracilis (Euglenophyceae)  

a Investigations on the history of embryology. (particularly Invertebrata)  

HELMING, B. S. Ph.D. — Dept. of Entomol., Univ. of Alberta, EDMONTON, Alta., Canada  
a Metamorphosis. Frankliniella fascia, Haplothrips verbsaci and other spp. (Thysanoptera)  

HEMMINGS, W. A. D.Sc. — Dept. of Zool., Univ. Coll. of North Wales, BANGOR, Caern., Wales, U.K.  

HENDELBerg, J. Fil.Dr. — Zool. Inst., Univ. of Upsala, Box 561, S-75122 UPPSALA 1, Sweden  
a Spermiogenesis. (Platyhelminthes)  

HENDRICKX, A. G. Ph.D. — Div. of Biol. Growth and Developm., Southwest Found. for Res. and Educ., P.O.Box 28147, SAN ANTONIO, Tex. 78228, U.S.A.  

HENLEY, Miss C. Ph.D. — Dept. of Zool., Univ. of North Carolina, CHAPEL HILL, N.C. 27515, U.S.A.  

HENNEN, Miss S. Ph.D. — Dept. of Biol., Marquette Univ., 530 N. 15th St., MILWAUKEE, Wis. 53233, U.S.A.  
a Nucleo-cytoplasmic interactions in development. (Amphibia)  

HENNIG, W. Dr.ren.nat. — Max-Planck Inst. für Biol., Abt. Beermann, Spemannstr. 34, 74 TÜBINGEN, W.Germany  

a Development of the supraorbital glands. Pygoscelis adeliae (Aves)  
b H3-thymidine studies of the developing neural crest. Xenopus laevis (Anura)  
c Electron microscopy of the developing pituitary and median eminence in larvae. Same species as b  

HERLANT (MEEWIS), Mrs. H. Dr.en Sci.Zool., Prof. — Lab. de Biol. Anim. et Histol. Comp., Univ. Libre de Bruxelles, Av. F.-D. Roosevelt 50, 1050 BRUXELLES, Belgium  

HERMAN, L. Ph.D., Prof. — Dept. of Pathol., Downstate Med. Center, State Univ. of New York, 450 Clarkson Ave., NEW YORK, Brooklyn, N.Y. 11203, U.S.A.  
a Electron microscopy of normal and urethral induced changes in embryonic neural tube cells and lung tissue cells. Mus musculus (Rodentia)  

HERNANDEZ de BARRIOS, Mrs. C. E. M.D. — Cat. de Embriol., Fac. de Med., Univ. de Los Andes, MÉRIDA, Venezuela  
a Histochemistry of the developing placenta. (Artiodactyla), Homo sapiens (Primates)  

HERNANDEZ (VERDUN), Mrs. D. F. Dr.3e Cycle — Inst. Natl. de la Santé et de la Rech. Méd., Unité de Physiol. pluract., Hôp. Saint-Antoine, 184 rue du Faubourg Saint-Antoine, 75 PARIS XIIe, France  

HEROLD, R. C. Ph.D., Prof. — Dept. of Histol. and Embryol., School of Dental Med., Univ. of Pennsylvania, 40th and Spruce Sts., PHILADELPHIA, Pa. 19104, U.S.A.  
a Relation of dentinogenesis and dermal bone formation. Squalus acanthurus (Selachii; Teleostei), Ambystoma spec. (Urodela)  
b Development of embryonic fine structure, mitochondria, and cell membrane; effect of chemical treatments. Echinarchus parma (Echinoidea)  
c Comparative development and ultrastructure of dentines (osteodentine and vasodentine). Bbox lucius, Gadus callarias (Teleostei)  
d Development of embryonic skeletal structure; normal ultrastructure and effect of sodium fluoride. Same species as b  

a Protein synthesis in muscle of developing embryo. Gallus domesticus (Aves)  

HESSEL, O. Dr.ren.nat. Prof. — Inst. für Allgem. Biol., Univ. DÜSSELDORF, Mettmann Str. 16-18, 4000 DÜSSELDORF, W.Germany  
a Experimental embryology. (Mollusca)  
b Gene physiology. Y chromosome. Drosophila spp. (Diptera)  
c Genetic regulation of differentiation; male germ line cells. Drosophila spp. (Diptera)
a Development of the brain. Homo sapiens and other spp. (Mammalia)
a Egg shell formation and structure. Gallus domesticus (Aves)
b Ultrastructure of cell wall in relation to development. Avena sativa (Gramineae)
c Action of plant growth hormones.
a Effects of polarity on differentiation of sensory structures and outgrowth of nerve fibres. Xenopus laevis and other spp. (Amphibia)
HICKEY, Miss E. D., Ph.D. — Dept. of Anim. Genet., Storrs Agric. Exper. Station, Univ. of Connecticut. STORRS, Conn. 06268, U.S.A.
a Effects of protein starvation on subcellular RNA and protein degradation in regions of the explaned early embryo. Gallus spec. (Aves) (with N. W. KLEIN)
b Role of acid hydrolases in the regional specificity of macromolecular breakdown in explaned early embryos under protein starvation. Same species as a (with N. W. KLEIN)
HIDIROGLOU, M. D.V.M. — Anim. Research Inst., Central Experiment Farm, OTTAWA, Ont., Canada
a Phytol chain of tocopherol transfer from mother to fetus. Ovis aries (Artiodactyla)
HILD, W. J., M.D., Prof. — Dept. of Anat., Med. Branch, Univ. of Texas, GALVESTON, Tex. 77550, U.S.A.
a In vitro development of retinal explants: differentiation of sensory cells and synaptic complexes. Rattus norvegicus (Rodentia), Felis domestica (Carnivora)
HILFER, S. R. — Ph.D., Prof. — Dept. of Biol., Temple Univ., Broad & Berks St., PHILA- DELPHIA, Pa. 19122, U.S.A.
a Factors affecting formation of callus from floral apices and the subsequent differentiation of the callus tissue into organized buds. Nicotiana tabacum (Solanaceae), Aquilegia spec. (Ranunculaceae)
a Golgi impregnation and electron microscopic study of neurogenesis and gliogenesis in the olfactory bulb. Mus musculus (Rodentia)
b Early neurogenesis in spinal cord and cerebral cortex (electron microscopy, Golgi impregnation). Mus musculus (Rodentia)
HINRICHSEN, K. — Dr.med., Prof. — Inst. für Anat. der Ruhr-Univ. Bochum, Postfach 2148, 463 BOCHUM, W.Germany
a Thymus and lymphatic system, cell regeneration and migration. Mus musculus (Rodentia)
b Morphogenesis of epitheliogenic organs. Mus musculus (Rodentia), Homo sapiens (Primates)
HINSCH, Miss G. W. — Ph.D., Prof. — Inst. of Molec. Evol., Univ. of Miami, 521 Anastasia Ave., CORAL GABLES, Fla. 33134, U.S.A.
HIRABAYASHI, T. — Ph.D. — Inst. of Zool., Tokyo Kyōiku Univ., Otsuka 3-29-1, Bunkyo-ku, TOKYO, Japan
a Immunochemistry of muscle differentiation. Rana nigromaculata (Anura), Gallus domesticus (Aves)
HIRADHAR, P. M.Sc. — Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA-2, India
a Tail regeneration in the adult. Hemidactylus flaviviridis (Lacertilia)
HIRAMOTO, Y. — D.Sc., Prof. — Misaki Marine Biol. Station, Univ. of Tokyo, MISAKI Kanagawa-ken, Japan
a Cell division. (Echinoidea)
b Physical properties of eggs. (Echinoidea)
c Physiology of fertilization. (Echinoidea)
HIRN, M. — Dipl.d’Etud.Approf. — Lab. de Morphogénét. Anim., Centre Saint Charles, Univ. de Provence, Place Victor Hugo, 13 MARSEILLE 3e, France
a Regeneration. Cercaea hastata (Turbellaria)
a The relationship between hyperadrenal conditions and birth defects, in particular placental endocrine activity and the adrenal activity of embryos exposed to maternal hyperadrenocorticalism. Cavia porcellus (Rodentia)
b The relationship between hypoadrenal conditions and birth defects, in particular functional defects of the central nervous system of fetuses exposed to maternal hypoadrenocorticalism. Cavia porcellus (Rodentia)
HOLLINSHEAD, Mrs. M. B. Ph.D., Prof. — Dept. of Anat., Coll. of Med. and Dent., 100 Bergen St., NEWARK, N.J. 07103, U.S.A.

a Retinal changes at metamorphosis. Rana pipiens, Xenopus laevis (Anura)
b Growth of the visual system. Xenopus laevis (Anura)
c Retinal differentiation and histogenesis. Fundulus heteroclitus (Teleostei)

HOLM, K. A. Fil.Dr. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden

a Experimental investigation of the embryo (determination, prospective significance of embryonic areas). (Araneae, Arachnoidae)

HOLMBAKKEN, N. — Anat. Inst., Univ. of Bergen, Årstadvollen 19, 5000 BERGEN, Norway

a Odontogenesis. Gadus callarias, Esox lucius (Teleostei)


a Early events in light induced chloroplast development: membrane biogenesis and structural protein synthesis. Euglena gracilis (Euglenophyceae)
b Biogenesis of chloroplast membranes. Phaseolus vulgaris (Papilionaceae)

HOLSTEIN, a

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HOLSTEIN, a

HOFMAN, Miss Lj. D.Sc. — Inst. of Biol., Univ. of Zagreb, Šalata 3, 41001 ZAGREB, Yugoslavia

a Regulation of compensatory growth. Rattus norvegicus (Rodentia)

HOFMANN, D. K. Dr rer. nat. — Inst. für Entw. physiol., Univ. zu Köln, Gyrhofstr. 17, 5 KÖLN 41, W.Germany

a Experimental studies on the endocrine control of caudal regeneration. Platynereis dumerilii (Polychaeta)
b Neurosecretory phenomena in the central nervous system of specimens of different sexual development stage. Eunice viridis (Polychaeta)
c General and experimental investigations on reproduction and development. Eunice sicilensis (Polychaeta)

HÖGLUND, L. R. Fil. kand. — Dept. of Zoophysiol., Univ. of Umeå, S 901 87 UMEA, Sweden

a Polysaccharide metabolism, especially glycoproteins and mucopolysaccharides. Rana spp. (Anura)

HOHL, H. R. Dr.sc.net., Prof. — Cytol. Lab., Inst. of Gen. Bot., Univ. of Zürich, Birchstr. 95, 8050 ZÜRICH, Switzerland

a Submicroscopic morphogenesis. Dictyostelium discoideum and other spp. (Acrasiales), Phytophthora parasitica and other spp. (Phycomycetes)


HOLLAND, J. J. Ph.D., Prof. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.

a Action of viruses on development. (Mammalia)
b Translational factors in cellular differentiation. (Mammalia)

HOLMSHEAD, Mrs. M. B. Ph.D., Prof. — Dept. of Anat., Coll. of Med. and Dent., 100 Bergen St., NEWARK, N.J. 07103, U.S.A.

a Embryology of grey lethals showing osteopetrosis and eruption failure of molars (light and electron microscopy). Mus musculus (Rodentia)
b Embryonic development of skeletal muscle (electron microscopy). Homo sapiens (Primates)


a Retinal development at metamorphosis. Rana pipiens, Xenopus laevis (Anura)
b Growth of the visual system. Xenopus laevis (Anura)
c Retinal differentiation and histogenesis. Fundulus heteroclitus (Teleostei)

HOLM, K. A. Fil.Dr. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden

a Experimental investigation of the embryo (determination, prospective significance of embryonic areas). (Araneae, Arachnoidae)

HOLMBAKKEN, N. — Anat. Inst., Univ. of Bergen, Årstadvollen 19, 5000 BERGEN, Norway

a Odontogenesis. Gadus callarias, Esox lucius (Teleostei)


a Early events in light induced chloroplast development: membrane biogenesis and structural protein synthesis. Euglena gracilis (Euglenophyceae)
b Biogenesis of chloroplast membranes. Phaseolus vulgaris (Papilionaceae)

HOLSTEIN, A.-F. Dr.med. — Anat. Inst. der Univ. Hamburg, Martinistr. 52, 2-HAMBURG 20, W.Germany

a Histologische und Elektronenmikroskopische Untersuchungen zur Entwicklung der abliegenden Samenwege. Homo sapiens (Primates)
b Fluoreszenzmikroskopische Untersuchungen der Spermatozoen. Oryctolagus cuniculus (Lagomorpha)
c Entwicklung des Hodens. Homo sapiens (Primates)

a Developmental genetics, especially of variegated phenotypes. *Mesocricetus auratus* (Rodentia)

HOLT, Th. K. H. Drs. — Zool. Lab., Dept. of Cell Biol., Univ. of Nijmegen, Driehuizerweg 200, NIJMEGEN, Netherlands

a Structural changes in chromosome loci following gene activation. *Drosophila* spec., *Chironomus* spec. (Diptera)

HOLTER, H. Ph.D. — Physiol. Dept., Carlsberg Lab., 10 Gl. Carlsbergvej, 2500 COPEN-HAGEN, Valby, Denmark

HOLTRETER, J. K. F. Ph.D., Prof. — Dept. of Biol., Univ. of Rochester, ROCHESTER, N.Y. 14627, U.S.A.

HONJO, T. — Dept. of Embryol., Carnegie Inst. of Washington, 115 W. University Park-
way, BALTIMORE, Md. 21210, U.S.A.

a Regulation of nucleic acid synthesis in early development. *Xenopus laevis* (Anura) (with R. H. REEDER)


a Transfilter induction of lenses, neural and retinal tissues by eye rudiments in gastrula ectoderm and the dependence of their appearance of the duration of induction. *Rana temporaria* (Anura)

b Inductive interactions of the cells of differentiating retina by means of combinations of cells of the eye rudiment and gastrula ectoderm. *Rana temporaria* (Anura), *Galilus domesticus* (Aves) (with G. V. LOPASHOV)

c Conditions of the initiation of development and the positioning of axial rudiment in the early blastoderm. *Leuciscus bergi* (Cyprinidae), *Epilampus shapeiri* (Cyprinodontidae, Teleostei)

HOPPE, P. C. Ph.D. — The Jackson Lab., BAR HARBOR, Me. 04609, U.S.A.

a Studies on ova in vivo and in vitro, especially in vitro fertilization, energy requirements for first cleavage, and fusing ova with embryoey bodies and their subsequent fetal development. *Mus musculus* (Rodentia)

HORAK, L. — Dept. of Embryol., Carnegie Inst. of Washington, 115 W. University Park-
way, BALTIMORE, Md. 21210, U.S.A.

a Regulation of synthesis of nuclear and cytoplasmic mitochondrial nucleic acids during early development. *Rana pipiens*, *Xenopus laevis* (Anura) (with I. DAWID and G.-J. WU)

HORI, R. D.Sc. — Biol. Inst., Fac. of Lit. and Sci., Toyama Univ., Gofuku 3190, TOYAMA, 930 Japan

a Sodium and potassium content, ionic permeability, water soluble proteins, and fertilization reactions (radioisotopes, thin-layer chromatography, electrophoresis). *Hemicentrotus pulcherrimus* (Echinoidae), *Orytias latipes* (Teleostei)

HÖRNBLOD, P. Y. M.D. — Lab. of Teratol., Karolinska Inst., S-104 01 STOCKHOLM 60, Sweden

a Experimental studies on closure of the ductus arteriosus and causes of its patency. *Oryctolagus cuniculus* (Lagomorpha), *Mus musculus*, *Rattus norvegicus*, *Cavia porcellus* (Rodentia), *Sus domesticus*, *Ovis aries* (Artiodactyla)

HORNBY, Miss J. E. B.Sc. — Dept. of Zool., Univ. of Reading, Whiteknights Park, READING RG6 2AJ, England

a Adhesion of embryonic cells. *Gallus domesticus* (Aves)

b Tissue interaction in differentiation of skin and hair, *Mesocricetus auratus* (Rodentia)

HORSFALL, W. R. Ph.D., Prof. — Dept. of Entomol., Univ. of Illinois, 320 Morrill Hall, URBANA, Ill. 61801, U.S.A.

a Imaginal teratogenesis by thermal stress (morphological and histological changes; sensitive period). *Aedes sierrensis*, *A. punctor*, *A. communis*, *A. stimulans*, *A. dianteus*, *A. cataphylla*, *A. excrucians*, *A. barri* et al. (Culicidae, Diptera)

HÖRSTADIUS, S. Fil. Dr., Prof. (Emer.) — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden

a Determination in the egg: analysis of the gradients and the processes behind them. (Echinoidae)

b The effect of various antimetabolites on embryonic development. (Echinoidae)

HORSTMANN, E. Dr. med. et phil., Prof. — Anat. Inst. der Univ. Hamburg, Martinistr. 52, 2000 HAMBURG-Eppendorf, W. Germany

a Spermatozoen und ductus epididymidis. *Oryctolagus cuniculus*, *Canis familiaris*, *Homo sapiens* (Mammalia)
Electron microscopy of spermatozoa and spermatogenesis. *Ornithodorus moubata* (Argasidae, Acanthidae, Geophilus linearis (Chilopoda)).

Tissue culture of tests. *Homo sapiens* (Primates)


Hormonal interactions and protein synthesis in mature oocytes. *Xenopus laevis* (Anura)

Ultrastructure of oocytes, ova, and early embryos. *Xenopus laevis* (Anura), Ambystoma maculatum (Urodela)

Hovarth, Miss C. M.D. — Inst. of Histol. and Embryol., Med Univ., Tuzoltó u. 58, BUDAPEST IX, Hungary


Effect of teratogens on chromosomes. *Rattus rattus* (Rodentia)

Hoshino, K. M.D., Dr. Med. Sc., Prof. — Dept. of Anat., Univ. of Manitoba, 750 Bannatyne Ave., WINNIPEG 3, Man., Canada

Development and growth of mammary glands after prenatal exposure to hormones and carcinogen. *Mus musculus* (Rodentia)

Influences of hormones and carcinogen upon mammary growth of male and female immature animals. Same species as a

Regeneration of transplanted mammary and salivary glands. Same species as a


Effects of some chemical substances upon the embryo. *Mus musculus*, *Rattus norvegicus* (Rodentia) (with Y. KAMEYAMA)

Morphogenesis of spina bifida and its allied conditions. *Rattus norvegicus* (Rodentia) (with U. MURAKAMI)

Morphogenesis of genetic microphthalmia. *Mus musculus* (Rodentia) (with Y. KAMEYAMA)

Autoradiography of the generation cycle in the neural cells of the embryonic brain. *Mus musculus* (Rodentia)

Hostetler, J. R. Ph.D. — Dept. of Anat., Ohio State Univ., 410 W. 10th Ave., COLUMBUS, Ohio 43210, U.S.A.

Effect of in vivo administration of phytohemagglutinin on fetal hemopoietic organs (light and electron microscopy). *Oryctolagus cuniculus* (Lagomorpha)

Light and electron microscopic histochemical analysis of supporting tissues in areas of hemopoiesis in embryos. (Aves; Mammalia)

Hotta, Y. Ph.D. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.

Regulation of DNA synthesis during meiotic development. *Trillium erectum*, *Lilium longiflorum*, *Tulipa gesneriana*, *Vicia faba*, *Bellevalia romana* (Angiospermae)

Hough (Raymond), Mrs. B. Ph.D. — Div. of Biol., Calif. Inst. of Technol., PASadena, Calif. 91109, U.S.A.

Molecular biology of oogenesis and early development, particularly gene activation. *Ilyanassa obsoleta* (Gastropoda), *Stronglylocentrotus purpuratus* (Echinoidea), *Engystomops pustulosus*, *Xenopus laevis* (Anura)

Houillon, Ch. Dr.ès Sci., Prof. — Lab. de Biol. Anim. (2e sect.), Univ. de Paris, 12 rue Cuvier, 75 PARIS Ve, France

Hourdry, J. — Lab. d’Anat. Comp., Fac. des Sci. d’Orsay, Bâtiment 441, 91 ORSAY, France

Houssaint, Miss E. — Lab. d’Embryol., Univ. de Nantes, 38 Bd. Michelet, B.P. 1044, 44 NANTES, France

Différenciation biochimique des hépatocyes. *Gallus gallus* (Aves)


Houthoff, H. J. Med.Drs. — Dept. of Pathol., Univ. of Groningen, Oostersingel 93, GRONINGEN, Netherlands

Howell, M. J. Ph.D. — Dept. of Zool., Austr. Natl. Univ., P.O.Box 4, CANBERRA, A.C.T., 2600 Australia

Development of sporocysts in vitro. *Philophthalmus burrilli* (Trematoda)

Development of metacercariae in vitro. *Stictodora lari* (Trematoda)


Developmental morphology of male sex organs. (Microtidae; Muridae; Sciuridae; Gliridae, Rodentia)

Hroch, M. Dr. — Dept. of Biol., Charles Univ., Simkova 870, HRADEC KRÁLOVÉ, Czechoslovakia

Hsu (Liang), Mrs. C. Y. Ph.D., Prof. — Dept. of Biomorphics, Natl. Defense Med. Center, P.O.Box 7432, TAIPEI 107, Taiwan, Republ. of China

Experimental sex reversal with high temperature. *Rana* spp. (Anura)
HUANG, Ru Chih C. Ph.D. — Dept. of Biol., Johns Hopkins Univ., Charles & 34th St., BALTIMORE, Md. 21218, U.S.A.


HUBER, W. D.Sc., Prof. — Naturhist. Museum, Bernastr. 15, CH-3000 BERN, Switzerland

HUBER, W. — Dep. of Dev. & Comp. Biol., Indiana Univ., Bloomington, Ind. 47401, U.S.A.

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HUGHES, A. F. W., Ph.D., Prof. — Dept. of Anat., Developm. Biol. Center, Western Reserve Univ., 2119 Abingdon Rd., CLEVELAND, Ohio 44106, U.S.A.

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HUMBLET, W. — Dep. of Anat., Tufts Univ., Boston, Mass., U.S.A.

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HUMMEL, Miss K. P. Ph.D. (Emer.) — The Jackson Lab., BAR HARBOR, Me. 04609, U.S.A.
a Biochemical factors in embryonic and larval development, particularly the role of nucleoproteinaccharides. *Puricentrotus lividus* (Echinoidae).
c Interaction of animal-vegetal morphogenes with respect to double gradient concept. (Echinoidae).

INFANTE, A. A. Ph.D. — Dept. of Biol., Wesleyan Univ., MIDDLETOWN, Conn. 06457, U.S.A.
a Control of protein and nucleic acid synthesis during embryonic development (density gradient centrifugation, in vivo and in vitro protein synthesis, electrophoretic separations). *Strongyllocentrotus purpuratus. Lytechinus pictus* (Echinoidae).

a Erythropoiesis in embryos, particularly organ and cell culture. *Gallus domesticus* (Aves)

a Ptoal brain lesions caused by maternal administration of monosodium glutamate and allied chemical substances. *Mus musculus* (Rodentia) (with U. MURAKAMI).

INOUE, S. Ph.D. — Lab. de Biol. Moléc., Dépt. de Biol., Univ. de Montréal, C.P. 6128, MONTREAL 3, Que., Canada
a Morphological and biochemical studies of the fertilization membrane, treatment of the isolated membrane with enzymes and chemicals, electron microscopy. *Strongyllocentrotus purpuratus* (Echinoidae).
b The fine structure of the egg surface membrane system (plasma and vitelline membrane) and its changes after fertilization, studied on isolated membrane system and on embedded eggs. *Arbiaa punctulata. Strongyllocentrotus purpuratus* (Echinoidae).

IOANNOU, J. M. Ph.D. — Dept. of Anat., School of Med., Thoresby Place, LEEDS LS2 9NL, England

IRIE, R. B.S. — Natl. Inst. of Anim. Industry, CHIBA-shi, 280 Japan
a UV-resistance of transforming DNA in germinating spores. *Bacillus subtilis* (Bacteria).
b Germination-induced change in the state of DNA in spores. Same species as a

ISHIDA, J. D.Sc., Prof. — Dept. of Biochem., Fac. of Sci. and Enqin., Saitama Univ., Shimo-Otubo 255, URAWA-City, Japan

ISHIKAWA, M., S.Sc. — Marine Biol. Station, Nagoya Univ., Sugashima, TOBA-shi, Michi-ken, 517 Japan

a Physiology of fertilization and artificial parthenogenesis. *Hemicentrotus pulcherrimus. Pseudocentrotus depressus* (Echinoidae) (with M. SUGIYAMA).


a Regulation of ecdysone secretion by cultured prothoracic gland. *Bombyx mori* (Lepidoptera).
b Mode of action of juvenile hormone on incorporation of female specific protein by ovaries in organ culture. *Bombyx mori* (Lepidoptera).
c Purification of brain hormone. (Insecta).

a Acid soluble nucleotides of eggs and sperm. *Hemicentrotus pulcherrimus* (Echinoidae).
b Effects of chlorinated hydrocarbons and other industrial products upon the embryonic development. *Hemicentrotus pulcherrimus. Anthocidaris crassispina* (Echinoidae).

ITO, R. M.S. — Dept. of Anat., Fac. of Med., Tokyo Med. and Dental Univ., 1-5-45, Yushima, Bunkyo-ku, TOKYO, 113 Japan

ILICIP, S. Ph.D. — Dept. de Morfol. Hum. Fisic. e Aplic., Univ. de São Paulo, C.P. 301, RIBEIRAO PRETO, S.P., Brazil

IVANOFF, Miss A. — Lab. d’Embryol. Univ. de Nancy 1, 31 rue Lionnois, 54 NANCY, France.
a Apparition et distribution des neurones et fibres aminergiques dans l’hypothalamus au cours de l’embryogenèse. Gallus domesticus (Aves)

IVANOVA (KASAS), Mrs. O. M. Dr.biologist, Prof. — Dept. of Embryol., Leningrad State Univ., Mendeleevsky St. 5, LENINGRAD V-164, U.S.S.R.

a Comparative embryology. (Invertebrata)

b Asexual reproduction. (Invertebrata)

IVEMARK, B. I. M.D., Prof. — Dept. of Pediat. Pathol., Karolinska sjukhuset, 104 01 STOCKHOLM 60, Sweden

a Anatomy and pathology of the placenta (micro-angiography). Homo sapiens (Primates)

b Lipid histochemistry of the placenta in pathologic pregnancy. Same species as a
c Fetal and neonatal immunity as reflected in the thymus and spleen (immunofluorescence). Same species as a

IVERSON, R. M. Ph.D., Prof. — Dept. of Biol., Univ. of Miami, CORAL GABLES, Fla. 33124, U.S.A.

a Nucleic acids during development. Lytechinus variegatus (Echinidea)

b Development of the mitotic apparatus and protein synthesis in eggs and embryos. (Echinidea)

IWAMATSU, T. Ph.D. — Biol. Lab., Aichi-Kyoko Univ., KARIYA-City, Aichi, Japan


a Intercellular material of yelloy-coat in growth and development (biochemistry, rheology, cytology). Phaeoactylym spec. (Diatoaneae). Chlamydomonas spec., Volvox spec., Pediasstrum spec. (Chlorophyceae)

b Physiology and biochemistry of cell surface changes during differentiaton and development. Phaeoactylym spec. (Diatoaneae). Chlamydomonas spec. (Chlorophyceae)

IWASAKI, T. Ph.D. — Div. of Biol., Natl. Inst. of Radiol. Sci., 9-1, 4-chome, Anagawa, CHIBA, 280 Japan

a Effects of ionizing radiations on oogenesis and embryonic development (cytology). Artemia salina (Anoeostraca, Crustaceae)

b Cytological studies on the radiosensitivity of spermatogenesis. Bombyx mori (Lepidoptera)


a Embryological study on endocrine correlation. (Amphibia)

b Comparative embryology of reproductive organs. (Anura)

IWATA, F. D.Sc. — Zoool. Inst., Fac. of Sci., Hokkaido Univ., North 10, West 8, SAPPORO, 060 Japan

a Comparative embryology, especially taxonomic interrelationships. (Nemertea)

b Development and regeneration. Lineus vagitus (Nemertea)

c Comparative embryology. Notopuna humilis (Polyeucidia, Tubellaria), Pugettia quadridens (Benchyura, Decapoda), Dendo doris rubra (Ophiostechbranchia, Gastropoda)

IYERI, Mrs. S. D.Sc. — Dept. of Biol., Fac. of Sci., Kyushu Univ., Hako zaki-cho, FUKUOKA, 812 Japan

a RNA metabolism of dissociated embryonic cells being affected by inductive agents. (Amphibia)

b RNA-polymerase of the egg. Artemia salina (Anoeostraca, Crustaceae)

c Reactivity of ectoderm cells in primary induction. Triturus pyrrhogaster (Urodela)

IZAWA, K. B.Fish. — Hamajima Marine Biol. Station, c/o Fac. of Fish., Pref. Univ. of Mie, 158 Edobashi 2-chome, TSU, Mie Pref., 514 Japan

a Postembryonal development: nauplius, copepodid and chalimus stages. (Cyclopoida; Caligoida; Lernaeopodoida; Copepoda)


a Asexual reproduction, especially morphogenesis and ultrastructure. Botryllus schlosseri (Ascidiae)

b Origin of germ cells, especially in asexual reproduction. Same species as a

c Motility in fibroblast-like cells and its role in morphogenesis (critical optical techniques). Xenopus laevis (Anura), Gallus domesticus (Aves)

JAASEKELAINEN (KARKINEN), Mrs. M. M.D. — Lab. of Exper. Embryol., III. Dept. of Pathol., Univ. of Helsinki, Haartmaninkatu 3, HELSINKI 29, Finland

a Virus-induced catacarat. Gallus gallus (Aves) (with L. O. SAXEN)

JACOB, H. J. Dr.med. — Inst. für Anat. der Ruhr-Univ. Bochum. Postfach 2148, 463 BOCHUM, W.Germany

a Development of notochord. Gallus domesticus (Aves)

b Differentiation of endoderm. Gallus domesticus (Aves)


a Ultrastructural and functional aspects of nucleus in larval salivary gland cells. Smittia parthenogenetica (Chironomidae, Diptera), and in developing oocytes. Xenopus laevis (Anura)

b Ultrastructural changes and patterns of RNA and protein synthesis in differentiating cells as studied by E. M. autoradiography. Triturus alpestris (Urodela), Xenopus laevis (Anura)

85
c Synthesis and transformations of cellular membranes: nuclear membranes in Hela cells; endoplasmic reticulum in cement gland cells of embryo. *Xenopus laevis* (Anura) (with C. H. WADDINGTON and M. M. PERRY)
d Nature of involvement of nucleolus in virus induced Lucké tumour cells. *Rana pipiens* (Anura)

JACOB (LOES), Mrs. M. Dr.med. — Inst. für Anat. der Ruhr-Univ. Bochum, Postfach 2148, 463 BOCHUM, W.Germany

a Development of primitive streak and Hensen's node. *Gallus domesticus* (Aves)

JACOBS, R. M. Ph.D., Prof. — Dept. of Oral Biol., Coll. of Dent., Univ. of Iowa, IOWA CITY, Iowa 52240, U.S.A.
a Placental transmission of muscle relaxants and their teratogenic effects. *Mus musculus* (Rodentia)
b Composition of glycosaminoglycans in embryonic palate: micro assay and effects of teratogenic agents. *Mus musculus* (Rodentia)

a Experimental developmental morphology, using controlled environment chambers, electronic computer processing of data, and studies of hormonal effects on organ and cell differentiation. *Caulerpa prolifera* (Siphonales, Algae), *Coleus blumei* (Labiatae), *Xanthium pensylvanicum* (Compositae)

JACOBSON, A. G. Ph.D., Prof. — Dept. of Zool., Univ. of Texas, AUSTIN, Tex. 78712, U.S.A.
a Induction and positioning of the nose, lens, and ear. *Taricha torosa* (Urodela)
b Factors controlling the segregation of the optic vesicle into pigmented retinal epithelium and sensory retina. Same species as a
c Characterization of the endodermal substance that induces heart development. Same species as a
d Experimental analysis and computer simulation of the shaping of the neural plate. Same species as a
e Ultrastructural and experimental analysis of early development. *Drosophila montana* (Diptera)

JACOBSON, D. C. O. Fil.Dr., Prof. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden

a Determination of the central nervous system. *Ambystoma* spec. (Urodela)
b Experiments on fiber pattern formation in the medulla oblongata. Same species as a

d Cytoplasmic control of DNA synthesis in neurons. *Mus musculus* (Rodentia)

JACOBSON, M. Ph.D. — Dept. of Biophys., The Johns Hopkins Univ., BALTIMORE, Md. 21218, U.S.A.

JACOBSSON, A. Fil.lc. — Inst. of Zool., Univ. of Gothenburg, Fack, S-400 33 GOTHENBURG 33, Sweden

a Ontogenesis of mesencephalic nuclei. *Gallus domesticus* (Aves)

JACQUES, Miss S. Y. B.A. — Dept. of Zool., Coll. of Sci., Univ. of W.Ontario, LONDON, Ont., Canada

JACQUOT, R. L. D.Sc., Prof. — Lab. de Physiol. Anim., Fac. des Sci., B.P. 347, 51 REIMS, France

a Pre- and postnatal changes in glucose and glycogen metabolism of the liver cell; eventually assays on isolated cultured hepatocytes; electron microscopy. *Rattus norvegicus* (Rodentia) (with C. PLAS)
b Hemopoietic function of the foetal liver; factors controlling its progressive disappearance. *Rattus norvegicus* (Rodentia) (with J. NAGEL)
c Endocrine function of the foetal pancreas; insulin blood levels in the foetus and in the mother. *Rattus norvegicus* (Rodentia) (with J. M. FELIX, B.C.J. SUTTER and Mrs. M. T. SUTTER)

JAFFE, L. F. Ph.D., Prof. — Dept. of Biol. Sci., Purdue Univ., LAFAYETTE, Ind. 47907, U.S.A.

a Transcellular developmental currents and proton fluxes through developing cells (vibrating probe detecting nanovolt differences). *Fucus furcatus*, *Pelvetia fastigiata* (Phaeophyta)
b Ionic changes during development (atomic absorption photometry, tracers, ion specific electrodes). *Same species as a*

JAGERSTEN, K. G. M. Fil.Dr., Prof.(Emer.) — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden

a Larval development. (Pogonophora)
b Comparative study of larval development. (Invertebrata)

JALOUZOT, R. — Lab. de Biol. Cell., Fac. des Sci., B.P. 347, 51 REIMS, France

a Nucleic acids and protein metabolism during initiation of adventitious roots. *Cicer arietinum* (Papilionaceae)
b Stimulation of RNA synthesis and cellular activation. *Same species as a*

JAMES, B. L. Ph.D. — Dept. of Zool., Univ. Coll. of Swansea, Singleton Park., SWANSEA, Glamorgan, Wales, U.K.
a Development of larvae and adults in vivo and in vitro. Microphallus pygmaeus, M. similis, Meigynnophallus minutus (Digenea, Trematoda)

JAMES, D. A. D.Phil. — Dept. of Biol., Univ. of Saskatchewan, SASKATOON, Sask., Canada

JAMES, D. W. B.S., Prof. — Dept. of Anat. and Embryol., Univ. Coll. London, Gower St., LONDON WC1E 6BT, England

a In vitro studies of the central nervous system. Gallus domesticus (Aves)

JANDIERI, Miss K. M. — Dept. of Biophys., Inst. of Exper. Morphol., Acad. of Sci. of the Georgian SSR., 51 Kamo St., TBILISI 2, U.S.S.R.

a Participation of nuclear and cytoplasmic substances in control of state of DNA in chromatin. Gallus domesticus (Aves), Rattus norvegicus (Rodentia)


a Measurement of the total nucleolar material (by interference microscopy) and the nucleolar RNA (by scanning microdensitometry) in cultured normally differentiating myoblasts and in myoblasts cultured from dystrophic muscle. Gallus domesticus (Aves), Mus musculus (Rodentia), Homo sapiens (Primates) (with K. F. A. ROSS)

JANSEN, J. M.D., Prof. (Emer.) — Anat. Inst., Univ. of Oslo, Karl Johansgate 47, OSLO 1, Norway

(no embryological work in progress)

JANSSENS, P. A. Ph.D. — Dept. of Zool., School of Gen. Studies, Australian Nat. Univ., P.O.Box 4, CANBERRA, A.C.T. 2600, Australia

a Development of enzyme systems specially those concerned in nitrogen metabolism. Xenopus laevis (Anura)

JANTOSOVIČOVÁ, Mrs. J. M.V.Dr. — Anat. Inst., Vet.-Med. Fak., Komenského 71, KOŠICE, Czechoslovakia

a Morphogenesis of the testis. Ovis aries (Artiodactyla)

JANTZEN [WILKEN'S], Mrs. H. L. M. Dr. — Zool. Inst. der Univ., Berlinerstr. 15, 6900 HEIDELBERG, W.Germany

a Ribonucleic acid populations of embryos during differentiation. Xenopus laevis (Anura)

b Synthesis of new RNA populations needed for encystment. Acanthamoeba spec. (Rhizopoda)

JARSKÁR, R. J. Dr. — Inst. of Zool., Univ. of Gothenburg. Fack, S-400 33 GOTHENBURG 33, Sweden

a Electron microscopy of the development of the median eminence, neural lobe, and adenohypophysis (from 14-day embryo to adult). Mus musculus (Rodentia) (with L. EURENIUS)

b Electron microscopy of the uptake mechanisms of monoamines and/or their precursors during different stages of the development of the median eminence. Mus musculus (Rodentia) (with L. EURENIUS)

JAYLET, A. Lic.ès Sci. — Lab. de Biol. Génér., Univ. Paul-Sabatier, 118 Route de Narbonne, 31 TOULOUSE 04, France

a Effets des rayons X sur la descendance d’animaux irradiés; étude des anomalies chromosomiques; mode de transmission des chromosomes remaniés; création de lignes homozygotes pour des chromosomes marqueurs. Pleurodeles waltlili (Urodela)

b Tétraploïdie expérimentale. (Urodela)

JELINEK, R. MÚD., CSc. — Lab. of Plastic Surg., Dept. of Exper. Teratol., Czechoslov. Acad. of Sci., Legerova 61, PRAHA 2, Czechoslovakia

a Quantitative changes of tissue, cellular and subcellular structure in normal and pathological ontogenesis of the central nervous system. (Vertebrata)

b Secondary development of axial structures (origin of neural tube and somites from the tail bud, localization of proliferation centers). Gallus domesticus (Aves)

c Elaboration of an appropriate method for testing the teratogenic activity of drugs. Gallus domesticus (Aves), Rattus norvegicus, Mus musculus (Rodentia)


a Experimental embryology and embryo culture in vitro. Mus musculus (Rodentia)

JENSH, R. P. Ph.D. — Stein Research Center, Thomas Jefferson Univ., 920 Chancellor St., PHILADELPHIA, Pa. 19107, U.S.A.

a Effect of combined injections of 2 different teratogenic antisera. Rattus norvegicus (Rodentia)

b Effect and localization of trypsin blue administered in the latter half of gestation; with or without teratogenic antisera. Rattus norvegicus (Rodentia)

c Effects of x-irradiation on postnatal lifespan (leukemic effects). Mus musculus, Rattus norvegicus (Rodentia)

JINNEROT, D. P. A. Fil.mag. — Inst. of Zool., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden

a Ultrastructure of neural crest cells in different developmental stages. Ambystoma spec. (Urodela), Gallus domesticus (Aves)

JIRSOVA, Miss Z. M.D. — Inst. of Embryol., Fac. of Med., Charles Univ., Albertov 4, PRAGUE 2, Czechoslovakia
a Egg transplantation (electron microscopic and cytochemical studies of egg transport and implantation in experimental conditions). (Mammalia)
b Electron microscopy and cytochemistry of tubal epithelium differentiation. (Rodentia; Carnivora), Homo sapiens (Primates)


a Ages of ossification of various bones in children and adults. Homo sapiens (Primates)
b Structure and development of anal sphincters. Same species as a

JOHANSSON, K. B. G. Fil. lic. — Wenner-Gren Inst., Norrtullsgatan 16, S-113 45 STOCKHOLM, Sweden

a Regulation of enzyme synthesis in cells in tissue culture. Homo sapiens (Primates)

b Biosynthesis of contractile proteins during myogenesis in vitro. Mus musculus, Rattus spec. (Rodentia), Homo sapiens (Primates)

JOHNNEN, Miss A. G. Dr.phil., Prof. — Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, W.Germany

die Wirkungsspezifität der Induktionen in der Entwicklung. (Amphibia)

b Die Bedeutung des Zeitfaktors beim Induktionsvorgang. Ambystoma spec., Triturus spec. (Urodela)
c Untersuchungen über die Kompetenzverhältnisse beim Ektoderm. (Urodela)


electron microscopy of abnormal tissues, brain biochemistry and neuroendocrinology of animals carrying mutant genes. Mus musculus (Rodentia)

JOHNSON, E. M. Ph.D., Prof. — Dept. of Human Morphol., Coll. of Med., Univ. of California, IRVINE, Calif. 92664, U.S.A.
a Effects of teratogenic agents on components of inductive-responsive systems in vitro. Gallus domesticus (Aves), Rattus spec. (Rodentia)
b Nuclear-cytoplasmic interactions during synthesis of specific protein molecules. Acetabularia spec. (Chlorophyceae)
c Ontogeny of isoenzymes in early embryos. Homo sapiens (Primates)

a The role of changes in cell contact behavior and cell surface properties in gastrulation. Rana pipiens, Rana pipiens × R. catesbeiana and other hybrids (Anura)
b Timing of gene expression in early development (starch gel electrophoresis, enzyme polymorphisms, enzyme histochemistry). Xenopus laevis, Rana pipiens × R. sylvatica, R. pipiens × R. palustris (Anura)

a Normal development of craniofacial structures, emphasizing the contributions of neural crest and other primordia to the development of various facial components. Ambystoma maculatum (Urodela), Gallus domesticus (Aves). (Rodentia), Homo sapiens (Primates)
b Abnormal embryonic development of the face with particular emphasis on cleft lip and palate: nature of the genetic predisposition; influence of environmental factors. (Rodentia), Homo sapiens (Primates)

JOLLIE, M. T. Ph.D., Prof. — Dept. of Biol. Sci., Northern Illinois Univ., DeKalb, Ill. 60115, U.S.A.
a Development of the bony systems of the head. Amia spec., Lepisosteus spec. (Holostei), Acipenser spec. (Chondrostei), Stizostedion spec. (Elasmombranchii) and other Vertebrata

JONEJA, M. G. Ph.D., Prof. — Dept. of Anat., Queen's Univ., KINGSTON, Ont., Canada
ab Teratogenic effects of mitotic inhibitors: podophylla induces growth retardations only; vinblastine and vincristine induce a variety of malformations. Mus musculus (Rodentia)

JONES (HOLT), Mrs. E. C. Ph.D. — Dept. of Anat., Med. School, Univ. of Birmingham, Edgbaston, BIRMINGHAM B15 2TJ, England
a The effect of maternal age on morphology and development of fertilized eggs. Mus musculus (Rodentia)

a Effect of dielectric constant on the adhesion of embryonic cells. Gallus gallus (Aves)

a Location and function of reiterated DNA sequences in nuclei and chromosomes studied by in situ hybridization of complementary RNA. (Metazoa)
b Ultrastructure, biochemistry, and differentiation of myogenic cells, especially processes of transcription and translation

JONES, O. P. Ph.D., M.D., Prof. — Dept. of Anat., State Univ. of New York at Buffalo, 318 Capen Hall, BUFFALO, N.Y. 14214, U.S.A.
a Embryonic blood cells in the yolk sac. Rattus spec. (Rodentia)
b Electron microscopy of hepatic hematopoiesis. Rattus spec. (Rodentia), Homo sapiens (Primates)
JONES, R. F. Ph.D. — Dept. of Biol. Sci., State Univ. of New York at Stony Brook, STONY BROOK, N.Y. 11790, U.S.A.
a Physiology and biochemistry of development and differentiation during vegetative growth, asexual reproduction and gametogenesis. *Chlamydomonas reinhardtii* (Volvocales, Chlorophyceae)
b Control of vegetative and reproductive development. *Marchantia polymorpha* (Hepaticae)

JONES, R. W. Ph.D., Prof. — Dept. of Zool., Oklahoma State Univ., STILLWATER, Okla. 74074, U.S.A.

a Spore development. (*Rhodophyta* and other Algae)


JONSSON, J. — Zool. Inst., Univ. of Upsala, Box 561, S-75122 UPPSALA 1, Sweden

a The effect of various drugs (a.o. thalidomide) on embryonic development. *Ambystoma* spec. (*Urodela*), *Rattus* spec. (*Rodentia*), *Oryctolagus* spec. (*Lagomorpha*)

JOSEPH, J. D.Sc., M.D., Prof. — Dept. of Anat. & Embryol., Univ. of Groningen, Oostersingel 69, GRONINGEN, Netherlands

a Functional morphology of the head with special reference to larval life and metamorphosis. (*Anura*)
b Allometric growth of the eye. *Rana pipiens* (*Anura*)
c Development of the dentition. (*Blennididae, Teleostei*)


JONSSON, J. — Zool. Inst., Univ. of Upsala, Box 561, S-75122 UPPSALA 1, Sweden

a The effect of various drugs (a.o. thalidomide) on embryonic development. *Ambystoma* spec. (*Urodela*), *Rattus* spec. (*Rodentia*), *Oryctolagus* spec. (*Lagomorpha*)

JOSEPHSEN, K. D.D.S. — Dept. of Anat., Royal Dent. Coll., Vennelyst Blvd., 8000 ARHUS C, Denmark

a Morphological and histological development of maxillary incisors. *Mus musculus* (*Rodentia*)

JOSHI, P. V. Ph.D. — Cell Research Lab., Dept. of Zool., N.Wadia Coll., POONA-1, India

a Histochimistry of larva, pupa, and adult. *Apis dorsata* (*Hymenoptera*)

JOST, A. D. D.Sc., M.D., Prof. — Lab. de Physiol. Comp., Univ. de Paris, 9 quai St.Bernard, 75 PARIS Ve, France

JUBERTHIE, C. J. — Lab. Souterrain du C.N.R.S., 09 MOULIS, France

a Ontogenesis of nervous system: ultrastructure. *Cynorta cubana*, *Pachylus quinamavidensis* (Phalangida, Arachnida)
b Development. *Cynorta cubana* (Phalangida, Arachnida)

JUBERTHIE (JUPÉAU), M. L. — Lab. de Souterrain du C.N.R.S., 09 MOULIS, France

b Biologie du développement. *Troglocharis* spec. (*Decapoda, Crustacea*)

JÜNG, E. Dr.reer.nat. — Zool. Inst. der Univ., Röntgenring 10, 87 WÜRZBURG, W.Germany

a Experiments to determine the ooplastic reaction system. *Bruchidius* (= *Acanthoscelides* obectus) (*Coleoptera*)


a Early developmental stages. *Tetrodontophora bielanesia* (*Collemboidea*)
b Role of cleavage cavity in embryogenesis (studies with UV micro-beam). *Succinea putris* (*Gastropoda*)

a Developmental changes in the notochord. *Mus musculus* (*Rodentia*)
b Formation of various cell organelles during the fissure cycle. *Paramaecium aurelia* (*Ciliata*)
c Partial neoteny. *Xenopus laevis* (*Anura*)
d Activity of cytochalasin B on larval fusion. Same species as b

JUSZCZYK, W. Dr. — Dept. of Zool., Wyzsza Szkoła Pedagogiczna. ul. Podbrzegie 3, KRAKÓW, Poland

KACZANOWSKA (DOBRZÄSSKA), Mrs. J. Dr.ęs Sci. — Lab. of Protozool., Inst. of Zool., Warsaw Univ., Krakowskie Przedmście 26/28, WARSZAWA, Poland

a Effects of actinomycin D on divisional morphogenesis. *Paramaecium aurelia* (*Ciliata*)
b Effects of Ba++ and Ba+++ + Ca++ on morphogenesis. Same species as a

KACZANOWSKI, A. Dr.ęs Sci. — Lab. of Protozool., Inst. of Zool., Warsaw Univ., Krakowskie Przedmście 26/28, WARSZAWA 64, Poland

a Morphology and hypothesis of growth of trophons: 1. growth as a function of synthesis of microtubular fibrils; 2. growth abnormalities. *Opalina ranarum* (*Zoamastigina*)
b Experiments on life cycle and development: 1. in tadpoles under normal and abnormal conditions of temperature and nutrition; 2. cell differentiation and polyplody. *Opalina ranarum* (*Zoamastigina*), host: *Rana temporaria* (*Anura*)
KAHN, A. J. Ph.D., Prof. — Dept. of Anat., Washington Univ., 660 S. Euclid Ave., ST. LOUIS, Mo. 63110, U.S.A.


a Developmental changes in plasma protein synthesis in clonally-derived liver cells in vitro as revealed by radioimmunochemical techniques. *Rattus rattus* (Rodentia), *Homo sapiens* (Primates)

KAITILA, I. — Lab. of Exper. Embryol., III. Dept. of Pathol., Univ. of Helsinki, Haart-maninkatu 3, HELSINKI 29, Finland

a Drug-induced teratogenesis in vitro. *Mus musculus* (Rodentia) (with L. O. SAXÉN and A. LAHTI)

KAJI, S. D.Sc., Prof. — Dept. of Biol., Konân Univ., Okamoto, Motoyama-cho, Higashinada-ku, KOBE, Japan


a Congenital malformations and cytogenetics. *Homo sapiens* (Primates)

b Cytogenetics of aborted fetuses. *Homo sapiens* (Primates)

KAJITA, A. M.D. — Dept. of Biochem., Nippon Med. School, 1-1-5 Sendagi, Bunkyo-ku, TOKYO, Japan

a Genetic control of hemoglobin switch during metamorphosis. *Rana catesbeiana* (Anura) (with K. TORII and R. SHUKUYA)

b Change of isozyme patterns during metamorphosis. *Rana catesbeiana* (Anura) (with R. SHUKUYA)

KALLEN, A. J. B. M.D., Prof. — Torublad-Inst. for Comp. Embryol., Biskopsgatan 7, S-223 62 LUND, Sweden

a Epidemiologic studies on teratology. *Homo sapiens* (Primates)

KALLIO, P. Dr.Phil. — Dept. of Bot., Univ. of Turku, 20500 TURKU 50, Finland

a Changes of ultrastructure after denucleation. *Micrasterias torreyi* and other spp. (Deismidiaceae)

b The "after effect" of genetic information in denucleated cells. *Micrasterias torreyi*, *M. thomassiana* (Deismidiaceae)


a Development of the adrenergic inhibitory terminals in autonomic ganglia: fluorescence microscopy and electron microscopy. *Rattus rattus* (Rodentia) (with B. CSILLIK and E. KNYIHAR)

KALTENBACH, Mrs. J. COIFFER Ph.D., Prof. — Dept. of Biol. Sci., Clapp Lab., Mount Holyoke Coll., SOUTH HADLEY, Mass. 01075, U.S.A.

a Local action of thyroxine on metamorphosis: histology and histochemistry. *Rana pipiens* (Anura)

b Histochemistry of lysosomal enzymes in the metamorphosing tail. Same species as a

KALTER, H. Ph.D., Prof. — Children's Hosp. Research Found., Div. of Teratol., Elland and Bethesda Aves., CINCINNATI, Ohio 45229, U.S.A.

a The relation between spontaneous cleft lip and parity, litter size, uterine position, fetal sex and weight, etc. *Mus musculus* (Rodentia)

b The relation between teratogenesis and transplacental oncogenesis. Same species as a

KALTHOFF, K. Dr.rer.nat. — Biol. Inst. I (Zool.) der Univ., Katharinenstr. 20, 78 FREIBURG, W.Germany

a Embryonic determination. *Smittia spec.* (Chironomidae, Diptera)


a Factors influencing reproduction and production as far as the endocrines and gonads are concerned. (Aves)

b Growth and factors affecting especially the endocrines. (Aves)

c Factors influencing production and reproduction as far as the environmental conditions are concerned. (Aves)

KAMAT, D. N. Ph.D. — Dept. of Zool., Shivaji Univ., Vidyanagar, KOLHAPUR-4, M.S., India


a Effects of ionizing radiations upon the embryo. *Mus musculus*, *Rattus norvegicus* (Rodentia)

b Effects of some chemical substances upon the embryo. *Mus musculus*, *Rattus norvegicus* (Rodentia) (with K. HOSHINO)

c Mechanism responsible for malformations of the extremity in the embryo. *Mus musculus*, *Rattus norvegicus* (Rodentia)

d Development of the vascular system in the central nervous system. *Rattus norvegicus*, *Mus musculus* (Rodentia) (with Y. HAYASHI)

e Morphogenesis of genetic microphthalmia. *Mus musculus* (Rodentia) (with K. HOSHINO)
KANATANI, H. D.Sc., Prof. — Lab. of Physiol., Ocean Research Inst., Univ. of Tokyo, Minamidai 1-15, Nakano-ku, TOKYO, 164 Japan
a Mechanism of spawning. Asterias amurensis, Asterina pectinifera (Asteroidea)
b Mode of action of 1-methyldadenine on oocyte maturation. (Asteroidea)
c Mechanism of oocyte maturation. Same species as a

KANE, R. E. Ph.D., Prof. — Kewalo Lab., Pacific Biomed. Research Center, Univ. of Hawai, 2538 The Mall, HONOLULU, Hawaii 96822, U.S.A.
a Role of cortical granules in formation of hyaline and fertilization membrane. (Echinodermata)
b Mechanism of cell division, studied by means of the isolated mitotic apparatus. (Echinodermata)

a Reactivity of embryonic testis to antigens. (Aves)

KANKI, T. — Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2-1-1 chome, Fukazawa-machi, Setagaya-ku, TOKYO, 158 Japan
a RNA synthesis during cleavage. Hemicentrotus spec., Anthocidaris spec., Pseudocentrotus spec. (Echinodermata)

KANOH, Y. D.Sc., Prof. — Akkeshi Marine Biol. Stat., Hokkaido Univ., AKKESHI, Hokkaido, Japan

a Regeneration of cranium bones. Canis familiaris (Carnivora)

KAPLAN, N. O. Ph.D., Prof. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.
a Isolation of pyridine nucleotides in development and differentiation

KAPLAN, S. Ph.D. — Dept. of Anat., Med. Coll. of Wisconsin, 561 N. 15th St., MILWAUKEE, Wis. 53233, U.S.A
a Investigations into the mechanisms underlying congenital malformations; bio-energetics of development and the influence of teratogens thereon. Gallus domesticus (Aves)

KARASAKI, S. Ph.D., Prof. — Research Labs., Montreal Canc. Inst., Notre-Dame Hosp., 1560 Sherbrooke E., MONTREAL 133, Que., Canada
a Yolk platelets. Xenopus laevis (Anura)
b Ultrastructural aspects of cytodifferentiation in neoplastic development. Rattus rattus (Rodentia)
c Analysis of the physico-chemical properties of DNA in differentiating cells. Triturus viridescens (Urodela), Gallus domesticus (Aves), Mus musculus, Rattus rattus (Rodentia), Homo sapiens (Primates) (with S. P. MODAK)

KARKOLA, K. M.D. — Dept. of Forensic Med., Univ. of Turku, Kiinamyllyinkatu 10, 20520 TURKU 52, Finland
a Enzyme histochemistry of liver wounds. Rattus spec. (Rodentia)

KARLIN, Miss D. B.Sc. — Dept. of Zool., Hebrew Univ. of Jerusalem, JERUSALEM, Israel
a The ultrastructural changes which occur in blastoderm cells as they differentiate into either epi- or hypoblastic cells. Gallus domesticus (Aves)

KARLSSON, B. Fil. Dr. — Zoophysiol. Inst., Univ. of Lund, Helgonavägen 3, 223 62 LUND, Sweden

a Developmental histochemistry of the archicerebellar cortex. Rattus rattus (Rodentia) (with B. CSILLIK)

KASINSKY, H. E. Ph.D. — Dept. of Zool., Univ. of British Columbia, VANCOUVER 8, B.C., Canada
a Histone synthesis during cleavage. Xenopus laevis (Anura)
b Patterns of basic ribosomal protein and histone synthesis during development. Drosophila melanogaster (Diptera)
c Histone transition in spermogenesis. Drosophila melanogaster (Diptera), Xenopus laevis (Anura) (with N.C. BOLS)

KASPI (VISHNIVETSKII), Mrs. Th. M.S. — Dept. of Embryol. and Teratol., Tel-Hashomer Hosp., Tel-Aviv Univ., TEL-AVIV, Israel

a Promorphology of zygotes. (marine Invertebrata)
b Reproductive cycles. (marine Invertebrata)

KATAGIRI, Ch. D.Sc. — Zool. Inst., Fac. of Sci., Hokkaido Univ., North 10, West 8, SAPPORO, 060 Japan
a Fertilization and cleavage. Rana spec., Bufo spec. (Anura)

KATAKURA, Y. D.Sc. — Dept. of Biol., Keio Univ., YOKOHAMA-Hiyeshi, Japan
a Development of the sex characters. Armadillidium vulgare (Isopoda, Crustacea)

a Breeding system. Euplotes spec. (Ciliata)
KATO, K.-l. Ph.D. — Dept. of Biol., Osaka Kyōiku Univ., Tennoji-ku, OSAKA, 543 Japan  
a Histochemical properties of developing embryos. Triturus pyrhogaster (Urodela), Xenopus laevis (Anura)  
b Strobilation. Aurelia aurita (Scyphozoa)

KATO, M. B.S. — Dept. of Anat., Tokyo Med. and Dental Univ., 1-5-45, Yushima, Bunkyo-ku, TOKYO, 113 Japan  
a Experiments on lens regeneration. Triturus pyrhogaster, Hynobius tokyoensis (Urodela)  
b Tissue culture studies on the development of the mammary gland. Rattus norvegicus, Homo sapiens (Mammalia)  
c Collagenogenesis. Rana japonica, Bufo vulgaris (Anura), Hynobius tokyoensis, Triturus pyrhogaster (Urodela)  
d Hetero- and xenoplastic transplantation of tail. Rana japonica, Bufo vulgaris, Rhacophorus schlegelii (Anura)

a Differentiation of the embryonic lens in vitro. Gallus domesticus (Aves)

KAUFFMAN, Miss S. M.D., Prof. — Dept. of Pathol., Downstate Med. Center, State Univ. of New York, 450 Clarkson Ave., NEW YORK, Brooklyn, N.Y. 11203, U.S.A.  
a The effects of urethane on embryogenesis of neural tube cells and lung cells. Mus musculus (Rodentia)  
b Lung development and tumor induction in fetal lung

KAUFMAN, P. B. Ph.D., Prof. — Dept. of Botany, Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.  
a Ultrastructural development of stomata, cork-silica cell pairs, and trichomes. Avena sativa (Gramineae)  
b Electron microprobe analysis of silicification. Equisetum spec. (Equisetinae), Cyperus alternifolius (Cyperaceae; Gramineae)  
c Cellular differentiation during intercalary growth, especially regulation by hormones (GA3, kinetin, IAA). (Gramineae)  
d Regulation of invertase turnover by GA3 and kinetin; hormonal interactions in growth regulation; control points in carbohydrate metabolism regulated by GA3 and kinetin; rapid responses to hormone treatment (e.g. gibberellic acid). Avena sativa (Gramineae)

KAUFMANN, B. P. Ph.D., Prof.(Emer.) — Dept. of Zool., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.  
a Changing patterns of chromosomes fine structure and function during development. Drosophila melanogaster and interspecific hybrids (Diptera)

KAUFMANN, P. Dr.med. — Anat. Inst., Abt. für Neuroanat., Univ. Krankenhaus Eppendorf, Martinistr. 52. 2 HAMBURG 20, W.Germany  
a Development and chemodifferentiation of the placenta (electron microscopy, enzyme histochemistry). Homo sapiens (Primates)  
b Development and chemodifferentiation of the cortex cerebri (light microscopy, electron microscopy, enzyme histochemistry). Mus musculus, Rattus norvegicus (Rodentia)

KAWAKAMI, I. D.Sc., Prof. — Dept. of Biol., Fac. of Sci., Kyushu Univ., Hakozaki-cho, FUKUOKA, 812 Japan  
a Lens fiber differentiation from lens epithelium in vitro. Gallus domesticus (Aves)  
b Primary induction: inductive capacity of lysozyme; cell division and induction. Triturus pyrhogaster (Urodela)

KAWAMURA, T. D.Sc., Prof. — Lab. of Amphib. Biol., Fac. of Sci., Hiroshima Univ., Higashihiroshima-cho, HIROSHIMA, Japan  
a Hybridization between European and Japanese forms. (Ranidae, Anura)  
b Synthesis of amphidiolipids. (Ranidae, Anura)  
c Synthesis of nucleo-cytoplasmic hybrids between different species. (Ranidae, Anura)


KECK, K. Prof. — Inst. of Biol. Sci., Univ. of Arizona, TUCSON, Ariz. 85721, U.S.A.  

KEDES, L. H. Dr. — Dept. of Biol., Massachusetts Inst. of Technol., CAMBRIDGE, Mass. 02139, U.S.A.  

a Cytochemistry, tissue culture and ultrastructure of retinal development and regeneration. Triturus (Notophthalmus), viridescens, Triturus cristatus (Urodela), Gallus domesticus (Aves), (Rodentia)  
b The cell cycle and its relation to pigment epithelial differentiation in the retinal regenerating system. Same species as a

KELLEY, R. O. Ph.D. — Dept. of Anat., The Univ. of New Mexico, 915 Stanford Ave. N.E., ALBUQUERQUE, N.Mex. 87106, U.S.A.  
a Electron microscopy of induction systems. Xenopus laevis (Anura)  
b Electron microscopy of limb morphogenesis. (Mammalia)  
c Effect of dactinomycin and puromycin on chordamesoderm and presumptive neural ectoderm in vitro: nuclear and cytoplasmic alterations. Xenopus laevis (Anura)
a Development of morulae in the presence of an intra-uterine device (I.U.D.). Rattus norvegicus (Rodentia)

KELSO, A. F. Ph.D. — Dept. of Physiol. and Pharmacol., Chicago Coll. of Osteopathy, 1122 E. 53rd St., CHICAGO, Ill. 60615, U.S.A.

KEMP, N. E. Ph.D., Prof. — Dept. of Zool., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.
a Electron microscopy of metamorphic changes in the skeleton. Rana pipiens (Anura)
b Fine structure of fin rays in regenerating tailfins. Tilapia mossambica, Carassius auratus (Teleostei)
c Differentiation of enamel in teeth. Carcharhinus menisorrah (Elasmobranchi)
d Polymerization of collagen fibrils in connective tissues. (Elasmobranchi, Teleostei, Anura, Aves, Mammalia)

a Role of actomyosins and glycoproteins in adhesiveness of embryonic cells. Gallus domesticus (Aves)
b Interactions between cell types in morphogenesis. Halichondria panicea, Ophitaspogonia seriata (Porifera)

a Maturation and fertilization of oocytes. Mus musculus (Rodentia), Homo sapiens (Primates)
b Perfusion of ovaries in vitro. Homo sapiens (Primates)
c Composition of follicle and tubal secretions. Same species as b
d Protein synthesis of oocytes. Same species as a

KEPHART, Miss J. E. M.S. — Cell Res. Inst., B.L. 220, Univ. of Texas, AUSTIN, Tex. 78712, U.S.A.

KERNIS, M. M. Ph.D. — Dept. of Anat., Coll. of Med., Univ. of Illinois, 1853 W.Polk St., P.O.Box 6998 CHICAGO, Ill. 60680, U.S.A.
a Morphological and physiological effects of teratogens with particular emphasis on the effects of these agents on placental function (in vitro and in vivo) uptake of isotopes by embryos, autoradiography, electron microscopy, histochemistry, measurements of electrical potential differences. Rattus norvegicus (Rodentia)
b Chemical protection against drug-induced teratogenicity and its mechanism

KERR, Miss M. S. Ph.D. — Dept. of Biol., Syracuse Univ., 130 College Place, SYRACUSE, N.Y. 13210, U.S.A.
a Biochemistry of lipovitellins in oocytes and hemolymph. Callinectes sapidus (Decapoda, Crustacea)
b Maturation of hemocytes and their biosynthetic capacities. (Decapoda, Crustacea)

KERR, N. S. Ph.D., Prof. — Dept. of Zool., Coll. of Biol. Sci., Univ. of Minnesota, MINNEAPOLIS, Minn. 55455, U.S.A.
a The morphogenesis of non-flagellated amoeba to flagellated amoeba, of amoeba to plasmodia, and of plasmodia to fruiting bodies. Didymium nigripes (Eumycetozoa)
b Developmental genetics. Same species as a

KERSE (BÜYÜKÖZER), Mrs. I. Dr., Prof. — Inst. of Histol. and Embryol., Hacettepe Sci. Center, Med. Fac., ANKARA, Turkey
a Ultrastructure of fetal membranes. Homo sapiens (Primates)

KESSEL, R. G. Ph.D., Prof. — Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA-City, Iowa 52240, U.S.A.
a Analysis of variations in cell structure and function, especially developmental phenomena (gametogenesis) (electron microscopy, cytochemistry, radiotography, biochemistry, hydrostatic pressure). Various organisms

KETCHEL, M. M. Ph.D., Prof. — Dept. of Physiol., School of Med., Tufts Univ. 136 Harrison Ave., BOSTON, Mass. 02111, U.S.A.
a Immunological relationship between mother and fetus. Rattus spec., Mus musculus (Rodentia), Homo sapiens (Primates)
b Immunological aspects of reproduction and pregnancy. Same species as a

KEY, J. L. Ph.D., Prof. — Dept. of Botany, Univ. of Georgia, ATHENS, Ga. 30601, U.S.A.
a Molecular studies on auxin regulation of RNA synthesis. Glycine max, Daucus carota, Zea mays, Hordeum vulgare, Pisum sativum (Angiospermae)

KEYNAN, A. Dr. — Inst. of Life Sci., Hebrew Univ., JERUSALEM, Israel

KEYSER, A. J. M. Med.drs. — Dept. of Anat. and Embryol., Univ. of Nijmegen, Geert Grooteplein N. 21, NIJMEGEN, Netherlands
a Autoradiography of the development of the diencephalon and some basal telencephalic areas (limbic system, rhinencephalon), Cricetus barabensis griseus (Rodentia)

KHALIL, S. H. M.Sc. — Dept. of Zool., Alexandria Univ., Moharram Bey, ALEXANDRIA, Egypt
a Development of nervous system and skin. *Bufo melanostictus* (Anura)

KHARE, P. D.Phil. — Dept. of Zool., Univ. of Gorakhpur, GORAKHPUR (U.P.), India

a Regeneration of thymus and spleen. *Mus musculus, Rattus norvegicus* (Rodentia)

KIDDER, G. M. Ph.D. — Biol. Dept., Reed College, PORTLAND, Ore. 97202, U.S.A.
a Pattern and significance of embryonic RNA synthesis; genomic activity in embryo studied by molecular hybridization. *Mulinia lateralis* (Mactridae, Lamellibranchia)
b Development of the immune system (hemagglutinin tests). *Xenopus laevis* (Anura)
c Genetic basis of enzyme regulation during development. *Drosophila melanogaster* (Diptera)

KIDO, T. D.Sc., Prof. — Biol. Inst., Fac. of Sci., Univ. of Kanazawa, Marunouchi-1, KANAZAWA, Japan
a Analysis of mechanism of pharynx-formation. *Dugesia japonica* (Turbellaria)
b Reaggregation of dissociated cells. *Callyspongia elongata* (Porifera)
c Cytological properties of neoblasts. *Dugesia japonica* (Turbellaria)
d Cytological properties of interstitial cells. *Hydra vulgaris* (Hydrozoa)

KIEFER, B. I. Ph.D. — Dept. of Biol., Wesleyan Univ., MIDDLETOWN, Conn. 06457, U.S.A.
a Genetic control of differentiation and development of male germ cells (electron microscopy, electrophoresis, autoradiography, density gradient centrifugation). *Drosophila melanogaster* (Diptera)
b Structure and function of the mitotic apparatus as compared to other motile systems (electron microscopy, density gradient centrifugation). *Strongylocentrotus purpuratus* (Echinidae)
c Regulation of ribosomal RNA and ribosomal protein synthesis during development (density gradient centrifugation, electrophoresis, autoradiography). *Drosophila melanogaster* (Diptera)

KIEŁBÓWNÁ, Miss L. D.Sc. — Inst. of Zool., Univ. of Wroclaw, ul. Sienkiewicza 21, WROCLAW 2, Poland
a Myogenesis. (Amphibia)

a Regulative mechanisms (competition) in the differentiation of the limb bud skeleton (autoradiography). *Galium domesticum* (Aves)
b Regional determination of pteryiae and apteria. Same species as a
c Role of the nervous system in limb morphogenesis. Same species as a
d Regional capacities of somitic mesoderm. Same species as a

KIEMÁYER, O. Dr.phil., Prof. — Inst. für Entw.physiolog., Univ. zu Köln, Gyrhofstr. 17, 5 KÖLN 41, W.Germany
a Experimental studies on the developmental pattern. *Micrasterias denticulata* (Desmidiaceae)
b Comparative studies on the morphogenetic reaction of different varieties, treated with growth regulating substances. *Lycopersicon esculentum* (Solanaceae)
c Electron microscopy on the problem of cytomorphogenesis. *Micrasterias denticulata* (Desmidiaceae)

KILARSKI, W. Ph.D. — Dept. of Comp. Anat., Jagiellonian Univ., ul.Krupnicza 50, KRAKÓW, Poland
a Ultrastructure of yolk. (Holostei)

a Necessity, function, biochemical characteristics and composition of the mucin coat in the preimplanted embryo. *Oryctolagus cuniculus* (Lagomorpha)
b The effects of rabbit oviduct fluid on the development of preimplantation stages *in vitro*. *Oryctolagus cuniculus* (Lagomorpha), *Mesorictetus auratus* (Rodentia) and other *Mammalia*


a Examination of time and tissue specificity of tryptophan oxygenase and formylase appearance during larval development. *Drosophila melanogaster* (Diptera)
b Examination of factors regulating kynurenine deposition in larval fatbody granules. *Drosophila melanogaster* (Diptera)

KIMURA, I. M.Sc. — Dept. of Biophys. and Biochem., Univ. of Tokyo, 7-3-1 Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Comparative studies of microtubule proteins, immunologically and as substrates for the
thiol-disulfide exchange reaction. *Anthocidaris crassispina*, *Pseudocentrotus depressus*, *Hemicentrotus pulcherretrus* (Echinoida)


a Comparative study of oogenesis in different breeds. *Gallus domesticus* (Aves)

KINDAHL, Miss M. E. Ph.D. — Skeppargatan 51 III, 11458 STOCKHOLM, Sweden

a The development of the teeth. (*Insectivora*)

KING, Mrs. D. WEI Ph.D., Prof. — Dept. of Zool., Natl. Taiwan Univ., TAIPEI 107, Taiwan, Formosa

a Congenital malformations due to maternal vitamin E deficiency: 1. morphology and histochemistry; 2. effects of hormones (progesteron, estrone, y-tocopherol), antioxidants, and different diets; 3. tissue tocopherol levels. *Rattus norvegicus* (*Rodentia*)

b Teratogenic effects of mitomycin, antihistaminic drugs and monosodium glutamate. *Gallus domesticus* (Aves)


a Oogenesis and associated problems. (*Insecta; Crustacea; Arachnida*)

b Oosorption and post-fertilization stages. *Nasonia vitripennis* (*Hymenoptera*)

c Parthenogenetical development. *Nasonia vitripennis* (*Hymenoptera*)

KING, R. C. Ph.D., Prof. — Dept. of Biol. Sci., Northwestern Univ., EVANSTON, Ill. 60201, U.S.A.

a Formation and functioning of synaptonemal complex during meiotic prophase. *Bombyx mori* (*Lepidoptera*)

b Genetic control of oogenesis. *Drosophila melanogaster* (*Diptera*)

KING, T. J. Ph.D., Prof. — Dept. of Biol., Georgetown Univ., 37th & O.St. N.W., WASHINGTON, D.C. 20007, U.S.A.

a Nuclear differentiation in embryos. *Rana pipiens* (*Anura*)

c Chromosome replication in nuclear transplant embryos. (*Amphibia*)

KINOSHITA, S. Ph.D. — Zool. Inst., Univ. of Tokyo, Hongo 7-3, Bunkyo-ku, TOKYO, 113 Japan

a Biochemical analysis of animal and vegetative gradients in the embryo. *Pseudocentrotus depressus* (*Echinoida*)

b Nucleo- cytoplasmic interactions and regulation of embryonic differentiation. *Clypeaster japonicus* (*Echinoida*)

KIORTSIS, A. Dr.ès Sci., Prof. — Zool. Lab. and Museum, Univ. of Athens, Panepistimiopoulis (Kouponia), ATHENS (621), Greece


a Mitotic activity in early development. *Oryzias latipes* (*Teleostei*)


KISCHER, C. WARD Ph.D., Prof. — Dept. of Anat., Med. Branch, Univ. of Texas, GALVESTON, Tex. 77550, U.S.A.

a Etiology and ultrastructure of the hypertrophic scar. *Homo sapiens* (*Primates*)

b Biochemical ultrastructural studies on organogenesis
c Ultrastructural and biochemical analyses of development of skin derivatives. *Gallus domesticus* (*Aves*), *Mus musculus* (*Rodentia*)

d Effects of prostaglandins on developing skin and skin derivatives. *Gallus domesticus* (*Aves*), *Mus musculus* (*Rodentia*)

KISHIDA, Y. D.Sc. — Biol. Inst., Fac. of Sci., Univ. of Kanazawa, Marunouchi-1, KANAZAWA, Japan

a Depigmentation of eye after treatment with thio carbamidc and its derivatives. *Dugesia japonica* (*Turbellaria*)

b Mechanisms of eye formation during regeneration. *Dugesia japonica* (*Turbellaria*)

c Reaggregation of dissociated cells. *Callyspongia elongata* (*Porifera*)

d Ultrastructure of neoblast. *Dugesia japonica* (*Turbellaria*)

KISIMOTO, R. Dr.Agr. — Dept. of Plant Pathol. and Entomol., Kyushu Natl. Agric. Exp. Station, Nishi, 496, Izumi, CHIKUGO-shi, Fukuoka-ken, 833 Japan

a Wing polymorphism. *Nilaparvata lugens*, *Laodelphax striatellus*, *Sogatella furcifera* (*Araeopidae, Homoptera*)

b Development of viruliferous and non-viruliferous forms of a plant virus vector. *Laodelphax striatellus* (*Homoptera*)

c Geographical variation in diapause. *Laodelphax striatellus* (*Homoptera*)

KITSLER, A. Lic.phil.nat. — Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlistr. 8, CH-3012 BERN, Switzerland

a Comparative biochemistry and ultrastructure of mitochondria in embryonic systems. *Xenopus laevis* (*Anura*) (with R. WEBER)


a Differentiation of primary germ cells. *Thermobia domestica* (*Thysanura*)

a Light regulated development. Chlamydomonas spec. (Chlorophyceae), Phaseolus vulgaris (Papilionaceae)


a Normal and experimental developmental morphology, including teratology of the coronary arteries (high frequency coagulation). Gallus domesticus (Aves), Homo sapiens (Primates)

b Developmental morphology and teratology of the cardiovascular system. Homo sapiens (Primates)

c Mechanical factors determining the shape of the lens. Gallus domesticus (Aves), Mus musculus (Rodentia), Homo sapiens (Primates)

KLEIN, N. W. Ph.D., Prof. — Dept. of Anim. Genet., Storrs Agric. Exper. Station, Univ. of Connecticut, STORRS, Conn. 06268, U.S.A.

a Protein metabolism and its relationship to growth and differentiation in the explanted embryo. Gallus spec. (Aves) (with E.D. HICKEY)

b Mechanisms of teratogenic specificity in the explanted embryo. Same species as a

c Growth regulation in the early embryo (culture of embryos on a growth limiting medium; synthesis and break-down of macromolecules in specific regions of the embryo). Same species as a (with E.D. HICKEY)

KLEIN, R. L. Ph.D., Prof. — Dept. of Pharmacol. and Toxicol., Med. Center, Univ. of Mississippi, 2500 North State St., JACKSON, Miss. 39216, U.S.A.

a Electrolyte metabolism in developing embryonic heart (histochemistry and ultrastructure: atomic absorption spectrophotometry). Gallus domesticus (Aves)

KLEINEBRECHT, J. Dr rer. nat. — Inst. für Humangenet. und vergl. Erbpathol. der Univ., Paul-Ehrlich-Str. 41, 6 FRANKFURT/Main, W.Germany

KLEINFELD, Mrs. R. G. Ph.D., Prof. — Dept. of Anat., Univ. of Hawaii, 1960 East-West Rd., HONOLULU, Hawaii 96822, U.S.A.

a Hormonal effects on cell differentiation in the uterus. Rattus norvegicus (Rodentia)

b Nucleoprotein metabolism and cellular fine structure changes during embryonic, regenerative and neoplastic growth. Same species as a

KLEINLOGEL, H. Dipl.biol. — Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahliinstr. 8, CH-3012 BERN, Switzerland

a Effects of inhibitors of protein synthesis on metamorphosis. Xenopus laevis (Anura) (with R. WEBER)

KLEINSMITH, L. J. Ph.D., Prof. — Dept. of Zool., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.

a Role of nuclear proteins in the regulation of gene expression.

KLEISS, E. Dr. Med., Prof. — Cat. de Embriol., Fac. de Med., Univ. de Los Andes, MERIDA, Venezuela

— personal address: Apartado 38, MERIDA, Venezuela

a Teratogenesis of developmental failure (especially of the limbs) and excess (digits, twins, double monsters etc.) in relation with teratological factors and the corresponding susceptibility. (Rodentia), Homo sapiens (Primates)

b History of embryology and teratology

c Embryological and teratological nomenclature. Domestic animals, Homo sapiens (Mammalia)

d Classification of anomalies and malformations. Domestic animals, Homo sapiens (Mammalia)

e Development of the vascular supply to the human tongue, tonsils, and salivary glands (injected specimens). Homo sapiens (Primates)

f Histo- and toxoplasmosis as teratogenic factors. Homo sapiens (Primates) (with L. DURAN de LOPEZ and members of the Dept. of Pathol.)

KLIMA, M. Dr. — Dr. Senckenberg Anat. Inst., Ludwig-Rehn Str. 14, 6 FRANKFURT/Main, W.Germany

KMIC, B. M.B. — Dept. of Histol. and Embryol., Acad. of Med., ul. Narutowicza 60, LODZ, Poland

a Comparative histochemistry of the development of the adrenal medulla. Xenopus laevis, Rana esculenta (Anura), Rattus norvegicus, Cavia porcellus (Rodentia). Homo sapiens (Primates)

KNESE, K.-H. Dr.med., Dr.phil., Prof. — Inst. für Histol. und Embryol., Univ. Hohenheim (LH), Fruwirthstr. 16, 7000 STUTTGART 70, W.Germany

a Histochemistry, enzymology, and electronmicroscopy of the early histogenesis of the connective and supporting tissue of the presumptive regions of different kinds of mesenchyme, especially of cartilage and bone, and those in lung and kidney. Gallus domesticus (Aves), Bos taurus (Artiodactyla), Rattus norvegicus, Mus musculus (Rodentia), Homo sapiens (Primates)

b Morphology, enzymology, and electron microscopy of histogenesis, especially of cartilage and bone as well as metamorphosis after hormone application. Rattus norvegicus (Rodentia), Bos taurus (Artiodactyla)

c Developmental morphology of embryo. Bos taurus (Artiodactyla)
Larval Malformations
Development Gallus Cytology Ontogenesis Phenocopy Developmental Interactions Polyembryony 97

Comparison Effects Pattern Development
The Reproductive Ph.D.
Congenital Determination Methods Developmental

KOCH, a KOCHERT, c KOCHER, KOBAYASI, KOBAYASHI, b KOECKE, a KNYIHAR, a KNUDSEN, b KNIZETOVA, a

Baden, any Rattus microscopy species as SZEGED, Blvd., Hosp., Polychaeta) Lahn, any and their development-phase treatment-phase specificity during early development and organogenesis. Gallus domesticus (Aves)


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a Developmental physiology of neural crest cells in relation to early pigment synthesis and transfer of melanin into feather cells. *Anas domestica* (Aves)

b Development of feather germ induction and its morphological basis. *Anas domestica*, *Gallus gallus* (Aves)

c Developmental physiology of parathyroid gland primordium. *Salamandra* spec. (Urodela)

d Reaction of regenerating epidermal and mesodermal tissues in feather germs and hair follicles under influence of cancerogenous compounds. *Mus musculus* (Rodentia), *Columbia livia* (Aves)


a Comparative study of ultrastructure of sperm and spermiogenesis. (Decapoda, Crustacea)

b Ultrastructural aspects of spermatogenesis. *Esox vermiculatus* (Teleostei)

Kohl, D. M. Ph.D. — Dept. of Biol. Sci., Univ. of California, SANTA BARBARA, Calif. 93106, U.S.A.

a Control of RNA synthesis in embryos; characterization of RNA's synthesized at different stages by DNA-RNA hybridization. *Rana pipiens* (Anura)

b Effect of follic acid on RNA synthesis in the kidneys. *Mus musculus* (Rodentia)


a Embryology. *Cyclops* spec. (Copepoda, Crustacea)

Kohonen, P. J. Ph.D. — Lab. of Exper. Embryol., Dept. of Zool., Univ. of Helsinki, Arkadiankatu 7, HELSINKI 10, Finland


a Physiology of egg cleavage. *Hemicentrotus pulcherrimus*, *Pseudocentrotus depressus* (Echinoidea)


b Differentiation of skin derivatives with special reference to teeth, vibrissae, and feathers; combinations of epithelial and mesodermal tissues are used to determine the roles of these tissues, the inductive sequence, and the temporal and spatial stability and plasticity of the integument during early stages. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)

c Suppression and stimulation of neural crest and integumental differentiation by beta-2-thienylalanine. Same species as a

d Development of Meckel's cartilage. (Mammalia)

e Long-term culture of dental papillae cells. (Mammalia)

Kollros, J. J. Ph.D., Prof. — Dept. of Zool., Univ. of Iowa, IOWA CITY, Iowa 52240, U.S.A.

a Influence of thyroid hormones upon limb regeneration in tadpoles. *Bufo americanus*, *Pseudacris nigrita*, *Rana pipiens* (Anura)

b Tissue responses and control of sequence in metamorphism. *Rana pipiens*, *R. catesbeiana*, *Pseudacris nigrita*, *Ambystoma jeffersonianum* (Amphibia)

c Development of spinal and cerebral centers. *Rana pipiens*, *R. catesbeiana*, *Pseudacris nigrita*, *Bufo americanus* (Anura)

d Delineation of skin territories of different developmental capacities, especially as indicated by gland development. *Rana pipiens* and other spp. (Anura)

Kondo, K. M.Sc. — Dept. of Biophys. and Biochem., Univ. of Tokyo, 7-3-1 Hongo, Bunkyo-ku, TOKYO, 113 Japan

a Reaggregation of dissociated embryonic cells, especially the search for cell-reaggregating substances as known in Porifera. (Echinoidea)

b Adhesiveness of cells: 1. mechanism of adhesion; 2. changes in adhesiveness accompanying development and their significance. (Echinoidea)

Kondo, Miss N. M.Sc. — Dept. of Biol., Coll. of Gen. Educ., Osaka Univ., Toyonaka, OSAKA, 560 Japan

a Induction and development of apogamous structures in gametophytes. *Equisetum arvense* (Equisetinae)

Kongigsberg, I. R. Ph.D., Prof. — Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, Va. 22903, U.S.A.


a Chemotaxis, cell aggregation and differentiation. (Acrasiales)

b Adenosine 3'-5'-monophosphate and other cyclic nucleotides during morphogenesis in lower and higher organisms

c Electrophysiology of development. (Acrasiales) (with S. W. de LAAT)


a Effect of increased CO2 level during preincubation storage on embryogenesis. *Gallus domesticus* (Aves)

a Developmental study of mutational effects of genes which lead to eye and skeletal abnormalities. *Mus musculus* (Rodentia)
b Genetic control of cell proliferation. Same species as a
c Study of mechanisms of eye and skeletal abnormalities by organ culture. Same species as a
d Methods for the prevention of inherited eye abnormalities by administering drugs. Same species as a

a Cellular foundations of immunogenes
b Comparative research of immunological potentiality. (*Reptilia; Aves*)

**KORN, H. F.** Dr.rer.nat. — I.Zool. Inst., Friedrich-Alexander Univ., Universitätsstr. 19, 852 ERLangen, W.Germany
a Development. (*Nematoclinthes*)
b The postlarval brain. (*Polychaeta*)

**KORGUTI, S. E.** Ph.D., Prof. — Depts. of Neurol. and Physiol. Chem., Coll. of Med., Univ. of Wisconsin, MADISON, Wis. 53706, U.S.A.
a Changes in histone distribution during development of the nervous system. *Bos taurus, Sus domesticus* (Artiodactyla), *Macaca mulatta* (Primates)
b Proteins of the synaptic complex and development of synaptic contacts. Same species as a
c Development of fetal cerebellum (electron microscopy, Golgi staining). *Macaca mulatta* (Primates)

**KOROCHKIN, L. I.** Dr.med sci., Prof. — Inst. of Cytol. and Genet., Pravda St. 9, ap. 4, NOVOSIBIRSK-90, U.S.S.R.
a Experimental morphology, cytochemistry, and cytophysiology of the developing nervous system. *Rattus norvegicus, Mus musculus* (Rodentia)
b Developmental genetics. *Drosophila melanogaster, D. viridis* (Diptera)
c Regeneration of the neural retina with special reference to isozymic patterns of LDH. *Triturus cristatus* (Urodela) (*with V. I. MITASHOV*)

**KOROTKOVA, Mrs. G. P.** Dr.biol.sci. — Dept. of Embryol., Leningrad State Univ., Mendeleevsky St. 5, LENINGRAD V-164, U.S.S.R.
a Comparative study of regeneration, asexual reproduction, and somatic embryogenesis. *Leucosolenia complicata, Sycon lingua, Halichondria panicea* and other spp. (*Porifera*)
b Development of embryos cultivated in *vitro*. *Halisarca dujardina, Baicalospongia bacillifera* (*Porifera*)

**KORT, C. A. D.** de Dr. — Lab. of Entomol., Agric. Univ., Binnenhaven 7, P.O.B. 62, WAGENINGEN, Netherlands
a Effects of hormones on flight muscle development. *Leptinotarsa decemlineata* (Coleoptera)
b Hormonal control of the synthesis of vitellogenic proteins during oogenesis. *Leptinotarsa decemlineata* (Coleoptera)

**KOSCIELSKI, B.** D.Sc. — Inst. of Zool., Univ. of Wroclaw, ul. Sienkiewicza 21, WROC-LAW 2, Poland
a Cytolgy and cytochemistry of development. *Thermobia domestica* (*Thysanura*)

a Gametogenesis. sex cycles, and spawning ecology. *Perca flavatiilis, Lucioperca lucioperca, Acerina cernua, Rutilus rutilus, Abramis brauma, Scardinus erythropthalmus, Cyprinus carpio, Tinca tinca, Carassius carassius, Exox lucius, Coregonus lavaretus* and others (*Teleostei*)

**KOSHIKA, Y.** D.Sc. — Dept. of Biol., Coll. of Gen. Educ., Osaka Univ., Toyonaka, OSAKA, 560 Japan
a Cytological studies on the presence of recognizable sex-associated differences. *Gallus domesticus, Coturnix c. japonica, Meleagris gallopavo* (*Aves*)
b Histochemistry of developing photoreceptors. *Lymnaea spec., Euhadra spec., Limax spec. (Pulmonata), Monodonta spec., Conomurex spec., Littorina spec. (Prosobranchia, Gastropoda), Pecten spec., Chlamys spec. (Lampelibranchia), Octopus spec. (Octopoda), Sepia spec. (Decapoda, Cephalopoda)*
c Histochemistry of developing digestive organs. (*Mollusca: Amphibia*)

a Effect of increased CO₂ level during preincubation storage on embryogenesis. *Gallus domesticus* (*Aves*)
b Uptake of ⁴²H-thymidine by early embryonic tissue and its effect on mitotic activity. Same species as a

**KOSKIMIES, O. J.** M.D. — Lab. of Exper. Embryol., Dept. of Zool., Univ. of Helsinki, Arkadiankatu 7, HELSINKI 10, Finland
a Virus-induced abnormalities in embryonic development. *Homo sapiens* (Primates) (*with L. O. SAXEN, Dept. of Pathol.*)

**KOSTELLOW, Miss A. B.** Ph.D. — Dept. of Physiol., Albert Einstein Coll. of Med., Yeshiva Univ., 1300 Morris Park Ave., NEW YORK, Bronx. N.Y. 10461, U.S.A.
a Enzyme induction in the embryo; the conditions controlling the synthesis of tissue specific
enzymes from competitive pathways of tryptophan metabolism leading to the production of kynurenine or serotonin, studied in dissociated late blastula and early gastrula cells. *Rana pipiens* (Anura)

b The ionic events that occur during blastula formation which are associated with morphogenesis and cell differentiation; the transport of cytoplasmic Na⁺ into the blister-coel 1. mapping the changing electric fields at the surface of the developing embryo and correlating these fields with known patterns of cell migrations; 2. monitoring the rate of Na⁺ release in each of the germ layers; 3. assaying for vasopressin-like hormone activity in blastula extracts. *Rana pipiens* (Anura)

KOSTOVIČ (KNEZEVIĆ), Mrs. Lj. M.D. — Inst. of Histol. and Embryol., Univ. of Zagreb, Šalata 3, P.O.Box 166, 41001 ZAGREB, Yugoslavia

a Temporal sequence of appearance of collagen and elastin fibrils and basement membranes, their pattern organization and relation to morphogenetic events during ontogenesis. *Rattus norvegicus* (Rodentia) (with A. SVAJGER)

KOTANI, M. M.Sc. — Lab. of Embryol., Fac. of Sci., Osaka City Univ., 459 Sugimoto-cho, Sumiyoshi-ku, OSAKA, Japan

a Nature of germinal cytoplasm. *Xenopus laevis* (Anura)

KOYAMA, T. M.D., Ph.D. — Dept. of Anat., Tokyo Med. and Dent. Univ., 1-5-45, Yushima, Bunkyo-ku, TOKYO, 113 Japan

a Tissue transplantation. *Rana japonica, Rhacophorus schlegelii, Xenopus laevis* (Anura)

KOZIK, M. M.D. — Inst. of Neurol. and Sensory Organs, Med. Acad., Przybylszewskiego St. 49, POZNAN, Poland

a Histochemistry of glia cells in the developing nervous system. (Mammalia)

b Histochemical mapping of the developing brain. (Mammalia)

KRAICER, P. F. Ph.D., Prof. — Dept. of Zool., Tel-Aviv Univ., 155 Herzl St., TEL-AVIV, Israel

a The metabolism of spermatozoa. *Homo sapiens* (Primates)

b Composition of follicular fluid. *Homo sapiens* (Primates)


d Reproductive biology. *Psammomys obesus* (Rodentia)

e Microcinematography of fertilization. *Rattus norvegicus* (Rodentia)

KRÁL, B. RNDr. — Dept. of Morphol., Inst. of Vertebr. Zool., Czechoslov. Acad. of Sci., Kvetná 8, BRNO, Czechoslovakia

a Comparative studies of chromosomes. (Lacertilia; Rodentia; Insectivora)

KRAMER, Miss B. B.Sc.(Hons.) — Dept. of Anat., Med. School, Univ. of the Witwatersrand, Hospital St., Hillbrow, JOHANNESBURG, S.Africa

a Effects of actinomycin D on developing pigment cells. *Xenopus laevis* (Anura), *Gallus domesticus* (Aves)

KRAMER, J. P. Ph.D., Prof. — Dept. of Entomol., Cornell Univ., 10 Comstock Hall, ITHACA, N.Y. 14850, U.S.A.

a Morphological development. *Octosporea muscaedomesticae* (Microsporidia, Sporozoa)

b Pathogenesis of octosporosis. *Phormia regina, Musca domestica* (Diptera)

c Abnormal development in unnatural hosts. *Octosporea muscaedomesticae* (Microsporidia, Sporozoa), *Muscoidea* (Diptera)

KRANTZ, Mrs. H. Dr.med. — Anat. Inst., Med. Bereich, Univ. Rostock, Gertrudenstrasse 9-25, ROSTOCK 1, East. Germany

a Einfluss des Alters einer Kultur auf die Zellkerngrösse. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)

b Der Zellkern im Organismus und im Explantat. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)

c Development of the Hortega-cells. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)

KRATOCHWIL, K. Dr.phil. — Inst. für Krebsforsch., Univ. Wien, Borschkegasse 8a, Postfach 72, A-1090 WIEN, Austria

a Organ-specificity in mesenchymal induction. *Mus musculus* (Rodentia)

b Endocrine control of development. *Mus musculus* (Rodentia)

c Mammary gland development. *Mus musculus* (Rodentia)

KRAUS, Miss C. Dr.phil. — Brain Anat. Inst., Untere Zollgasse 71. (Waldau), 3072 OSTERMUNDIGEN-BE, Switzerland

a Ontogenesis of the brain. (Cetacea)

KRAUS, R. M.D. — Inst. of Embryol., Fac. of Med., Charles Univ., Albertov 4, PRAGUE 2, Czechoslovakia

a Differentiation and role of prechordal plate in early development of cephalic region (submicroscopic and cytochemical studies in normal and experimental conditions). *Gallus domesticus* (Aves), *Rattus rattus* (Rodentia), *Homo sapiens* (Primates)

b Differentiation of the chemoreceptor cell (comparative studies on the submicroscopic structure, enzyme histochemistry). (Rodentia; Carnivora), *Homo sapiens* (Primates)

c Differentiation of paraganglionic tissue. *Homo sapiens* (Primates)

d Comparative studies of prenatal development of Leydig interstitial cells. (Primates; Rodentia)

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KRUSE, G. Dr.phil., Prof. — Zool. Inst. der Univ., Röntgenring 10, 87 WÜRBURG, W.Germany
—Heiligenberg Inst., 7799 HEILIGENBERG, W.Germany
• Experimentell erzeugte duplicitas cruciata. *Tachycines asymanoros* (*Orthoptera*)
  a
b Keimanlagenbildung und Bi-Diapauses. *Bombyx mori* (*Lepidoptera*)
c Vergleichende Embryonalentwicklung. (*Insecta*)
d Kultur embryonaler Gewebe. (*Insecta*)

KREDIET, P. M.V.D. — Dept. of Anat. and Embryol., Med. Fac. Rotterdam, P.O.Box 1738, ROTTERDAM C 3002, Netherlands
  a Ontogenetic malformations of the heart and great vessels in neonates and adults. (*Mammalia*), *Homo sapiens* (*Primates*)
b Development of the heart and great vessels. (*Aves; Mammalia*), *Homo sapiens* (*Primates*)
c Experimental malformations and regeneration of blood vessels. Same species as b

KREJSA, R. J. Ph.D. — Biol. Sci. Dept., Calif. State Polytechnic Coll., SÁN LUIS OBI weaponry...
  a
b Development and mineralization of scales: role of the epidermis in scale development; light and electron microscopy of developing skin. *Poecilia reticulata*, *Oryzias latipes*, *Salvelinus fontinalis* (*Teleostei*)
  b
  c

  a Sheding of skin. *Congiopodus* spec. (*Teleostei*)

  a
b Variability of egg-capule volumes during development. (*Opisthobranchia. Gastropoda*)

KRITCHMER, N. Ph.D., M.D., Prof. — Dept. of Pediat., Stanford Univ., 300 Pasteur Drive, STANFORD, Calif. 94305, U.S.A.
  a Developmental enzymology: 1. disaccharidases in developing intestine; 2. pyrimidine biosynthesis. *Mus musculus*, *Rattus norvegicus* (*Rodentia*), *Zalophus californianus* (*Pinipedia*)

KRIDER, H. M. Ph.D. — Inst. of Cell. Biol., Univ. of Connecticut, U-125, STORRS, Conn. 06268, U.S.A.
  a Regulation of nucleolar transcription in salivary glands of third instar larvae. *Drosophila* spec. (*Diptera*)

KRISHNAKUMARAN, A. Ph.D., Prof. — Dept. of Biol., Marquette Univ., 530 N. 15th St., MILWAUKEE, Wis. 53233, U.S.A.
  a

  a Asexual reproduction, regeneration, and somatic embryogenesis. *Dugesia tigrina* (*Turbellaria*)

KROGER, H. Dr.Rer.nat., Prof. — Inst. für Genet., Univ. des Saarlandes, 66 SAARBÜCKEN 11, W.Germany
  a Puffing pattems in giant chromosomes and the mechanism by which they are evoked and controlled. *Chironomus thummi*, *Ch. tentans* (*Diptera*)
  b

  a Studies of heterosis: sperm characters, fertilization and cleavage rate in inbred and cross-bred animals. *Mus musculus* (*Rodentia*)

  a Oogenesis and embry development. (Collombola)

  a Nucleic acids of various mutants. *Drosophila melanogaster* (*Diptera*)
  b Isozymes and gut enzymes of the mutant 1(2)me. *Drosophila melanogaster* (*Diptera*)

  a Directing and site of origin of cleaving force. *Triturus pyrhogaster* (*Urodela*)

  a

KUDOKOTSEV, V. P. B.Sc. — Dept. of Biol., Kharkov State Univ., Dzerjinsky Square 4, KHARKOV, U.S.S.R.
  a Experimental investigations in limb regeneration. (*Pisces. Amphibia* and other *Vertebrata*)
Pigmentierung und Musterbildung bei einfachen und Zwillingsfedern. (Aves)

KUIJEN, C. J. van M.Sc. — Zool. Lab., Univ. of Leiden, Kaiserstr. 63, LEIDEN, Netherlands

Functional aspects of development of the vascular system. Rana temporaria (Anura)


Seminal antigens. Homo sapiens (Primates)

KUNZ, W. Dr. — Inst. für Allgem. Biol., Univ. Düsseldorf, Ulenbergstr. 127, 4 DÜSSELDORF, W.Germany

 Nuclear structure (lambrush chromosomes, multiple nucleoli, and extra DNA) of the germinal vesicle in the panoistic ovary. Gryllus domesticus (Orthoptera)

Uptake of haemolymph proteins in the oocyte and its deposition in the yolk platelets. Gryllus domesticus, Locusta migratoria (Orthoptera)

Characterization of germ line limited DNA (density satellite fractions, in situ hybridization). Heteropeza pygmaea (Cecidomyiidae, Diptera)

KUNZ (RASMAY), Mrs. Y. W. Dr.phil. — Zool. Dept., Univ. Coll. Belfield, Stillorgan Rd., DUBLI N 4, Ireland

KÜNZL, E. Dr.med.vet., o.Prof. — Inst. of Vet. Histol. and Embryol., Freie Univ. Berlin, Kosserstr. 20, 1 BERLIN 33, W.Germany

Blood vessels of the placenta. (Proboscidea), Hippopotamus spec. (Artiodactyla)

Differential of fibroblasts in the paraplacenta. Ovis aries (Artiodactyla)

KURIHARA, M. — Inst. of Appl. Entomol., Fac. of Agric., Iwata Univ., Ueda 3-18, MORIO-KA, Japan

Histology and histochemistry of oogenesis. (Insecta)

KURIYAMA, K. Ph.D., Prof. — Dept. of Psychiatry, Downstate Med. Center, State Univ. of New York, KCH, J.Bldg., 450 Clarkson Ave., NEW YORK, Brooklyn, N.Y. 11203, U.S.A.

Developmental changes of amino acid metabolism in brain. Mus musculus, Rattus spec. (Rodentia)

Effect of addictive drugs on the metabolism of developing brain. Mus musculus, Rattus spec. (Rodentia)

KURODA, Y. D.Sc. — Dept. of Morphol. Genet., Natl. Inst. of Genet., Yata 1, 111, MISIMA, Sizuoka-ken, 411 Japan

Gene expression in imaginal disc cells in organ and cell culture. Drosophila melanogaster (Diptera)

Single cell cultivation of embryonic cells carrying some genetic markers. Drosophila melanogaster (Diptera)

Studies on histoformative cell aggregation from dissociated embryonic cells. Gallus domesticus (Aves), Mus musculus (Rodentia)


Effect of antigens on follicular epithelium. Gallus domesticus (Aves)

KÜTTE, H. W. Dr rer. nat. — Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, W.Germany

Determination problems in early development: changes of protein pattern in the yolk system. Dermenus frischi (Coleoptera)

KUUSI, Miss T. K. Ph.D. — Lab. of Exper. Embryol., Dept. of Zool., Univ. of Helsinki, Arkadiankatu 7, HELSINKI 10, Finland

(no embryological work in progress)

KVINKHIDZE (CICISHVILI), Mrs. G. S. — Lab. of Cytol., Inst. of Zool., Acad. of Sci. of Georgian SSR., 31 Chavchavadze Ave., TBLISI 30, U.S.S.R.

Relation between ultrastructure and specific protein synthesis in eye primordium differentiation (autoradiography, organ culture, cytophotometry). Gallus domesticus (Aves)

KVINNSLAND, S. — Inst. of Anat., Univ. of Bergen, Arstadvollen, 5000 BERGEN, Norway

The profile of the foetal face, an anthropological and roentgen anatomical study of the foetal face and cranial base in their sagittal growth processes. Homo sapiens (Primates)

Early spread of ossification of the upper and lower jaws. Same species as a

Growth of the upper jaw after removal of the permanently growing incisors. Rattus spec. (Rodentia)

KVIST, T. N. M.Sc. — 2032 S. 57th St., PHILADELPHIA, Pa. 19143, U.S.A.

In vitro behavior of embryonic chondrocytes in different states of differentiation (morphology, histo- and biochemistry). Gallus domesticus (Aves)

KYÔNO (NAKAGAWA), Mrs. H. M.A. — Embryol. Sect., Biol. Dept., Tokyo Metropolitan Univ., 2-1-1 chome, Fukazawa-machi, Setagaya-ku, TOKYO, 158 Japan
LAALE, H. W. Ph.D. — Dept. of Zool., Univ. of Manitoba, WINNIPEG 19, Man., Canada
LAANE, H. M. — Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTER-
DAM-O., Netherlands
a Light microscopy, electron-microscopy, histochemistry, physiology, and experimental
teratogenesis of heart development in the embryo. Gallus domesticus (Aves), Mus musculus
(Rodentia) (with J. A. ROEST and J. A. LOS)
LAAT, S. W. de M.Sc. — Hubrecht Lab. (Intern. Embryol. Inst.), Uppsalalaan 1, Universi-
teitsscentrum "De Uithof", UTRECHT, Netherlands
a Electrical coupling and membrane permeabilities for cations during early development.
Xenopus laevis, Ambystoma mexicanum (Amphibia)
b Electrophysiology and electron microscopy of the effect of cytochalasin B on the
mechanism of first cleavage. Xenopus laevis (Anura) (with J. G. BLUEMINK)
c Electrophysiology of development. (Acrasiales) (with Th. M. KONIJN)
LABORDUS, V. Ph.D. — Zool. Lab., State Univ. of Utrecht, Janskerkhof 3, UTRECHT,
Netherlands
a The effect of UV-light on cleavage and morphogenesis. Lymnaea stagnalis (Gastropoda)
b Repair processes in eggs after UV-irradiation. Same species as a
LABOUR, G. R. — Lab. de Zool., Centre d'Orsay, Univ. Paris-Sud, 91 ORSAY, France
a Cytology of fat body development, with special reference to cell ultrastructure and
cytochemistry. Leptinotarsa decemlineata (Coleoptera)
LACALLI, Th. C. B.S. — Dept. of Zool., Univ. of British Columbia, VANCOUVER 8, B.C.,
Canada
a Study by laser microbeam of the new spatial patterns generated by irradiation of the
cytoplasm and developing cell wall. Micrasterias rotata, M. denticulata, M. radiata
(Desmidiales) (with A. B. ACTON)
b Possible mathematical models for generating very non-random arrays of microscopic
particles; experimental testing of the models with pore bodies in the cell wall. Same
species as a (with A. B. ACTON)
N.D. 58103, U.S.A.
Agency, Kärntner Ring 11, A-1010 WIEN 1, Austria
LACROIX, J. C. — Lab. d'Embryol., Univ. de Paris VI, 9 quai Saint Bernard, 75 PARIS Ve,
France
a Gene activity in oogenesis: RNA and protein synthesis (lampbrush chromosomes); fate
of oocyte products in embryogenesis. Plerocodeus walatti, P. poireti (Urodela)
b Cytological detection of mutations with lampbrush chromosomes. Same species as a
LA CROIX, L. J. Ph.D., Prof. — Dept. of Plant Sci., Fac. of Agric., Univ. of Manitoba,
WINNIPEG 19, Man., Canada
LADAS, A. Dr. — Inst. für Landwirtsch. Zool. und Bienenk. der Univ., Melbweg, 53 BONN,
W.Germany
a Pathological abnormalities in development, caused by herbicides. Apis mellifera (Hymenop-
tera)
LAFONT, R. D. A. M.S. — Lab. de Zool., Ecole Norm. Supérieure, 46 rue d'Ulm, 75 PARIS
Ve, France
a Differentiation of imaginal wing discs: nucleic acids and pteridine metabolism, changes in
enzyme titers. Pieris brassicae (Lepidoptera)
b Action of 5-fluorouracil (5-FU) and other chemical agents on the development of imaginal
discs. Same species as a
of the U.S.S.R., Baltiyskaya St. 8, MOSCOW 125315, U.S.S.R.
a Electron microscopy of gonocytes and oogonia in the embryo. Homo sapiens (Primates)
LAHTI, A. — Lab. of Exper. Embryol., III. Dept. of Pathol., Univ. of Helsinki, Haartmanin-
katu 3, HelsINKI 29, Finland
a Drug-induced teratogenesis in vitro. Mus musculus (Rodentia) (with L. O. SAXEN
and I. KAITILA)
LAIF-FOOK, Miss J. E. I. Ph.D. — Dept. of Zool., Univ. of Toronto, 25 Harbord St.,
TORONTO 5, Ont., Canada
a Fine structure of haemocytes during the moult/intermoult cycle. Galleria mellonella,
Calpodes ethlius (Lepidoptera)
b Fine structure and histochemistry of developing dermal glands. Rhodnius prolixus
(Hemiptera), Calpodes ethlius (Lepidoptera)
LAIRD, C. D. Ph.D. — Dept. of Zool., Univ. of Washington, SEATTLE, Wash. 98105,
U.S.A.
a Relationship between developmental patterns and genome organization. (Insecta; Tunicata;
Mammalia)
b Developmental genetics of linked genes; correlation of gene expression with karyotype
arrangement. Drosophila melanogaster (Diptera)
LAKSHMANAN, K. K. Ph.D., Prof. — Dept. of Bot., Pachaiyappa's Coll., MADRAS-30,
India
a Descriptive and experimental embryology. *Cyclamen* spec., *Rhizophora* spec., *Gibba* spec. (*Angiospermae*)
b Embryogenesis. *Luzula* spec. (*Juncaceae*)
c Irregular embryogenesis and its possible correlation with embryo differentiation in tissue culture. *Corydalis* spec. (*Papaveraceae*)

**LAKSHMANAN, S.** B.S. — Dept. of Anat., Jawaharlal Inst. of Postgrad. Med. Educ. and Research, PONDICHERRY-6, India

a Effect of vascular occlusion on seminiferous epithelium cycle in the testis. *Mus musculus* (*Rodentia*)
b Assessment of gestational age of the new-born by amniotic fluid cytology. *Homo sapiens* (*Primates*)


a Morphogenetic effects of follicle-stimulating hormone. *Gallus domesticus* (*Aves*) (with G. V. SHERBET)
b Behaviour of neoplastic cells transplanted into embryos. *Gallus domesticus* (*Aves*) (with G. V. SHERBET)
c Biochemical and biophysical characterization of the cell surface using natural pH gradients. (with G. V. SHERBET)

**LALLIER, R. A.** Dr.Sc. — Station Zool., Fac. des Sci. de Paris, 06 VILLEFRANCHE-sur-MER, France

a Biochemical aspects of embryonic determination (studies of animalizing and vegetalizing agents). *Paracentrotus lividus* (*Echinoidea*)

**LAMMERS, G. J.** Med.drs. — Dept. of Anat. and Embryol., Univ. of Nijmegen, Geert Grootenplein N. 21, Nijmegen, Netherlands

a The development of some basal telencephalic areas. *Cricetus barabensis griseus* (*Rodentia*)


— private address: 16 Highgate Ave., LONDON N.6, England

a A causal analysis of teratogenic action of various chemical compounds. *Gallus domesticus* (*Aves*)
b The nature and significance of phenocopies. *Gallus domesticus* (*Aves*)
c Tests of teratogenic action of herbicides. *Gallus domesticus* (*Aves*)
d The nature of dimethylsulfoxide as solvent in tests with teratogens. *Gallus domesticus* (*Aves*)

**LANDESMAN, R.** Ph.D. — Dept. of Zool., Univ. of Vermont, BURLINGTON, Vt. 05401, U.S.A.

**LANDSTRÖM, U.** — Dept. of Zoophysiol., Univ. of Umed, S 901 87 UMEA, Sweden

a Oxygen uptake during embryogenesis. *Tubifex* spp. (*Oligochaeta*) (with S. LÖVTRUP)

**LANG, A.** Ph.D., Prof. — MSU/AEC Plant Research Lab., Michigan State Univ., EAST LANSING, Mich. 48823, U.S.A.

a Hormone physiology. (*Plantae*)
b Physiology of flowering. *Hyoscyamus niger* (*Solanaceae*) and other spp.

**LANGMAN, J.** M.D., Ph.D., Prof. — Dept. of Anat., Med. School, Univ. of Virginia, CHARLOTTESVILLE, Va. 22901, U.S.A.

a Autoradiography and immunology of muscle development in vivo, and of brain development under normal and abnormal conditions. *Gallus domesticus* (*Aves*). (*Rodentia*)


a Malformations axiales: analyse causale de l’action tératogène du bleu trypan et de la RNA-se. *Gallus gallus* (*Aves*)

**LARINK, O.** Dr. — Zool. Inst. der Techn. Univ., Pockelsstr. 10a, 3300 BRAUNSCHWEIG, W.Germany

a Cleavage and organogenesis. *Ophryotrocha* (*Polychaeta*)

Embryology. (*Lepismatidae; Machilidae, Thysanura*)


**LARRIVEE, D. H.** M.A — Dept of Zool., Univ of British Columbia., VANCOUVER 8, B.C., Canada

a Molecular and cellular aspects of arm formation in larvae. *Strongylocentrotus droebachien-
sis*, *S. purpuratus*, *S. franciscanus* (*Echinoidea*) (with C. V. FINNEGAN)

**LARSSON, K. S.** Odont. D., Prof. — Lab. of Teratol., Karolinska Insit., S-104 01 STOCK- HOLM 60, Sweden

a Chemical interaction with mucopolysaccharide synthesis during embryogenesis and fetal development. *Mus musculus*, *Rattus norvegicus* (*Rodentia*)
b Experimental developmental morphology: studies on facial formation. *Mus musculus*, *Rattus norvegicus* (*Rodentia*)
c Transplantation of fertilized ova. *Mus musculus* (*Rodentia*)
Ph.D. Differenciation 
The Homo Ph.D. 
Comb Croissance 
Organogenesis 
Cytology 
Embryology 
Mrs. 
Regulation 
Comb 
Histochemistry 
Modifications 
DNA 
Experiments 
Developmental 
E. 
Effects 

LAVERDURE, a

LAVELLE, b

LAUFER, a

LATSHAW, b

LAUFER, b

LAUAU, b

LAUGE, Miss G. Drès Sci. — Lab. d'Entomol. et d'Ecol. Expér., Centre d'Orsay, Univ. Paris-Sud, 91 ORSAY, France

a Experiments on determination and differentiation of genital apparatus, triploid intersexes. Drosophila melanogaster (Diptera)
b Cytotology of agametic gonads after U.V. irradiation during the polar cells stage. Same species as a
c Modifications of gonad development by thermal stress. Same species as a


a DNA content and nuclear size in somatic and germinal tissues and the differentiation of tissues related to the ratio DNA/nuclear size; somatic polyploidy in some tissues. Bufo paracnemis (Anura)

LAVRACK, J. O. Ph.D. — School of Anat., Univ. of Melbourne, PARKVILLE 3052, Vict., Australia

a Histochemistry of cell interactions in the development of primary tissues. Gallus gallus (Aves)

LaVELLE, A. Ph.D., Prof. — Dept. of Anat., Coll. of Med., Univ. of Illinois P.O.Box 6998, CHICAGO, III. 60680, U.S.A.

LaVELLE, C. L. B. Ph.D. — Dept. of Oral Pathol., Dental School, St. Mary's Row, BIRMINGHAM B4 6NN, England

a Embryology of the skull and of dental cusp pattern. Rattus norvegicus (Rodentia), Homo sapiens (Primates)

LaVELLE (WILSON), Mrs. F. Ph.D. — Dept. of Anat., Univ. of Illinois, P.O.Box 6998, CHICAGO, III. 60680, U.S.A.

LAVERDURE, Miss A.-M. — Lab. de Biol. Anim., Fac. des Sci., Univ. Paris Sud, 91 ORSAY, France

da Différenciation de la gonade femelle et vitellogenèse. Tenebrio molitor (Coleoptera)


LAWRENCE, I. E. Jr. Ph.D., Prof. — Dept. of Biol., East Carolina Univ., Box 2577, GREENVILLE, N.C. 27834, U.S.A.

a Comb development. Gallus domesticus (Aves)

1. Development of the feathered crest fowl's comb primordium in an experimentally altered position.
2. Histochemical patterns and hormonal influence on comb tissue development.
3. Electrophoretic analysis of comb protein.
4. Changing patterns in development of the normal single comb between 4½ and 9 days incubation.
5. Analysis of the epidermal-dermal junction in reciprocal 8 day comb and non-comb tissue grafts.
6. Analysis of comb tissue interactions in graft recombination (heteroplastic combinations of dermis and epidermis) of the wyandotte (dominant rose comb) and the white leghorn (recessive single comb).

b Comb and beak malformation resulting from removal of neural crest between stages 7-9. Gallus domesticus (Aves)


a The development of bristles; in particular factors controlling their position and their initiation. Oncopeltus fasciatus (Heteroptera)
b Developmental genetics. Oncopeltus fasciatus (Heteroptera)
c Positional information and polarity in the epidermal cells. *Rhodnius prolixus* (Heteroptera)
d Clonal analysis of segment growth. *Onchopelus fasciatus* (Heteroptera)

**LAWSON, Miss K. A. Ph.D. — Hubrech Library (Intern. Embryol. Inst.), Uppsalalaan 1, Universitetscentrum "De Uithof", UTRECHT, Netherlands**
a Morphogenetic and growth control of salivary glands in *vitro* (Rodentia).
b Proportionate development of the appendicular skeleton and the action of thyroid hormones in *vitro*. *Gallus domesticus* (Aves)

**LAYTON, W. M. M.D. — Prof. — Dept. of Pathol., Dartmouth Med. School, HANOVER, N.H. 03755, U.S.A.**
a The morphogenesis of the teratogenic action of carbonic anhydrase inhibitors. *Mesocricetus auratus* (Rodentia)
b Limb morphogenesis. *Ambystoma maculatum* (Urodela), *Mesocricetus auratus*, *Rattus norvegicus* (Rodentia)

**LAZARD (HAUBEN), Mrs. L. Dr.es Sci. — Inst. d'Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France**
a Limb regeneration after x-irradiation, and grafts of various tissues and organs. *Ambystoma mexicanum* (Urodela)

**LEACH, C. M. Ph.D. — Prof. — Dept. of Bot. and Plant Pathol., Oregon State Univ., CORVALLIS, Ore. 97331, U.S.A.**
a Light induction of reproduction in phytopathogenic species. *(Fungi)*
b Nature of sporogenic substances "P₃₁₀" associated with spore formation. *(Fungi)*
c Interaction of light and temperature on the induction of reproduction. *(Fungi)*

a Transcripitive activity of chromatin. *Drosophila melanogaster* (Diptera)

**LEBLOND, C. P. M.D., Ph.D. — Prof. — Dept. of Anat., Med. School, McGill Univ., MONTREAL 2, Que., Canada**
a Development of the thyroid gland. *(Vertebrata)*
b The development of bones and teeth as shown on radioautographs with the help of various labeled substances. *(Vertebrata)*

a Histo- and biochemistry of hydrolyases during head regeneration (lysosomal fractions in activation and morphogenesis). *Eisenia fetida* (Oligochaeta)
b Interdependence between protein and ribonucleic acid synthesis during activation and before mitosis in regeneration. Same species as a

**LE DOUARIN, G. H. Dr.es Sci. — Lab. de Physiol. Anim. et Cell., Univ. de Nantes, 38 Bd. Michelet, B.P. 1044, 44 NANTES, France**

**LE DOUARIN (CHAUVAC), Mrs. N. M. Dr.es Sci., Prof. — Lab. d'Embryol. Univ. de Nantes, 38 Bd. Michelet, B.P. 1044, 44 NANTES, France**
a Etude expérimentale du développement du tube digestif et du foie. *Gallus gallus* (Aves)
b Différenciation biochimique des hépatocytes. *Gallus gallus* (Aves)
c Expériments sur la différentiation de la glande thyroïde et de la hypophyse. *Gallus gallus* (Aves)
d La migration et la différenciation des cellules des crêtes neurales (greffes interspécifiques). *Coturnix japonica. Gallus gallus* (Aves)

**LEDOUX, L. D.Sc. — Lab. de Biochim. Cell., Dépt. de Radiobiol., Centre d'Etude de l'Énergie Nucléaire, 2400 MOL, Belgium**
a Uptake, fate, and biological effect of exogenous DNA in living systems, with special attention to embryonic and cancer tissues. *Hordeum spec.*, *Arabidopsis spec.* *(Angiospermae)*, *Gallus spec.*, *Mus spec.* (Rodentia)

**LEE, H. H. Ph.D. — Dept. of Biol., Univ. of Toledo, TOLEDO, Ohio 43606, U.S.A.**

**LEENDERS, H. J. Dr. — Zool. Lab., Dept. of Cell Biol., Univ. of Nijmegen, Driehuizerweg 200, NIJMEGEN, Netherlands**
a The mechanism of gene activation by factors involved in the electron transfer system; experimental puff induction. *Drosophila hidetii* (Diptera)

**LEES, A. D. Sc.D., F.R.S. — Imperial Coll., Field Station, Silwood Park, ASCOT, Berks., England**
a Control of polymorphic development with special reference to environmental factors. *Megoura viciae* (Aphididae, Homoptera)

**LEeson, C. R. M.D., Prof. — Dept. of Anat., Coll. of Med., Univ. of Missouri, COLUMBIA, Mo. 65201, U.S.A.**
a Postnatal development of the liver, with reference to hepatocyte morphology and hematopoietic activity. *Oryctolagus cuniculus* (Lagomorpha)
b Postnatal development of muscle with emphasis on the ultrastructure of the mitochondrial population. *Sus domesticus* (miniature) *(Artiodactyla)*

**LEFFINGWELL, T. P. Ph.D. — Cell Res. Inst., B.L. 220, Univ. of Texas, AUSTIN, Tex. 78712, U.S.A.**

**LEFFORD (FERNANDO), Mrs. F. Ph.D. — Dept. of Anat. and Embryol., Univ. Coll. London, Gower St., LONDON WC1E 6BT, England**
a Effects of donor age on cell behaviour in tissue and organ culture. *Gallus domesticus* (Aves)

LEFRESNE, J. Maitre ès Sci. — Lab. d'Embryol., Unité de Sci., Univ. de Caen, 14 CAEN, France

a Etude expérimentale de la segmentation. *Ambystoma mexicanum* (Urodela)

LEGAY, J. M. Dr.ès Sci., Prof. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France

a Postembryonic development in relation to parental generation and selection. *Bombyx mori* (Lepidoptera), *Ceratitis capitata* (Diptera)

LEGENDRE, R. Dr.ren.bat., Dr.ès Sci., Prof. — Lab. de Zool. II, (Morphol. et Ecol.), Univ. des Sci. et Techn. du Languedoc, Place Eugène Bataillon, 34 MONTPELLIER, France

b Embryonic and post-embryonic development. (Araneida, Arachnida)

LEGHISSA, S. Ph.D., Prof. — Ist. di Anat. Comp., Univ. di Bologna, Via Belmeloro 8, BOLOGNA (103), Italy

b Respiratory metabolism. *Bufo arenarum* (Anura)

b Mitochondria during embryogenesis. *Bufo arenarum* (Anura)

LEGNAME, A. H. Dr.Biochem. — Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S.M. de TUCUMAN, Argentina

a Nuclear transplantation (early stages until neurlulation): 1. haploid and diploid nuclei; 2. electrophoretic analysis of proteins. *Bufo arenarum* (Anura)


LEGRAND, Miss C. — Inst. Natl. de la Santé et de la Rech. Méd., Unité de Physiol. Placent., Hôp. Saint-Antoine, 184 rue du Faubourg Saint-Antoine, 75 PARIS XIIe, France

LEHMANN, H. E. Ph.D. — Dept. of Zool., Univ. of North Carolina, CHAPEL HILL, N.C. 27514, U.S.A.

LEHMANN, R. Dr.ren.bat. — Biol. Inst. I (Zool.) der Univ., Katharinenstr. 20, 78 FREIBURG, W.Germany

a Influence of temperature, pH and some metabolites on differentiation of fine structure and histochemistry of embryonic cells. *Triturus alpestris* (Urodela)

b Effects of polyns and ions on differentiation: localization of ions in embryonic cells on electron microscopic level under normal and experimental conditions. *Triturus alpestris*, *T. helveticus* (Urodela), *Xenopus laevis* (Anura)

LEIGHTON, J. M.D., Prof. — Dept. of Pathol., Sch. of Med., Univ. of Pittsburgh, PITTSBURGH, Pa. 15213, U.S.A.

LEIKOLA, A. H. A. Ph.D. — Lab. of Exper. Embryol., Dept. of Zool., Univ. of Helsinki, Arkadiankatu 7, HELSINKI 10, Finland

a Primary induction. *Gallus domesticus* (Aves)

LELIEVRE, Miss C. S. — Lab. d'Embryol., Univ. de Nantes, 38 Bd. Michelet, B.P. 1044, 44 NANTES, France

a Etude expérimentale de la différenciation des cellules à calcitonine. *Gallus gallus*, *Coturnix c. japonica* (Aves)

b Origine embryologique des arcs viscéraux (greffes interspécifiques). Same species as a

LEMEEZ, L. MUDr. — Dept. of Anat., Charles Univ., U nemocine 3, PRAHA 2, Czechoslovakia

a Embryonal haematology. *Gallus domesticus* (Aves)

b Experimental toposgenesis and morphology of the pneumogastric system. *Gallus domesticus* (Aves)

LE MOIGNE, A. — Lab. de Biol. Anim., Fac. des Sci., Univ. Paris Sud, 91 ORSAY, France

a Développement embryonnaire (microscopie électronique). (Planariidae, Turbellaria)

LEMTIS, H. G. Dr.med., Prof. — Dept. of Obstet and Gynecol., Klin. Steglitz, Free Univ. Berlin, Hindenburgdamm 30, I BERLIN 45, W.Germany

a The passage of drugs across the placenta studied in an artificial uterus. *Homo sapiens* (Primates)

b Reaction of the fetal vascular system of the placenta to morphine and similar substances. Same species as a

LENDEER, Th. Prof. — Lab. de Biol. Anim., Fac. des Sci., Univ. Paris Sud, 91 ORSAY, France

a Régénération: substances inductrices et inhibitrices. (Planariidae, Turbellaria)

b Microscope électronique de la régénération, en particulier des néoblastes. *Dugesia gono-ccephala* (Turbellaria)

c Neurosécrétion. (Planariidae, Turbellaria)

d Régénération. *Asterina gibbosa* (Asteroidea)

e Culture in vitro d'organes larvaires. *Galleria spec.* (Lepidoptera), *Periplaneta spec.* (Blattariae)

f Culture in vitro de gonades femelles. *Tenebrio molitor* (Coleoptera)
a Spina bifida: 1. production by trypan blue; 2. autoradiography of the tissues primarily affected by trypan blue; 3. associated paralytic limb deformities; 4. associated primary renal tract deformities. *Rattus norvegicus* (Rodentia)

LENOFF, H. M. Ph.D., Prof. — Dept. of Developm. and Cell Biol., Univ. of California, IRVINE, Calif. 92664, U.S.A.
a Chemistry, biosynthesis, and topography of mesoglea. *Hydra littoralis, H. pseudoligactis* (Hydrozoa)

LENHOFT, R. Ph.D. — Dept. of Developm. and Cell Biol., Univ. of California, IRVINE, Calif. 92664, U.S.A.

LENICQUE, P. M. Dr.ès Sci. — Lab. de Biol. des Invert. Marins, Museum Natl. d'Hist. Nat., 57 rue Cuvier, 75 PARIS Ve, France

LENSKY, Y. Ph.D. — Bee Lab., Dept. of Entomol., Fac. of Agric., Hebrew Univ. of Jerusalem, P.O.Box 12, REHOVOTH, Israel
a Changes in haemolymph proteins during metamorphosis. *Apis mellifera* var. *ligustica* (Hymenoptera)
b Separation, characterization and identification of haemolymph proteins, in three castes. *Apis mellifera* (Hymenoptera)
c Distribution of blood antigens in fluid compartments and tissues of developing and adult animals, using immuno-chemical and biochemical analysis. *Apis mellifera* (Hymenoptera)
d Moulting behaviour, resorption of moulting fluid and its protein composition during the larval-pupal transformation. *Apis mellifera* (Hymenoptera)
e The ultrastructure of drone spermatozoa and their position in male and female storage organs. *Apis mellifera* (Hymenoptera)

LENZ, W. Dr.med., Prof. — Inst. für Humangenetik, Westf. Wilhelms Univ., Vesaliusweg 12-14, 44 MÜNSTER, W.Germany
a Analysis of thalidomide embryopathy in relation to time of intake. *Homo sapiens* (Primates)
b Nosology and genetics of limb malformations (register for skeletal defects). *Homo sapiens* (Primates)

LEONARD, A. Ph.D. — Lab. de Génét., Dépt. de Radiobiol., Centre d'Etude de l'Energie Nucléaire, 2400 MOL, Belgium
a Study of chromosome aberrations induced by X-irradiation in *uter o*. *Mus spec.* (Rodentia)

LEONE, V. M.D. — Cat. di Embriol. e Morfol. Sperim., Univ. di Milano, Via Celoria 10, 20133 MILANO, Italy

LEONIENI, J. Dr. — Dept. of Histol. and Embryol., Acad. of Med., ul. Narutowicza 60, ŻÓDŻ, Poland
a Comparative histology, histochemistry, and electron microscopy of the development, structure, and function of the subcommisural organ. (Mammalia), *Homo sapiens* (Primates)

a Cytochemistry of developing reproductive structures. *Musca domestica* (Diptera)
b In *vivo* and in *vitro* investigation of cuticle deposition during leg regeneration. *Leucophaea maderae* (Blattariae)

LE PATOUREL, Mrs. C. M. B.Sc. — Dept. of Anat. and Embryol., Univ. Coll. London, Gower St., LONDON WC1E 6BT, England
a Protein synthesis during primary embryonic induction. *Xenopus laevis* (Anura)

LEPORI, N.G. Prof. — Ist. di Zool., Univ. di Sassari, Via Murroni 25, 07100 SASSARI, Italy
a Origin of the asymmetry of the female gonad (blastoderm in *vitro*). (Aves)
b Origin of asymmetrical heart development (blastoderm in *vitro*). *Gallus* spec., *Anas* spec. (Aves)

LESCHER-MOUTOUÉ, Miss F. — Lab. Souterrain du C.N.R.S., 09 MOULIS, France

LESH, Miss G. E. Ph.D. — Developm. Biol. Center, Case Western Reserve Univ., 2127 Cornell Rd., CLEVELAND, Ohio 44106, U.S.A.

LESPINASSE, R. Dr. 3e cycle — Lab. de Zool., Centre d’Orsay, Univ. Paris-Sud, 91 ORSAY, France
a Cytoiology and genetics of the effects of supernumerary chromosomes. *Locusta migratoria* (Orthoptera)

a Ultrastructure of cell surface (embryonic liver, heart, neural retina, limb bud). *Gallus domesticus* (Aves)
LINDENMAYER, A. Ph.D., Prof. — Central Interfaculty, Univ. of Utrecht, Heidelberglaan 2, "De Uithof", UTRECHT, Netherlands

a Computer simulation of the development of branching filaments. (Algae; Fungi)
b The morphogenetic processes giving rise to phyllotactic patterns of the shoot apex. (Pteridophyta; Spermatophyta)
c Developmental instructions for cellular interactions and divisions considered from the point of view of automata and language theory

LINDSAY, D. T. Ph.D., Prof. — Dept. of Zool., Univ. of Georgia, ATHENS, Ga. 30601, U.S.A.
a Developmental regulation of chromosomal histone synthesis in the embryo. Strongylocentrotus purpuratus (Echinoidea)

LINDELEY, D. L. Ph.D., Prof. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.
a Genetic control of gametogenesis. Drosophila melanogaster (Diptera)

LIOSNER, L. D. Dr.biol.sci. — Inst. of Human Morphol., Acad. of Med. Sci. of the U.S.S.R., Baltiyskaya St. 8, MOSCOW 125315, U.S.S.R.
a Mechanisms controlling the restoration of inner organs. Rattus norvegicus, Mus musculus (Rodentia)

LIOTTI, F. S. Dr., Prof. — Ist. di Biol. Gener., Univ. di Perugia, Via del Giochetto, 06100 PERUGIA, Italy
a Sviluppo dei meccanismi eritropoietici durante la vita neonatale. Ortyctolagus cuniculus (Lagomorpha)

LISSIA (FRAU), Mrs. A. M. Dr. — Ist. di Zool., Univ. di Sassari, Via Murroni 25, 07100 SASSARI, Italy
a Gonadogenesis and sexual differentiation in hermaphroditic forms. Diplopus vulgaris, Boops salpa, B. boops, Lythognathus mormyrus (Sparidae, Teleostei)

LIVERIDGE, R. A. Ph.D., Prof. — Ramsey Wright Zool. Labs., Dept. of Zool., Univ. of Toronto, 25 Harbord St., TORONTO 5, Ont., Canada
a In v i v o and i n v i t r o studies on the influence of nerves and endocrines in regeneration. (Amphibia)

a Histochemistry of gonad differentiation. Gallus domesticus (Aves)

LIZARDI, P. M. — Dept. of Embryol., Carnegie Inst. of Washington, 115 W.University Parkway, BALTIMORE, Md. 21210, U.S.A.

LOBO, J. F. Ph.D. — Cell Research Lab., Dept. of Zool., N.Wadia Coll., POONA-1, India
a Alkaline phosphatase and mucopolysaccharides in eggs and larvae (histochemistry). Betta splendens (Teleostei)
b Phospholipids and non-specific esterases in eggs and larvae (histochemistry). Rana tigrina (Anura)
c Enzymes and mucopolysaccharides in the prothallus (histochemistry). Pteris aquilina (Filicinaceae) (with A. M. C. MENEZES)

LOCCI, Miss P. Dr.biol.sci. — Inst. of Histol. and Gen. Embryol., Univ. of Perugia, Via del Giochetto, 06100 PERUGIA, Italy
a Immunochemical and chromatographical research on transfer of albumen and yolk proteins into embryo. Gallus domesticus (Aves)

LOCKE, M. Ph.D., Prof. — Dept. of Zool., Univ. of W.Ontario, LONDON 72, Ont., Canada

LOCKSHIN, R. A. Ph.D. — Dept. of Physiol., Univ. of Rochester, 260 Crittenden Blvd., ROCHESTER, N.Y. 14620, U.S.A.
a Metamorphosis, especially biochemistry and neurophysiology of tissue breakdown. Antheraea polyphemus (Saturniidae), Manduca sexta (Spinnigidae, Lepidoptera)
b Maintenance of isolated organs i n v i t r o. Same species as a

LOEFFLER, C. A. Ph.D. — Dept. of Zool., Univ. of Arkansas, FAYETTEVILLE, Ark. 72701, U.S.A.

LOEBFEL, K. Ph.D., Prof. — Dept. of Zool., Univ. of Rochester, 260 Crittenden Blvd., ROCHESTER, N.Y. 14620, U.S.A.
a Electron microscopy of the process of neurulation. Ambystoma mexicanum (Urodela), Ciona intestinalis, Clavelina lepidoformis (Ascidiaeae)

LOHMANN, K. Dr.rer.nat. — Zool. Inst. der Univ., Weyertal 119, 5 KOLN 41, W.Germany
a Cytochemistry and biochemistry of gene amplification connected with differentiation processes in early development. Triturus vulgaris (Urodela)
b Generation time and changes in the cell cycle of embryonic cells. Same species as a

LOKHOIT, Miss W. — Lab. of Vet. Physiol., State Univ. of Utrecht, Alex. Numankade 93, UTRECHT, Netherlands

LOMBARD (DES GOUTTES), Mrs. M. N. Dr.es Sci. — Lab. d’Histophysiol., Coll. de France, 4 av. Gordon Bennett, 75 PARIS XVII, France
a Development of interactions between pituitary, pineal, and gonads in vitro. *Mus musculus* (Rodentia)

b Induction of kidney tubules in metanephrogenetic mesenchyme. *Mus musculus, Rattus norvegicus* (Rodentia)

c In vitro response of fetal Leydig cells to purified follicle stimulating hormone; loss of this response during postnatal development in relation with maturation of hypothalamic neurones controlling the secretion of interstitial cell stimulating hormone. Same species as b

d Presence in the embryonic male gonad of Δ5-3β-hydroxysteroid dehydrogenase at the initial steps of testis morphogenesis; later apparition of this enzyme in the well differentiated ovary; possible effects of an inhibitor of the enzyme at different developmental stages. Same species as a

LOMBARD, F. Dr.Biol.Sci. — Ist. di Anat. Comp., Univ. di Modena, Via Berengario 14, 41100 MODENA, Italy

a Regeneration of the retina in young animals. *Carassius auratus* (Teleostei)

b Regeneration of neural retina. *Locaerta muralis, L. viridis* (Locertilia)

LONDON, J. M.Sc. — Dept. of Embryol. and Teratol., Tel-Hashomer Hosp., TEL-AVIV, Israel

LONGENECKER, B. M. Ph.D. — Dept. of Zool., Fac. of Sci., Univ. of Alberta, EDMONTON, Alta., Canada


e Effect of meiotic state at moment of insemination on pronuclear development and association (light and electron microscopy). *Asterias forbesi* (Asteroidea), *Spisula solidissima, Mytilus edulis* (Lamellibranchia)

effect of maternal cytoplasm on pronuclear development and association. *Arbacia punctulata, Lytechinus variegatus* (Echinoidea)

c Effect of supernumerary male and female pronuclei on pronuclear development and association, i.e., investigation of heteroploidy, polyandry and polygyyny. *Spisula solidissima* (Lamellibranchia), *Oryctolagus cuniculus* (Lagomorpha), *Mus musculus, Rattus norvegicus* (Rodentia)

LOOMIS, W. F., Jr. Ph.D. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.

a A biochemical and genetic investigation of the mechanisms of development. *Dictyostelium discoideum* (Acrasiales)

LOPASHOV, G. V. Dr.biol.sci., Prof. — Inst. of Developm. Biol., Acad. of Sci. of the U.S.S.R., Vavilov St. 26, MOSCOW 117133, U.S.S.R.


b Metaplastic potentials of embryonic and larval eye for lens and retina regeneration. *Leuciscus berghi, Anoptichthys jordani* (Teleostei) (with A. A. SOLOGUB)

c Stimulation of metaplasia of the pure pigmented epithelium of adults into retina by means of agents from larval (or embryonic) retina. *Mus musculus* (Rodentia) (with A. A. SOLOGUB)

d Determination of the site of formation of the falciform process by means of creation of additional choroid fissures. *Leuciscus berghi* (Teleostei)


LOS, J. A. M.D. — Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O, Netherlands

a Light microscopy, electron microscopy, histochemistry, physiology, and experimental teratogenesis of heart development in the embryo, *Gallus domesticus* (Aves), *Mus musculus* (Rodentia) (with H. M. LAANE and J. A. ROEST)

LOSEVA, Mrs. L. M. — Dept. of Embryol., Leningrad State Univ., Mendeleevsky St. 5, LENINGRAD V-164, U.S.S.R.

a Oogenesis and embryonic development. *Tealta crassicoeniris, Metridium senile, Bunodactis stella* (Actinzoa)

LOUVET, J.-P. Dr.Biol.anim. — Lab. de Zool. Expér., Univ. de Bordeaux I, Av. des Facultés, 33 TALENCE, France

a Recherches descriptives et expérimentales sur la formation de la bandelette embryonnaire. *Carassius spec.* (Phasmida)

b Neurogénese. Same species as a

c Ultrastructure du développement des pleuropodes. Same species as a


a Chemistry of developing muscle. *Gallus domesticus* (Aves)
b Endocrine regulation of carbohydrate and nucleic acid metabolism in embryonic muscle. *Gal/us domesticus (Aves)*

LOVTRUP (REIN). Mrs. H. Fil.lic. — Dept. of Zoophysiol., Univ. of Umeå, S 901 87 UMEA, Sweden

a Nuclear RNA metabolism during early embryogenesis. *Lytechinus variegatus* (Echinoidea)

LOVTRUP, S. Dr.Phil., Prof. — Dept. of Zoophysiol., Univ. of Umeå, S 901 87 UMEA, Sweden

a Permeability and osmoregulation. Rana spp. (Anura) (with K. HANSSON MILD)

b Cell transformation and cell differentiation. Rana spp. (Anura). *Gal/us domesticus (Aves)*

c Oxygen uptake during embryogenesis. *Tubifex* spp. (Oligochaeta) (with U. LANDSTROM)


LOWERY, R. S. Ph.D. — Dept. of Biol., City of London Polytechnic, 31 Jewry St., LONDON EC3N 2EY, England

a Relationship between DNA synthesis, mitosis, and differentiation during induction. *Xenopus laevis* (Anura)


a Genetics and physiology of sex differentiation. *Cucumis melo* (Cucurbitaceae)

b Genetics and physiology of dwarfism. *Citrusillus lanatus* (Cucurbitaceae)

LUCAS, J. S. Ph.D. — Dept. of Zool., School of Biol. Sci., James Cook Univ. of North Queensland, P.O.Box 999, TOWNSVILLE, Qld. 4810, Australia


a Film of normal development. *Gallus domesticus (Aves)*

b Technique of in vitro culture of embryo; descriptive material covering first 72 hours of development in vitro. *Gal/us domesticus (Aves)*

c Film showing nuclear transfer technique. (Amphibia)


LUNDGREN, B. T. fil.kand. — Wenner-Gren Inst., Norrteulgatan 16, S-113 45 STOCKHOLM, Sweden

a Changes of cell contact during development (electron microscopy). (Echinoidea)

b Distribution of exogenous biogenic amines in embryos (high resolution autoradiography). (Echinodermata)


a Uptake and fate of exogenous DNA. 1. in cultured explants from embryos. *Gal/us domesticus (Aves)*. 2. in embryos perfused with DNA solutions. *Rattus* spec. (Rodentia)

b Interaction between exogenous DNA and nuclei isolated from embryonic liver: use of exogenous DNA as a substrate for nuclear DNA synthesis.

LUSE, Miss S. A. † M.D. — Dept. of Anat. Columbia Univ., NEW YORK, N.Y. 10032, U.S.A.

LUTWAK (MANN), Mrs. C. M.D., Ph.D. — A.R.C. Unit of Reprod. Physiol. & Biochem., Anim. Res. Station, 307 Huntingdon Rd., CAMBRIDGE CB3 0JQ, England

a Physiology and biochemistry of thea early embryo. *Rattus rattus* (Rodentia), *Oryctolagus cuniculus* (Lagomorpha)

b Teratology. Same species as a

LUTZ, H. Dr.es Sci., Prof. — Lab. de Biol. Anim., Univ. de Clermont. B.P. 45, 63 AUBIÈRE, France

a Développement du blastoderme pendant les premières heures de l'incubation. *Anas* spec. (Aves)

b Culture in vitro du blastoderme. (Aves) (avec Mrs. Y. LUTZ-OSTERTAG)

c Formation de l'entoblaste. (Aves)

d La polyembryonie expérimentale; l'orientation des embryons. (Aves)

e Polyembryonie expérimentale. (Salmonidae, Teleostei) (avec Mrs. Y. LUTZ-OSTERTAG)

f Action des ultra-sons sur l'embryon et sur différents organes. *Gallus* spec. (Aves) (avec Mrs. Y. LUTZ-OSTERTAG)

(g) Action des pesticides sur le développement de l'embryon. (Aves)

h Free-martinisme spontané. (Aves) (avec Mrs. Y. LUTZ-OSTERTAG)

LUTZ-OSTERTAG, Mrs. Y. Dr.es Sci. — Lab. de Biol. Anim., Univ. de Clermont, B.P. 45, 63 AUBIÈRE, France

a La genèse de l'asymétrie du tractus génital et la régression des canaux de Müller par la méthode d'explantations. *Gallus* spec. (Aves)
b Rôle des hormones dans la différenciation primaire du sexe. Gallus spec., Coturnix coturnix (Aves)
c Polyembryonie expérimentale. (Salmonidae, Teleostei) (avec H. LUTZ)
d Action des ultra-sons sur l'embryon et sur différents organes. Gallus spec. (Aves) (avec H. LUTZ)
e Culture in vitro du blastoderme. (Aves) (avec H. LUTZ)
f Free-martinisme spontané. (Aves) (avec H. LUTZ)
g Hybridation. Anas spec. (Aves)
h Action des pesticides sur le développement de l'embryon. (Aves)
LYMAN, H. Ph.D., Prof. — Dept. of Biol. Sci., State Univ. of New York at Stony Brook, STONY BROOK, N.Y. 11790, U.S.A.
a Control mechanisms of chloroplast development and replication. Euglena gracilis (Euglenophyceae)
a Development of skin and hair. Trichosurus vulpecula, Perameles nasuta (Marsupialia)
h Structure and development of epidermis, hair follicles, and associated glands. Ovis spec. (Artiodactyla)
LYNN, W. G. Ph.D., Prof. — Biol. Dept., Grad. School of Arts and Sci., The Catholic Univ. of America, WASHINGTON, D.C. 20017, U.S.A.
a Melanogenesis and melanin turnover. Xenopus laevis, Rana sylvatica, R. pipiens (Anura)
b Skin development and ecysis. Sceloporus occidentalis (Lacertilia), Chionactis occipitalis (Ophidia)
LYONS, Miss K. M. Ph.D. — Zool. Dept., King's Coll., Strand, LONDON W.C.2, England
LYSER (SHOUBY), Mrs. K. M. Ph.D., Prof. — Dept. of Biol. Sci., Hunter Coll., 695 Park Ave., Box 351, NEW YORK, N.Y. 10021, U.S.A.
a Differentiation of the central nervous system; electron microscopy. Gallus domesticus (Aves)
b Patterns of proliferation, and cytological and histological differentiation of the central nervous system in organ culture (light and electron microscopy). Gallus domesticus (Aves)
LYTLE, Ch. F. Ph.D., Prof. — Dept. of Zool., North Carolina State Univ., Box 5577, RALEIGH, N.C. 27607, U.S.A.
a Causal analysis of the formation and control of the anterior-posterior axis of the unincubated blastoderm. Gallus domesticus (Aves)
McCAFFERTY, R. E. Ph.D., Prof. — Dept. of Anat., Med. Center, West Virginia Univ., MORGANTOWN, W.Va. 26506, U.S.A.
a Histochemistry and ultrastructure of the Harderian gland at pre- and postnatal stages. Rattus rattus (Rodentia), Sus scrofa (Artiodactyla)
b Histochemistry of the lacrimal gland from early development through patient demise; normal and abnormal. Homo sapiens (Primates)
McCALLION, D. J. Ph.D., Prof. — Dept. of Anat., Fac. of Med., McMaster Univ., HAMILTON, Ont., Canada
a Development of specific proteins in the central nervous system (fluorescence, electronmicroscopy). Gallus domesticus (Aves)
h Heterogenous induction. Same species as a
b Teratological and embroyotoxic effects of tissue antibodies. Gallus domesticus (Aves), Rattus norvegicus, Mus musculus (Rodentia)
McCCLURE, T. Ph.D. — Dept. of Anat. Sci., Univ. of Oklahoma Med. Center, 801 NE 13th St., OKLAHOMA City, Okla. 73104, U.S.A.
a Developmental variations in the central nervous system. Papio spec., Macaca mulatta (Primates)
a The soluble lens proteins (crystallins) in lens differentiation, as studied by column chromatography, electrophoresis, and immunofluorescence. Rana pipiens (Anura)
a Histology of eye, heart, and somite region. stages 21-46, photomicrography. Xenopus laevis (Anura)
b Cytological differences, especially number and location of mitochondria, associated with developmental potentialities of intestinal epithelium cells (light and electron microscopy). Rana pipiens (stage 25), Xenopus laevis (stage 46) (Anura)
McGARRY, M. P. Ph.D. — Div. of Viral Oncol., Roswell Park Mem. Inst. 666 Elm St., BUFFALO, N.Y. 14203, U.S.A.
a Humoral control of eosinophil granulocyte regeneration and proliferation in vivo and
Influence of Friend virus infection on developmental interrelationship between stem-precursor cells and the inductive stroma of hemopoietic tissues; determination of target cell(s). Same species as a

McGAUGHHEY, R. W. Ph.D. — Dept. of Molec., Cell. and Developm. Biol., Univ. of Colorado, BOULDER, Colo. 80302, U.S.A.

McGOVERN, P. T. — Dept. of Anat., Royal Vet. Coll., LONDON NW1 0TU, England


Developmental potentials of transplanted tumor nuclei obtained from adults. 


The metabolic characteristics of different tissues in the early embryo. 

Gallus gallus (Aves)

The effects of exogenous RNA on the early embryo and cell cultures. Same species as a

c Myoblast/fibroblast relationships in monolayer cultures. Same species as a

d The state of cell differentiation in early embryos. Same species as a


In vitro differentiation of 6-day lens epithelium: biochemical (protein synthesis) and ultrastructural analysis. 

Gallus domesticus (Aves) (with C. V. FINNEGAN)

Maclean, N. Ph.D. — Dept. of Zool., Univ. of Southampton, SOUTHAMPTON SO9 5NH, England

A Developmental changes in haemoglobin, and the control of its synthesis. 

Xenopus laevis (Anura), Mus musculus. Rattus spec. (Rodentia), Gallus domesticus (Aves)

MacMillan, E. W. Dr. — Dept. of Anat., Univ. of Liverpool, P.O.Box 147, LIVERPOOL L69 3BX, England

a The rate of transport of spermatozoa through the ductus epididymidis. Rattus spec. (Rodentia)

MackMillan, Miss F. E. A.B. — Pacific Marine Station, Univ. of the Pacific, DILLON BEACH, Calif. 94929, U.S.A.

a Larval development under laboratory conditions from zoa through first adult stages. 

Pachycheles rudis, P. pubescens, Petrolisthes cinctipes, P. eriomerus, P. mantinaculis, Pagurus samuelis, P. setosus (Decapoda, Crustacea)

Buck, R. W. — Dept. of Anat., The Univ. of Texas Med. School at San Antonio, 7703 Floyd Curl Drive, SAN ANTONIO, Tex. 78229, U.S.A.

Developmental genetics of a tail-labyrinthine mutant (pr). Mus musculus (Rodentia)

a Development and pathological progression of a new neuromuscular mutant. Mus musculus (Rodentia)

Macotte, V. M.D. — Dept. of Anat., Univ. of Turin, Corso M.d’Azeglio 52, 10126 TORINO, Italy
Electron histochemical mitochondria chromosome origin, experimental chromosome effect Dr., effects biochemical development influence developmental ultrastructure Ph.D. 

MAWHINNIE, Miss D. J. Ph.D. — Dept. of Biol. Sci., De Paul Univ., 1036 W. Belden Ave., CHICAGO, III. 60614, U.S.A.


MAHOWALD, Mrs. E. J. KRUGELIS, Ph.D., Prof. — Dept. of Anat., Coll. of Med., Univ. of Illinois, 1835 W. Polk St., P.O.Box 6998, CHICAGO, III. 60680, U.S.A.

a Electron microscopy. Dugesia tigrina. Notoplana acticola (Turbellaria)
b Histones in erythropoiesis. Gallus domesticus (Aves)
c Developmental morphology of smooth muscle. (Vertebrata)


a Biochemistry of embryonic bone with particular reference to metabolic pathways, enzyme systems, and hormone effects. Gallus domesticus (Aves), Rana pipiens (Anura)


a Influence of environmental factors and hormones on epidermal turnover, in vivo and in vitro. Iguana iguana, Anolis carolinensis, Dipsosaurus dorsalis, Gekko gecko. Coleonyx variegatus (Lacertilia), Elaphe obsoleta (Ophidia)

b Wound healing. Same species as a
c Tail regeneration with reference to epidermal replacement. Iguana iguana, Anolis carolinensis, Dipsosaurus dorsalis, Gekko gecko, Coleonyx variegatus (Lacertilia)

MADHAVAN, K. Ph.D. — Center for Pathobiol., Univ. of California, IRVINE, Calif. 92664, U.S.A.


a Effects of hormones and analogues on development (biochemistry, cytology). Drosophila melanogaster and other spp. (Insecta and other Arthropoda)

MADJEREK, Z. S. Dr., Prof. — Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritshakade 61, AMSTERDAM-O., Netherlands

a Experimental studies on genito-urinary tract development. Mus spec. (Rodentia)

MAEDA (KIBATA), Mrs. M. B.Sc. — Dept. of Biol., Coll. of Gen. Educ., Osaka Univ., Toyonaka, OSAKA, 560 Japan

a Effect of light on morphogenesis. Chara spec., Nitella spec. (Characeae)
b Effects of far-red and red illumination on seed germination. Lactuca sativa (Compositae)

MAGGIO, Miss R. Ph.D., Prof. — Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

MAHOWALD, A. P. Ph.D. — Inst. for Cancer Research, 7701 Burholme Ave., PHILA-DELPHIA, Pa. 19111, U.S.A.

b Isolation and chemistry of polar granules. Drosophila melanogaster (Diptera)

MAIBENCO, Miss H. C. Ph.D., Prof. — Dept. of Anat., Univ. of Illinois, P.O.Box 6998, CHICAGO, III. 60680, U.S.A.

a Nidation Rattus rattus (Rodentia)
b Origin, function, and fate of decidual cells (autoradiography). Rattus rattus (Rodentia)
c Development of the early embryo (frozen-dried material, autoradiography). Rattus rattus (Rodentia)

MAIRY, Mrs. M. Lic.èes Sci. — Lab. de Biochim., Univ. de Liège, 17 Place Dercul, B-4000 LIÈGE, Belgium

a Mécanismes biochimiques de l’oogenèse. Xenopus laevis (Anura)

MAISONHAUTE, Cl. — Lab. de Zool., Centre d’Orsay, Univ. Paris-Sud, 91 ORSAY, France

a Effects of actinomycin injected into the egg. Leptinotarsa decemlineata (Coleoptera)

MAJORCA (MONTELEONE), Mrs. A. D.Sci. — Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO, Italy

a Mitochondria in eggs. (Polychaeta; Echinoderms)

MAKINEN (LÖNNBERG), Mrs. P.-L. M.S. — Dept. of Forensic Med., Univ. of Turku. Kiinamyllynkatu 10, 20520 TURKU 52, Finland

a Biochemical characterization of enzymes appearing in early wound healing. Rattus spec., Cavia spec. (Rodentia) (with J. RAEKALLIO)
b Histochemical studies on bone regeneration (fracture healing). Rattus spec., Cavia spec. (Rodentia) (with J. RAEKALLIO)
c Enzyme histochemistry of skin transplants (allografts and homografts). Rattus spec., Cavia spec. (Rodentia) (with J. RAEKALLIO)
d Biochemistry of vascular response in experimental wound healing. Rattus spec., Cavia spec. (Rodentia) (with J. RAEKALLIO)

MAKINO, S. D.Sc., Prof. (Emer.) — Chromosome Research Unit, Fac. of Sci., Hokkaido Univ., North 10, West 8, SAPPORO, 060 Japan

a Chromosome aberrations in patients with congenital disorders, with special regard to the relationship between karyological features and disease states. Homo sapiens (Primates)
b Chromosome studies in spontaneous and induced abortions. Homo sapiens (Primates)
c Virus-induced chromsome aberrations with special regard to teratogenesis and carcinogenesis. Homo sapiens (Primates)

MAKINODAN, T. — Biol. Div., Oak Ridge Natl. Lab., P.O. Box Y, OAK RIDGE, Tenn. 37830, U.S.A.

a Ontogeny and senescence of the immune system. Mus musculus (Rodentia)
MALAPRADE, Miss D. — Lab. d'Embryol., Univ. de Nancy I, 31 rue Lionnois, 54 NANCY, France
Les voies neurosecrétoires hypothalamo-hypophysaires au cours de l'embryogenèse et de la période néonatale. *Gallus gallus* (Aves)

MALET, P. M.D. — Lab. d'Histol.-Embryol., Fac. de Méd., Bd. Winston Churchill, B.P. 38, 63 CLERMONT-FERRAND, France
Cytology of neonatal liver: differentiation of intercellular junctions, characters of microbodies: histochemical differentiation. *Mus musculus* (Rodentia) (with R. POURHADI and J. P. TURCHINI)

MALEYVAR, R. P. M.Sc. — Dept. of Biol., City of London Polytechnic, 31 Jewry St., LONDON EC3N 2EY, England
A relationship between DNA synthesis and differentiation with particular reference to the lens. *Xenopus laevis* (Anura)

MALIKOVA, Mrs. L. G. — Dept. of Embryol., Leningrad State Univ., Mendeleevskiy St. 5, LENINGRAD V-164, U.S.S.R.
A Restoration processes at different stages of ontogenesis. *Dinophilus* spec. (Archianelida), *Pyoglossus elegans* (Polychaetae)

A Developmental study of mutant gene effects on skeletal abnormalities. *Mus musculus* (Rodentia)

A Regeneration of myocardium. *Oryctolagus cuniculus* (Lagomorpha)

MALPOIX (HIGGINS), Mrs. P. M. Ph.D. — Lab. de Cytol. et d'Embryol. Moléc., Univ. libre de Bruxelles, 67 rue des Chevaux, 1640 RHODE-ST-GENESE, Belgium
In vitro study of the synthesis and structure of nuclear and cytoplasmic proteins (including chromatin and haemoglobin) in embryonic liver: 1. influence of erythropoietin and other hormones: 2. effect of bromodeoxyuridine; 3. effect of X-irradiation. *Mus musculus* (Rodentia)
b Effect of X-irradiation on RNA polymerase activity in haematopoietic tissue. *Mus musculus* (Rodentia)

A Mesenchymal and epithelial cell movements in morphogenesis (metabolic inhibitors, electron microscopy). *Gallus domesticus* (Aves)

MANCINO, G. Dr.Biol.Sci. — Ist. di Zool. e Anat. Comp. dell’Univ., Via A. Volta 4, 56100 PISA, Italy
A Development and functionality of the gonads in hybrids. (Urodela)

Lampbrush Chromosomes. (Cephalopoda; Urodela)
Cytology. (Opisthobranchia, Gastropoda)

MANSERX, G. M. - Prof. — Ist. di Biol. Gener., Univ. di Palermo, Via Divisi 83, 90139 PALERMO, Italy
The distribution of enzymes and other substances in the germ during development. *Tubifex* spec. (Oligochaeta), (Mollusca; Asciidae)
Ultrastructure of eggs during development. Same species as a
Ultrastructural changes during oogenesis. Same species as a

A Mechanisms of evagination and differentiation of imaginal discs in different culture media. *Drosophila melanogaster* (Diptera)

MANDEL, P. Prof. — Centre de Neurochimie, C.N.R.S., 11 rue Humann, 67 STRASBOURG, France

MANELLI, H. Dr.nat.hist., Dr.biol.sci. — Ist. di Zool. dell’Univ., Viale Regina Elena 324, (al Policlinico), 00100 ROMA, Italy

MARCHETTI ROMANINI, Mrs. M. G. Ph.D. — Prof. — Dept. of Histol. and Embryol., Univ. of Pavia, Piazza Botta 10, 27100 PAVIA, Italy
A Histochemical analysis of catecholamines and 5-HT (5-hydroxytryptamine) during the development of central nervous system. *Rattus norvegicus* (Rodentia)
Histophotometric quantitative determination of nuclear DNA (Feulgen reaction) during the development of central nervous system. Same species as a

MANGIA, F. Dr.biol.sci. — Ist. di Zool., dell’Univ., Viale Regina Elena 324, (al Policlinico), 00100 ROMA, Italy

A The effect of embryotoxic and teratogenic agents on embryonic development, especially streptococcal alpha-toxins and insecticides. *Mus musculus, Rattus* spec. (Rodentia)
MARRARO (CARNAZZA), Mrs. M. L. — Ist. di Anat. Umana Norm., 2a Catt., Univ. di Catania, Via Biblioteca 4, 95124 CATANIA, Italy

a Mode of formation of the concentric bodies (epithelial pearls) during chorioallantoic membrane grafts. Gallus domesticus (Aves)
b Liver homoplastic graft in chorioallantoic membrane. Same species as a
c Structural changes of allantoic membrane epithelium submitted to the action of different agents. Same species as a
d Pineal gland homoplastic graft in chorioallantoic membrane. Same species as a

MARRE, E. — Ist. di Sci. Bot. dell'Univ., Cat. di Fisiot. Vegetale, Via Giuseppe Colombo 60, 20133 MILANO, Italy

a The mechanisms of the metabolic changes characterizing the transition from meristematic growth to specialized cell functions. (Saccharomyzetales; Spermatophyta)

a Differentiation and growth of the pigment epithelium of the retina, especially DNA synthesis, cell division, and mechanisms of nuclear polyploidization. Rattus norvegicus (Rodentia) (with O. G. STROEVA)

MARS, L. M.D. — Lab. of Teratol., Karolinska Inst., S-104 01 STOCKHOLM 60, Sweden

a Perinatal vascular changes in the postnatal system. Rattus norvegicus (Rodentia)
b Transplantation of fertilized ova. Mus musculus (Rodentia)

MARSICAN, D. A. — Ph.D., Prof. — Marine Biol. Lab., Box 665, WOODS HOLE, Mass. 02543, U.S.A.

MARTHY, H.-J. Ph.D. — Inst. d'Embryol. et Teratol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France

a Implantation and explantation of organ anlagen. Loligo vulgaris (Cephalopoda)
b Investigations on induction. Same species as a
c Determination and regulative capacity of the eye anlagen in stages VI-XII (Naeff) (auto- and allotransplant, organ cultures). Same species as a

a Development, morphology, and histology of the central nervous system (light microscopy). Gallus domesticus (Aves), Mus musculus (Rodentia)
b Teratogenic effect of various techniques and agents upon the developing embryo. Same species as a

MARTIN, Ch. B., Jr. M.D., Prof. — Dept. of Obstet. and Gynecol., Univ. of S. California, 1200 North State St., LOS ANGELES, Calif. 90033, U.S.A.
a Anatomy and radiology of placental circulation. Macaca mulatta. Homo sapiens (Primates)
b Physiology of the uteroplacental and umbilical circulations. Macaca mulatta (Primates)

MARTIN (FORGET), Mrs. C. S. Lic.és Sci. — Inst. d'Embryol. et Teratol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France
a Mesonephros differentiation: culture of Wolffian duct with different mesenchymes. Gallus domesticus (Aves)
b Experimental morphogenesis of embryonic kidney. Gallus gallus (Aves) (with Y. CROI-SILLE and M. GUMPEL)

MARTIN, R. P. Dipl. d'Etud. Approf. — Lab. d'Embryol., Unité de Sci., Univ. de Caen, 14 CAEN, France
a Renouvellement et différenciation des cellules de l'épithélium intestinal. Ambystoma mexicanum (Urodèle)

MARTINEK, J. M.D. — Inst. of Embryol., Fac. of Med., Charles Univ., Albertov 4, PRAGUE 2, Czechoslovakia
a Cytochemistry and electron microscopy of ova. Rattus spec. (Rodentia), Homo sapiens (Primates)
b Fine structure of the blastocyst; the role of nucleoli in early differentiation of blastodermic vesicle. Rattus spec. (Rodentia), Homo sapiens (Primates)
c Ultrastructure and histochemistry of ovarian differentiation: development of ovum and follicle cells. Rattus spec. (Rodentia)

MARTINET, Mrs. M. Dr.és Sci. — Lab. d'Histol.-Embryol. B, Fac. de Méd., 45 rue des Sts.Pères, 75 PARIS V1e, France
a Influence tératogène des infections Rickettsiennes. Rattus rattus (Rodentia)

MARTINOVITCH, P. N. Ph.D. — Dept. of Exp. Histol. and Organ Cult., Inst. of Nuclear Sci. "Boris Kidric", Višca, P.O.Box 522, BEograd, Yugoslavia

MARTY, R. J. L. Dr.en Méd. Dr.és Sci., Prof. — Lab. de Neurophysiol., Fac. des Sci., Univ. de Montpellier, Place Eugène Bataillon, 34 MONTPELLIER, France

MASCARENHAS, J. P. - Ph.D., Prof. — Dept. of Biol. Sci., State Univ. of New York, 1400 Washington Ave., ALBANY, N.Y. 12203, U.S.A.

a Protein and RNA synthesis in the control of pollen tube development. *Tradescantia paludosa* (*Commelinaceae*)

b Gene activity in pollen development. *Tradescantia paludosa* (*Commelinaceae*), *Zea mays* (*Gramineae*)


a The effect of changes in the cell periphery caused by enzymatic treatments as determined by electrophoretic mobility on the formation of aggregates of disaggregated embryonic cells of different tissue origins. *Gallus domesticus* (*Aves*)

b The adhesion of cells to different cellular and non-cellular substrates. *Mus* spec. (*Rodentia*), *Homo sapiens* (*Primates*)

c The release of material associated with cell adhesion. Same species as a

d Differential adhesion in the morphogenesis of the limb bud. *Gallus domesticus* (*Aves*)

MASNER, P. - RNDr., CSc. — Dept. of Developm. Morphol., Inst. of Entomol., Czechoslov. Acad. of Sci., 7 Víničná, PRAHA 2, Czechoslovakia

MASSART, C. M.D., Prof. — Ist. di Anat. e Istoemibril., Univ. di Pisa, Via Roma 55, 56100 PISA, Italy

MASTROLIA, Miss L. - Dr.biol.sci. — Ist. di Zool. dell’Univ., Viale Regina Elena 324, (al Policlinico). 00100 ROMA, Italy

MASUDA, H. - D.Sc. — Dept. of Biol., Kônan Univ., Okamoto, Motoyama-cho, Higashinada-ku, KOBE, Japan

MASUI, Y. - Ph.D., Prof. — Dept. of Zool., Univ. of Toronto, 25 Harbord St., TORONTO 5, Ont., CANADA


a The morphogenesis of the genital organs from the standpoint of evolutionary morphology. (Amniota, incl. *Homo sapiens*)

MATHEWS, M. B. - Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, CHICAGO, III. 60637, U.S.A.

MATSUMOTO, J. - D.Sc. — Dept. of Biol., Keio Univ., YOKOHAMA-Hiyoshi, Japan

a Changes of enzymatic composition during pigment cell differentiation. *Carassius auratus*, *Xiphophorus helleri* (*Teleostei*), *Xenopus laevis* (*Anura*)

b Morphological and cytochemical characterization of phaeomelanosomes. *Mus musculus* (*Rodentia*)

MATSUNAGA, Miss Y. — Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2-1-1 chome, Fukazawa-machi, Setagaya-ku, TOKYO 158, Japan

a Carbohydrate metabolism of the embryo. *Anthoclyaris* spec., *Pseudocentrotus* spec., *Hemicentrotus* spec. (*Echinoidea*)

MATTHEWS, R. W. - B.D.S. — Dept. of Oral Anat., Dental School, Northumberland Rd., NEWCASTLE upon Tyne NE1 8TA, England

a Development of the submandibular gland and the differentiation of the ducal elements. (Rodentia)

MATTINGLY, Miss E. - Ph.D. — Dept. of Zool., Univ. of Georgia, ATHENS, Ga. 30601, U.S.A.

a Variations in nucleic acid synthesis during larval development (autoradiography and biochemistry). *Rhyhoscia angela* (*Diptera*)

MATUSZEWSKI, B. - Ph.D. — Dept. of Cytol., Zool. Inst., Warsaw Univ., Krakowskie Przedmieście 26/28, WARSZAWA 64, Poland

a Oogenesis. (*Cecidomyiidae*, *Diptera*)

b Cytochemical investigation on the origin of the mitotic spindle. Same species as a

c Development and growth of egg follicles: 1. growth regulation of nurse nuclei: 2. origin of oosome material in the egg cell. Same species as a

MALIGER (GIRARD), Mrs. A. - Dr.ès Sci. — Lab. de Zool., Inst. de Rech. Biol., Univ. Scient. et Méd. de Grenoble, Cedex 53, 38 GRENOBLE, France

a Ultrastructure of the effects of x-irradiation upon the development of the spinal pteryla and the cutaneous nerve pattern. *Gallus domesticus* (*Aves*)

b Role of spinal cord, somites, and ectoderm in feather pattern formation. Same species as a

c Contribution of various cell types to the dermis and epidermis (autoradiography, xeno-plastic transplantation). *Gallus domesticus*, *Coturnix japonica* (*Aves*)

MALIRER, R. R. - Ph.D. — Natl. Inst. of Environm. Health Sci., P.O.Box 12233, RESEARCH TRIANGLE PARK, N.C. 27709, U.S.A.

a Significance of uterine proteins to 2-4 cell embryos in vitro. *Oryctolagus cuniculus* (*Lagomorpha*)

b The male influence on the development of the early embryo (2 cell - blastocyst). *Oryctolagus cuniculus* (*Lagomorpha*), *Mesocricetus auratus* (*Rodentia*)

c The effects of uterine environmental changes with maternal ageing on embryonic development. Same species as a
a Biogenesis of glyoxysomes in germinating seeds. *Pinus ponderosa, P. jefferii* (*Gymnospermae*)
b Physiology of developing seeds, especially nucleic acids. *Glycine max* (*Papilionaceae*)

a Developmental genetics of white-spotting patterns. *Mus musculus* (*Rodentia*)

MAYS, U. Dr.ren.nat. — Zool. Inst. der Univ., Badestr. 9, 44 MÜNSTER/Westf., W. Germany

a RNA transport in the egg follicle, especially in meroistic ovaries (radioisotopes, electron microscopy). *Pyrrhocoris apterus* (*Homoptera*)

MAZHUGA, P. M. Dr.Biol.Sci., Prof. — Dept. of Cytol. and Histogen., Inst. of Zool. Acad. of Sci. of the Ukraine, Vladimirskaya St. 55, KIEV 30, U.S.S.R.
a Principles of genesis, and cytological peculiarities of some derivatives of mesenchyme: the peculiarities of endochondral and perichondral osteogenesis. Domestic and laboratory animals (*Mammalia*), *Homo sapiens* (*Primates*)
b Onto- and phylogensis of the blood-vascular trunks of the extremities. Same species as a
c Development of the blood-vascular bed of the joint capsule. Same species as a
d Histogenesis of blood vessels; comparative hemopoiesis. Same species as a
e The structural and functional differentiation of cells in chondrogenesis and osteogenesis.

(*Mammalia*)
f Utilization of cells and matrix substances during enchondral osteogenesis (autoradiography, histochemistry, electron microscopy). *Oryctolagus cuniculus* (*Lagomorpha*), *Rattus* spec. (*Rodentia*)

MAZURKIEWICZ, M. Ph.D. — Dept. of Oceanography, Ira C. Darling Center for Research, Teaching, and Service (Marine Lab.), Univ. of Maine, WALPOLE, Me. 04573, U.S.A.
a Development from the egg through F2 generation. *Laoniereis culveri* (*Errantia, Polychaeta*)
b Larval development and reproduction. *Hydrobia totteni*, *H. salsa* (*Prosobranchia, Gastropoda*)
c Larval development. *Macoma balthica* (*Lamellibranchia*)
d Larval development. *Echinarchus parma* (*Echinidea*)

MAZZA, M. Dr.Nat.Sci. — Ist. di Zool. e Anat. Comp. dell'Univ., Via A. Volta 4, 56100 PISA, Italy

a External egg morphology, development. *Nepa rubra* (*Heteroptera*)

MEINIEL (BOUTRON), Mrs. A. Dr. 3e cycle — Lab. de Biol. Anim., Univ. de Clermont, B.P. 45, 63 AUBIERE, France

a Embryonic development of the pineal gland (electron microscopy, Falck and Hillarp method, autoradiography). (*Reptilia, Aves, Mammalia*)
b Parapineal organ (same methods as a). *Lamprana planeri* (*Cyclostomata*)

MEINIEL, R. Dr.3e cycle — Lab. de Biol. Anim., Univ. de Clermont, B.P. 45, 63 AUBIERE, France

a Teratogenic action of parathion: effect on biogenic amines, catecholamines and glycogen (histochemistry, electron microscopy). *Gallus domesticus* (*Aves*)

a Molecular mechanisms for tumor recovery in crown-gall tumor cells. *Nicotiana tabacum* (*Solanaceae*)
b Biochemistry of epigenetic inherited changes in the course of normal development (tissue culture). Same species as a
c The relationship between the potassium ion and auxin in regulating growth of cultured tissues. Same species as a
d Conditional auxin requirements of cultured tissues. Same species as a

MELANDER, Y. Ph.D. — Inst. of Genet., Univ. of Lund, Sölvegatan 29, S-223 62 LUND, Sweden

MELLER, K. Dr.med. — Inst. für Anat. der Ruhr-Univ. Bochum, Postfach 2148, 463 BOCHUM, W.Germany

a Development of retina and central nervous system, especially cerebral cortex and cerebellum (electron microscopy, autoradiography, tissue culture). *Gallus domesticus* (*Aves*), *Mus musculus* (*Rodentia*)
b Protein synthesis of differentiating cells (autoradiography)

a Genome structure, developmental function and control as studied by nucleic acid renaturation and hybridization. *Trypanosoma lewisi* (*Mastigophora*), *Rana pipiens* (*Anura*), *Gal- lucus domesticus* (*Aves*), *Bos taurus* (*Artiodactyla*)
b Biochemistry and cell biology of cleavage and early development. *Rana pipiens* (*Anura*)

a DNA content and nuclear size in endoderm and ectoderm. *Crasedacusta sowerbii* (Hydrozoa)

MEMIKOGLU (GÖNENC), Mrs. A. — Inst. of Histol. and Embryol., Med. Fac., Hacettepe Sci. Center, ANKARA, Turkey
a Ultrastructural differentiation of somitic mesoderm. *Gallus domesticus* (Aves)

MENEZES, Miss A. M. C. M.Sc. — Dept. of Bot., Univ. of Poona, Ganeshkind, POONAH 7, India
— temporarily: Cell Research Lab., Dept. of Zool., N.Wadia Coll., POONA-1, India
a Nutritional requirements of isolated roots during growth and development. *Datura quercifolia*, *Withania somnifera* (Solanaceae)
b Effect of amino acids and calcium on root growth and development, and on alkaloid production. Same species as a
c Comparative developmental anatomy of excised and normal roots. Same species as a
d Enzymes and mucopolysaccharides in the prothallus (histochemical methods). *Pteris aquilina* (Funiculata) (with J. F. LOBO)

a Effects of immune reactions against spermatozoa on the development of embryos. *Oryctolagus cuniculus* (Lagomorpha)

a The role of normal and experimentally induced necrosis in teratogenesis
b Cinematographical studies on growth and differentiation processes of the embryonic axial organs. *Gallus domesticus* (Aves)
c The influence of exogenous factors on embryonic development; prenatal pathology. *Gallus domesticus* (Aves)
d Organogenesis in the embryo. *Homo sapiens* (Primates)
e Synthetic study on a collection of serial preparations of 3-30 mm embryos. *Homo sapiens* (Primates)

MENSCHIK, Z. † Prof. — Dept. of Anat., Georgetown Univ., WASHINGTON, D.C., U.S.A.

MERCIER (PAROT), Mrs. L. Dr.es Sci. — Lab. d’Histol.-Embryol. A, Fac. de Méd., 45 rue des Sts.Pères, 75 PARIS Vle, France
a Tératogenèse par sulfamides hypoglycémiantis, antimetabolites. *Rattus* spec. (Rodentia)
(b) (with H. TUCHMANN-DUPLESSIS)
b Influence de la cortisone sur la gestation et le développement fœtal. Same species as a
c Influence des alcanolydes du Rauwolfia, de la résépine et de la désépine sur le développement. Same species as a (with H. TUCHMANN-DUPLESSIS)
e Diabète expérimental et grossesse. (Mammalia)
f Influence des antimitotiques sur la gestation. (Rodentia) (with H. TUCHMANN-DUPLESSIS)

MERKER, H.-J. Dr.med., Prof. — Forschungsabt. für Elektronenmikroskopie und II. Anat. Inst. der Freien Univ. Berlin, Kön.-Luise-Str. 15, 1 BERLIN 33, W.Germany
a Experimental teratology. *Rattus spec.*, Mus *musculus* (Rodentia)
b Problems of mesenchymal development. Same species as a
c The morphology of the barrier between embryo and mother in early stages. Same species as a

MERKLE, U. Dr.med., Prof. — Anat. Inst. der Univ. Erlangen-Nürnberg, Krankenhausstrasse, 852 ERLANGEN, W.Germany
a Spermatogenese und Sertoli-Zellen. *Rattus* spec. (Rodentia)

MESSAGE, M. A. Ph.D. — Anat. School, Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3DY, England
a Development of muscle, primarily with histochemical techniques. *Xenopus laevis* (Anura), *Mus musculus*, *Rattus norvegicus* (Rodentia)
b Development of tissue culture techniques for study of myogenesis

METAFORA, S. Dr. — Lab. of Molec. Embryol., Via Tolano 2, 80072 ARCO FELICE, (Napoli), Italy

METZ, C. B. Ph.D. — Inst. of Molec. Evolut., Univ. of Miami, 521 Anastasia Ave., CORAL GABLES, Fla., 33142, U.S.A.

MEUSY, J.-J. D.E.S. — Lab. d’Evol. des Etres Organisés, Fac. des Sci., 105 Bd. Raspail, 75 PARIS Vle, France
a Corrélations endocrines. *Orchestia gammarella* (Amphipoda), *Carcinus maenas* (Decapoda, Crustacea)
b Ultrastructure des glandes endocrines. (Malaecostraca, Crustacea)

a Morphogenesis and developmental histochemistry of embryonic eye. *Gallus domesticus* (Aves)
b Histochemistry of gonadal development. Same species as a
c Prenatal ossification of the skeleton. *Homo sapiens* (Primates)
d Electron microscopy of retinal development. *Gallus domesticus*, *Coturnix c. japonica* (Aves)

**MEZEI (TEICHMANN), Mrs. C.** Ph.D. — Biochem. Dept., Med. School, Dalhousie Univ.,
Sir Charles Tupper Bldg., HALIFAX, N.S., Canada

a Control of myelogenesis. *Gallus domesticus* (Aves)
b Developmental changes in myelin composition of the sciatic nerve. *Gallus domesticus* (Aves)

**MEZGER-FREED, Mrs. L.** Ph. D. — Inst. for Cancer Research, 7701 Burholme Ave., PHILADELPHIA, Pa. 19111, U.S.A.
a Genetical of haploid embrylo cell lines including analysis by nuclear transfer. *Rana pipiens* (Anura) (with J. FREED)

**MICELI, Miss D. C.** Biochem. — Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461,
S. M. de TUCUMÁN, Argentina

a Intermediate metabolism during early development: enzyme regulation. *Bufo arenarum* (Anura)

**MICHAIL, M. I.** Ph.D. — Dept. of Zool., Alexandria Univ., Moharram Bey, ALEXANDRIA, Egypt

a The development of the olfactory organs. *Bufo regularis* (Anura)
b Experimental analysis of the development of the cephalic ganglia and other derivatives of the head neural crest. *Ambystoma mexicanum* (Urodela)
c The development of the urogenital system. Same species as a (with S. N. SEDRA and S. KHALIL)
d Studies of hind limb regeneration. Same species as a


a Locomotion and behaviour of epithelial cells in tissue culture. *Gallus gallus* (Aves), *Mus musculus* (Rodentia)

**MIGLORINI (BRUSCHELLI), Mrs. G.** Dr.Sci.Biol. — Ist. di Biol. Gener., Univ. di Perugia, Via del Giochetto, 06100 PERUGIA, Italy

a Neurosecrezione durante lo sviluppo embrionale. *Allolobophora caliginosa* (Oligochaeta)
b Antibiotici e sviluppo embrionale. *Bufo vulgaris* (Anura)
c Malformazioni embrionali da vitamina A. *Bufo vulgaris* (Anura)


a Fine structure and hormonal activity of intact and cultured embryonic adrenal cells of different species

**MIKAMI, Y.** Ph.D., M.D., Prof. — Dept. of Anat., Mie Pref. Univ., 2-174, Edobashi, TSU, Japan

a Etiology of some congenital anomalies. *Mus molossinus albinus* (Rodentia)
b Developmental mechanism of entodermal organs
c Experimental analysis of Wolffian lens regeneration

a Sex ratio in fetuses from induced abortions. *Homo sapiens* (Primates)
b Chromosomes of various fetal stages, normal and pathologic. *Homo sapiens* (Primates)
c Chromosomes and genes in sex-reversed animals. *Xenopus laevis* (Anura)
d Various experimental conditions leading to intrafetal overripeness of oocyte and their effects on the anatomic and chromosomal aspects of the embryo. *Rattus norvegicus* (Rodentia), *Oryctolagus cuniculus* (Lagomorpha), *Macaca mulatta* (Primates)

**MIKI-NOUMURA, Mrs. T.** Ph.D. — Inst. of Molec. Biol., Fac. of Sci., Nagoya Univ.,
Chikusa-ku, NAGOYA, 464 Japan

a The mitotic apparatus protein of the egg. *Hemicentrotus pulcherrimus*, *Pseudoacentrotus depressus*, *Anthocidaris crassispina* (Echinoidea)
b Cleavage. Same species as a
c An actin-like egg protein. *Hemicentrotus pulcherrimus*, *Pseudoacentrotus depressus*, *Anthocidaris crassispina*. *Temnopleurus torematicus* (Echinoidea)

**MILAIRE, J.** M.D. — Lab. d’Anat. et d’Embryol., Fac. de Méd., Univ. libre de Bruxelles,
97 rue aux Laines, 1000 BRUXELLES, Belgium

a Pathogenesis of postaxial syndactyly III-IV induced by hadacidin (descriptive, histo-
chemical, and autoradiographic studies). *Rattus spec.* (Rodentia)
b The cellular effects of hadacidin in limb bud cultures. *Rattus spec.* (Rodentia)

**MILKMAN, R. D.** Ph.D., Prof. — Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA-City, Iowa 52240, U.S.A.
a Developmental biology, classical and physiological genetics. *Botryllus schlosseri* (Ascidia-
cea)
b Developmental biology, genetics. *Drosophila melanogaster* and other spp. (Diptera)
MILLER, J. H. Ph.D., Prof. — Dept. of Biol., Syracuse Univ., 130 College Place, SYRACUSE, N.Y. 13210, U.S.A.

a. The role of ethylene as an inhibitor of cell division and its action as a co-factor in light-induced cell elongation. Onoclea sensibilis (Fili cinaceae)


a. The relationship of fine structure to RNA, DNA, and protein metabolism in the lamphooch chromosomes, nucleoli, and nucleoplasm of oocytes (standard sectioning techniques, microinjection, enzymatic digestions, phase contrast microscopy, electron microscopy, autoradiography). (Amphibia)

MILLER, R. L. Ph.D. — Dept. of Biol., Temple Univ., Broad and Berks St., PHILADELPHIA, Pa. 19122, U.S.A.

a. Pre-fertilization phenomena, particularly the chemotaxis of sperm to the gonangium: 1. purification and identification of the chemo-attractant; 2. changes in sperm behavior induced by the attractant, penetration of the sperm into the gonangium and the role of the sperm attractant. Campanularia flexuosa, Tubularia spp. (Hydrozoa)

b. Growth and morphogenesis of the gonangium: 1. description of maturation; 2. the role of temperature; 3. the role of microfilaments. Campanularia flexuosa, C.calceolifera (Hydrozoa)

MILLER, T. J. Ph.D. — Dept. of Zool., Rutgers Univ., 195 University Ave., NEWARK, N.J. 07102, U.S.A.

MILLER, W. A. D.D.S., Prof. — Dept. of Oral Biol., School of Dent., State Univ. of New York at Buffalo, 4510 Main St., SNYDER, N.Y. 14226, U.S.A.

a. Tissue interactions in early development of dental lamina. Pouch embryos of Didelphis marsupialis (Marsupialia), Mus musculus (Rodentia)

b. Tooth replacement. Amia calva. Lepisosteus spec. (Holostei), Necturus maculosus (Uroidea)

MILLINGTON, W. F. Ph.D. — Dept. of Biol., Marquette Univ., 530 North 15th St., MILWAUKEE, Wis. 53233, U.S.A.

a. Development at the shoot apex, and regulation of form in the leaf and shoot. Sphagnum spec. (Bryophyta), Monstera spp., Nicotiana spp. (Angiospermae)

b. Development in coenobial forms. Pediastrum spp. (Chlorophyceae)

c. Regulation of zoospore release and colony formation; factors regulating cell shape. Pediastrum boryanum (Chlorophyceae)

d. Emergence of pattern in cell differentiation in leaves. Fine structural analysis of differentiation of the hyaline and chlorophyllous cells. Sphagnum spp. (Bryophyta)

MILLONIG, G. M.D. — Lab. of Molec. Embryol., Via Tolano 2, 80072 ARCO FELICE, (Napoli), Italy

a. Electron microscopic studies on early development. Paracentrotus lividus, Arbacia lixula (Echinoidae)

b. Fine structure of cilia and stereocilia in embryos. Same species as a

c. Electron microscopic histochemistry of alkaline phosphatase during embryogenesis. Same species as a

MILLS, S. E. Ph.D., Prof. — Dept. of Biol., Univ. of California. San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.

a. Regulatory mechanisms in cultured cells. (Plantae)

MINAFRA, S. Ph.D. — Ist. di Istol. ed Embriol., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

a. Protein synthesis in differentiating tissues. Ilyanassa obsoleta (Gastropoda)

MINELLI, G. Dr.nat.sci., Prof. — Ist. di Anat. Comp., Univ. di Bologna, Via Belmeloro 8, 40126 BOLOGNA, Italy

MINGANTI, A. Dr., Prof. — Ist. di Anat. Comp., Univ. di Genova, Via Balbi 5, 16126 GENOVA, Italy

a. Enzyme activities in eggs and embryos. Balanus spec., Lepas spec. (Cirripedia, Crustacea)


a. Fine structure of somite differentiation and vertebral chordogenesis. Gallus domesticus (Aves)

b. The transient synthesis and accumulation of cartilage matrix components in non-chondrogenic tissues of the embryonic trunk. Same species as a

c. Fine structure of induced and noninduced chondrogenic differentiation in organ cultures of somites. Same species as a

d. Mechanisms of control of chondrogenic expression in embryonic tissues. Same species as a

MINTZ, Miss B. Ph.D. — Inst. for Cancer Research, 7701 Burholme Ave., PHILADELPHIA, Pa. 19111, U.S.A.

a. Gene control of differentiation in allophenic animals with two genotypic populations of cells. Mus musculus (Rodentia)

b. Control of implantation. Mus musculus (Rodentia)

a Anatomical and radiological studies of circulation in the maternal placenta. Macaca mulatta, Homo sapiens (Primates) (with Miss E. M. RAMSEY)


a The cytological changes in pigment epithelium cells in the course of their transformation into the neural retina during eye regeneration: RNA and DNA synthesis, cell cycles, the synthesis of the general and specific protein products. Triturus cristatus, T. vulgaris (Urodela)

dNA synthesis and cell cycles during neural retina regeneration. Triturus cristatus, T. vulgaris (Urodela) (with O. G. STROEVA and V. F. SINITSINA)

b Regeneration of the neural retina with special reference to isozymic patterns of LDH. Triturus cristatus (Urodela) (with L. I. KOROCHKIN)


a Effect of chemical compounds on pre-implantation stages in vivo and in vitro, with emphasis on developmental morphology and teratology. Mus musculus (Rodentia)

b Morphological and teratological effect of pesticides on the embryo. Chelydra serpentina (Chelonia)

MITCHISON, J. M. Sc.D., Prof. — Dept. of Zool., Univ. of Edinburgh, West Mains Rd., EDINBURGH EH9 3JN, Scotland, U.K.

MITOLO, V. M.D. — Inst. of Human Anat., Fac. of Med., Univ. of Bari, Policlinico, 70124 BARI, Italy

a Quantitative changes of spinal ganglia and spinal cord after increase or decrease of the peripheral field of innervation. Gallus domesticus (Aves)

b Growth models, a general study.


a Ontogeny and adenohypophysial lactotrophs. Rattus norvegicus (Rodentia)


a Hypothalamic control of the thyroid function in the neonate. Oryctolagus cuniculus (Lagomorpha), Cavia porcellus (Rodentia)

b Influence of encephalometry on adrenocortical function in the fetus. Oryctolagus cuniculus (Lagomorpha), Rattus spec., Cavia porcellus (Rodentia)

MIYA, K. D.Sc., Prof. — Inst. of Appl. Entomol., Fac. of Agric., Iwata Univ., 3-18, Ueda, MORIOKA, Japan

a Electron microscopy of oogenesis and embryogenesis. Bombyx mori (Lepidoptera)

b Analysis of early embryonic development. Bombyx mori (Lepidoptera)

MIZELL, M. Ph.D., Prof. — Dept. of Biol., Tulane Univ., NEW ORLEANS, La. 70118, U.S.A.

a Induced limb regeneration. Didelphis virginiana (Marsupialia)

b Effects of regenerating appendages on Lucké tumor (renal adenocarcinoma): tumor differentiation. Rana pipiens (Anura)

c Infectious nucleic acids (Herpes type virus associated with Lucké tumor) as differentiating agents. Rana pipiens (Anura)

MIZUNO, Takeo Ph. D., Prof. — Zool. Inst., Univ. of Tokyo, Hongo 7-3, Bunkyo-ku, TOKYO, 113 Japan

a Tissue interaction in lens induction. Gallus domesticus (Aves)

b The mechanism of epidermal regeneration. Mus musculus (Rodentia)

MOAV, B. Ph. D. — Dept. of Zool., Tel-Aviv Univ., 155 Herzl St., TEL-AVIV, Israel

a Histone synthesis on polyribosomes of early embryos. (Echinodidea)

b Biosynthesis of the mitotic apparatus protein in early embryos. (Echinodidea)

c Physico-chemical changes in somatic and sperm chromatins during spermatogenesis. Tilapia spec. (Cichlidae, Teleostei)

d Transformation of histones to protamines during spermatogenesis. Tilapia spec. (Teleostei)

MOCHIDA, O. Dr.Agr. — Dept. of Plant Pathol. and Entomol., Kyushu Natl. Agric. Exper. Station, Nishi 496, Izumi, CHIKUKU-shi, Fukuoka-ken, 833 Japan

a Morphology and physiology of oogenesis. Nilaparvata lugens (Delphacidae, Homoptera)

b Ecological and anatomical studies on reproduction. Javesella pellucida (Delphacidae, Homoptera)


a Studies on lens induction. Gallus domesticus (Aves)

b Temporal and spatial patterns of cell replication and nuclear degeneration during lens development and growth; computer analysis of mathematical models. Gallus domesticus (Aves) (with V. R. R. UPPULURI and W. E. LEVER)

c Analysis of the physico-chemical properties of DNA in differentiating cells. Triturus viridescens (Urodela), Gallus domesticus (Aves), Mus musculus, Rattus rattus (Rodentia), Homo sapiens (Primates) (with F. J. BOLLUM, G. DONNELLY, S. KARASAKI and H. TRAURIG)
d The nature of DNA loss during lens cell differentiation (in situ; DNA:RNA hybridization), *Gallus domesticus* (Aves)

e Analysis of *3H*-actinomycin D binding to DNA in differentiating lens cell nuclei. *Gallus domesticus* (Aves)

f Progressive accumulation of single strand breaks in nuclear DNA during lens fiber cell differentiation. *Gallus domesticus* (Aves) (with F. J. BOLLUM)

g Template activity of nuclear DNA from differentiating lens cells for DNA-dependent RNA polymerase. *Gallus domesticus* (Aves)


MODLISSKI, J. A. M.Sc. — Dept. of Embryol., Zool. Inst., Univ. of Warsaw, Krakowskie Przedmieście 26/28, WARSZAWA 64, Poland

a Fertilization and early development. *Mus musculus* (Rodentia)

MOE, H. M.D., Prof. — Anat. Dept. C, Univ. of Copenhagen. Universitetsparken 1, 2100 COPENHAGEN Ø, Denmark

a Differentiation of ameloblasts. *Rattus norvegicus* (Rodentia)

b Dedifferentiation of secretory ameloblasts and redifferentiation into transporting ameloblasts. *Same species* as a

MOFFAT, D. B. M.D., Prof. — Dept. of Anat., Univ. Coll., Cathays Park, CARDIFF CF1 3NR, Wales, U.K.

a Postnatal development of kidney

MOHLER, J. D. Ph.D., Prof. — Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA-City, Iowa 52240, U.S.A.

a The action of different genes which affect a quantitative character (crossovenliness) as modifiers of developmental responses (phenocopies) to heat shock at early pupal stages. *Drosophila melanogaster* (Diptera)

b The induction, identification, and characterization of female-sterile mutants, especially those affecting internal milieu of the egg; material for the study of oogenesis. *Drosophila melanogaster* (Diptera)

MOISEEVA, Mrs. E. B. — Azov Black Sea Res. Inst. of Marine Fish. Management and Oceanography, Lab. of Physiol. of Fishes, Sverdlov St. 2, KERCH, Crimean Region 394500, U.S.S.R.

a Experimental histophysiology of the pituitary gland and the hypothalamic region in relation with reproductive function. *Gobius melanostomus, G. batrachocophalus* (Teleostei)

MOLED (SZIRMAI), Mrs. K. M.D. — Inst. of Histol. and Embryol., Med. Univ., Tüzoltő u. 58, BUDAPEST IX, Hungary

a Teratogenesis. *Gallus domesticus* (Aves), *Rattus rattus* (Rodentia)


a Ultrastructural changes during development and germination of the embryo. *Zea mays* (Gramineae)

MONESI, V. M.D., Prof. — Ist. di Istol. ed Embriol. Gen., Univ. di Roma. Città Universitaria. 00185 ROMA, Italy

MONIE, I. W. M.B., Ch.B., Prof. — Dept. of Anat., School of Med., Univ. of California, SAN FRANCISCO, Calif. 94122, U.S.A.

a Morphology, histochemistry, and organ culture of congenital malformations of the cardiovascular, urogenital, and nervous system induced by teratogenic agents. *Rattus rattus* (Rodentia)

MONNICKENDAM, Miss M. A. M.Sc. — School of Biol. Sci., Univ. of East Anglia, University Plain, NORWICH, NOR 88C, England

a Control of cell division. *Xenopus laevis* (Anura). *Amphiuma means*, *Triturus cristatus* (Urodela)

MONROY, A. M.D., Prof. — Lab. of Molec. Embryol., Via Toiano 2, 80072 ARCO FELICE, (Napoli), Italy

MOOG, Miss F. Ph.D., Prof. — Dept. of Biol., Washington Univ., Skinker and Lindell Ave., ST.LOUIS, Mo. 63130, U.S.A.

a Development of enzyme systems in the embryo. *Gallus domesticus* (Aves), (Mammalia)

b Role of the pituitary-adrenal axis in fetal and juvenile development. (Aves; Mammalia)

c Chemo-architectural studies of differentiation of surface of intestinal epithelial cells. (Aves; Mammalia)

MOOKERJEE, S. Ph.D., Prof. — Dept. of Zool., Presidency Coll., CALCUTTA-12, W. Bengal, India

MOOR, R. M. B.Sc. — A.R.C. Unit of Reprod. Physiol. and Biochem., Univ. of Cambridge, 307 Huntington Rd., CAMBRIDGE, CB3 0Q, England

a The development and manipulation of the early embryo. (Mammalia)

b The survival and development of embryonic and somatic cells after introduction into eggs and blastocysts. *Oryctolagus cuniculus* (Lagomorpha), *Ovis aries* (Artiodactyla)

c Developmental capacity of single blastomeres and the introduction of additional nuclei
into such blastomeres. *Oryctolagus cuniculus* (Lagomorpha), *Bos taurus*, *Ovis aries* (Artiodactyla)

MOORE, Mrs. B. C. Ph.D. — Dept. of Life Sci., Univ. of California, RIVERSIDE, Calif. 92502, U.S.A.

a Chromosomal analysis of lethal racial hybrid embryos. *Rana pipiens* (Anura)


a Fertilization in vitro and in vivo. (Mammalia)

MOORE, J. A. Ph.D., Prof. — Dept. of Life Sci., Univ. of California, RIVERSIDE, Calif. 92502, U.S.A.

a Development of diploid and haploid racial hybrids. *Rana pipiens* (Anura)


a Electron microscopy of normal myoblasts undergoing active fusion, and myoblasts from dystrophic origin, especially ribosome numbers and nuclear morphology. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia), *Homo sapiens* (Primates)

MOORES, G. R. B.Sc. — Dept. of Cell Biol., Univ. of Glasgow, GLASGOW W.2, Scotland, U.K.

a Surface properties and behaviour of embryonic cells. *Gallus gallus* (Aves)

MORACZEWSKI, J. Ph.D. — Dept. of Invert. Zool., Warsaw Univ., Krakowskie Przedmieście 26/28, WARSZAWA 64, Poland

a Asexual reproduction and developmental morphology. (Catenulidae, Turbellaria)


a Heredity of determinative decisions in clones of imaginal disc cells. *Drosophila melanogaster* (Diptera)

MOREAU, R. — Lab. de Physiol. Gén., Fac. des Sci. de Bordeaux, Av. des Facultés, 33 TALENCE, France

MORETTI, R. L. Ph.D. — Dept. of Life Sci., Univ. of California, RIVERSIDE, Calif. 92502, U.S.A.

MORI, H. D.Agr., Prof. — Dept. of Biol., Keio Univ., YOKOHAMA-Hiyoshi, Japan

a Insecticide action on eggs, larvae, and adults. (Isoperta, Coleoptera and others, Insecta)

MORI, Y. M.A., Prof. — Dept. of Biol., Keio Univ., YOKOHAMA-Hiyoshi, Japan

a The cause of disappearance of cutaneous melanophores of young animals. *Carassius auratus* (Teleostei)

b Morphology and chemistry of pigment formation. Various species (Pisces)

MORITZ, K. B. Ph.D. — Zool. Inst. der Univ., Luisenstr. 14, 8000 MÜNCHEN 2, W.Germany

a Significance of the germ line limited chromatin (hybridization and renaturation). *Ascaris suis* (Nematoda)

MORRILL, G. A. Ph.D., Prof. — Dept. of Physiol., Albert Einstein Coll. of Med., Yeshiva Univ., 1300 Morris Park Ave., NEW YORK, Bronx, N.Y. 10461, U.S.A.

a The mechanism of activation of the egg: 1. the role of Ca++ in regulating membrane permeability; 2. the role of Na+ pump and phosphate exchange; 3. the relationship between changes in cytoplasmic and nuclear binding of Na+, K+, Ca++ and Mg++ and the changing metabolic states at ovulation, fertilization, and first cleavage. *Rana pipiens* (Anura)

b The tonic events that occur during blastula formation which are associated with morphogenesis and cell differentiation; the transport of cytoplasmic Na+ into the blastocoel: 1. mapping the changing electric fields at the surface of the developing embryo and correlating these fields with known patterns of cell migrations; 2. monitoring the rate of Na+ release in each of the germ layers; 3. assaying for vasopressin-like hormone activity in blastula extracts. *Rana pipiens* (Anura)


a Experimental analysis of morphogenesis in eggs. *Styela partita*, *Boltenia villosa*, *Cnimiodocarpa* (Tunicata)

b Chemical differentiation of eggs. *Lymnaea spec.* (Pulmonata, Gastropoda)

c Analyses of ooplasmic segregation. (*Pulmonata, Gastropoda*)

MORRIS, B. Ph.D. — Dept. of Zool., Univ. of Nottingham, NOTTINGHAM, England

a Antibody absorption by neonates. *Erinaceus europaeus* (Insectivora), *Rattus norvegicus* (Rodentia)

b Electron microscopy of postnatal gastric and intestinal development. *Erinaceus europaeus* (Insectivora)

MORRIS, I. G. Ph.D. — Dept. of Zool., Univ. Coll. of N. Wales, BANGOR, Caerns., Wales, U.K.

a Transmission of serum proteins across foetal membranes and neonate gut. *Mus musculus*, *Rattus norvegicus* (Rodentia)

MORRIS, Miss V. B. Ph.D. — School of Biol. Sci., Zool. Bldg., Univ. of Sydney, SYDNEY, N.S.W. 2006, Australia
a Autoradiographic study of the time preceding differentiation in different kinds of receptors in the retina. *Gallus domesticus* (Aves)

MOSCONA, A. A., Ph.D., Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 East 57th St., CHICAGO, I11. 60637, U.S.A.

MOSCONA, M. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 E. 57th St., CHICAGO, I11. 60637, U.S.A.


a Developmental physiology. *Mus musculus* (Rodentia)
b Developmental genetics. *Mus musculus* (Rodentia)
c Developmental pathology. *Mus musculus* (Rodentia)

MOSSMAN, M. — Dept. of Anat., Bardeen Med. Labs., Univ. of Wisconsin, MADISON, Wis. 53706, U.S.A.

a Comparative morphology of the fetal membranes and reproductive tracts. *(Mammalia)*

MOTOMURA, I. D.Sc., Prof. — Lab. of Embryol., Inst. of Biol., Tôhoku Univ., SENDAI, Japan


a The mechanisms regulating ontogenetic metamplasia in the esophagus. *Gallus domesticus* (Aves), *Homo sapiens* (Primates)
b Ultrastructural features of necrosis as an ontogenetic process. *Gallus domesticus* (Aves), *Homo sapiens* (Primates)
c Methyl mercury teratogenesis. *Mus musculus* (Rodentia)

MOULTON, J. M. Ph.D., Prof. — Dept. of Biol., Bowdoin Coll., BRÚNSWICK, Me. 04011, U.S.A.

a Air bladder - ear relationship in its ontogeny, and the evacuation of skeletal material for the pterotic bulla. *Brevoortia tyrannus*, *Carassius auratus* (Teleostei)

MOUTON, Miss C. D.E.A. — Lab. d’Embryol., Unité de Sci., Univ. de Caen, 14 CAEN, France

a Cytological aspects of posterior regeneration, autoradiography of DNA, RNA, and protein synthesis. *Alolobophora icterica* (Oligochaeta)

MOVITCHAN, Mrs. N. A. Cand.biol.sci. — Dept. of Embryol., Leningrad State Univ., Mendeleevsky St. 5, LENINGRAD V-164, U.S.S.R.

a Immunity of the embryo. *Halichondria panicea*, *Leiocosolina complicata* (Porifera)

MOYER, F. H. Ph.D. — Dept. of Biol., Univ. of Missouri, ST-LOUIS, Mo. 63121, U.S.A.

MOYSE, J. Ph.D. — Dept. of Zool., Univ. Coll. of Swansea, Singleton Park, SWANSEA, Glamorgan, Wales, U.K.

a Larval development. *(Cirripedia, Crustacea)*
b Embryology. *Hemioniscus balani* (Isopoda, Crustacea)

MRAZKOVA (SEVCIKOVA), Mrs. O. MUDr. — Dept. of Anat., Charles Univ., U nemocnice 3, PRAHA 2, Czechoslovakia

a Prenatal development of limb vascularisation. *Homo sapiens* (Primates)

MUELLER, G. C. M.D., Ph.D., Prof. — McArdle Lab. for Cancer Res., Univ. of Wisconsin, 450 N.Randall Ave., MADISON, Wis. 53706, U.S.A.

MULAREK, Mrs. O. M.D. — Inst. of Neurol. and Sensory Organs, Med. Acad., Przybyszewskiego St. 49, POZNÁN, Poland

a Influence of ionizing radiation on the developing central nervous system. *(Mammalia)*
b Histochemistry of glia cells in the developing nervous system. *(Mammalia)*

MULHERKAR, Mrs. L. Ph.D., Prof. — Dept. of Zool., Univ. of Poona, Ganeshkind, POONA-7, India

a Transplantations of embryonic tissues. *Gallus spec.* *(Aves)*
b Studies on -SH groups and embryonic induction. *Gallus spec.* *(Aves)*
c Factors associated with cell reaggregation. *Ephydatia meyi* (Porifera)

MÜLLER, A. J. Dr. — Inst. für Kulturpflanzenforsch. der Deutschen Akad. der Wissensch. zu Berlin, GATERSLEBEN, Kr. Aschersleben, East Germany

MÜLLER, G. H. — Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, W. Germany

a Differential local sensitivity of chromosomal template activity to inorganic ions. *Chironomus thummi* (Diptera)

MÜLLER, M. D.Sc. — Inst. of Biol., Univ. of Zagreb, Šalata 3, 41001 ZAGREB, Yugoslavia

a Regulation of compensatory growth. *Rattus norvegicus* (Rodentia)

MÜLLER, W. A. Dr. rer.nat. — Zool. Inst. der Techn. Univ., Pockelsstr. 10a, 3300 BRAUNSCHWEIG, W. Germany

a Induction phenomena in morphogenesis and polar regeneration. *Hydra spec.*, *Hydractinia echinata* (Hydrozoa)
b Enzyme activities during sexual reproduction. Same species as a
c Induction of metamorphosis by bacteria in planulas. Same species as a
d Autoradiographic studies on neuroendocrinology. *Platyneris dameri*, *Ophryotrocha puertitl* (Polychaeta)
MULNARD, J. G. M.D., Prof. — Lab. d'Anat. et d'Embryol., Fac. de Méd. de l'Univ., 97 rue aux Laines, 1000 BRUXELLES, Belgium

Morphogenesis
Development
Experimental

M.D., Ph.D.

MURAKAMI, a
MUNTZ, b
MULNARD, a
MURASHOVA, a
MURAMATSU, a
MUN, a
MUTHUKKARUPPAN, a
MURISON, a
MURRAY, a
MYSKOWSKA-BACZKOWSKA, a
MUTOLO, a

Ph.D., D.Sc.

Enhancement
Development
Gallus gallus (Aves)

The Growth
Growth
Ph.D.

Induction
Electron
Characterization
Ribosomal
Fetal
Comparative
Reticulocyte

Murine, a
MUNTZ, Miss L. — Dept. of Zool., Univ. of Reading, Whiteknights Park, READING RG6 2AJ, England

a Comparative studies on the structural development of nerves and muscles. Xenopus laevis, Eleutherodactylus martinicensis (Anura)
b Electron microscopy of muscle development and degeneration. Same species as a


a Morphogenesis of exencephaly, spina bifida and their allied conditions. Rattus norvegicus (Rodentia) (with K. HOSHINO)
b Fetal brain lesions caused by maternal administration of monosodium glutamate and allied chemical substances. Mus musculus (Rodentia) (with M. INOUE)


MURISON, G. L. Ph.D. — Dept. of Biol., Univ. of Miami, CORAL GABLES, Fla. 33124, U.S.A.

a Characterization of liver specific proteins in embryonic liver and hepatoma cells in tissue culture. Gallus domesticus (Aves), Rattus spec., Mus musculus (Rodentia)


MURRAY, Mrs. M. R. — Dept. of Anat., Coll. of Phys. and Surgeons, Columbia Univ., 630 W. 168th St., NEW YORK, N.Y. 10032, U.S.A.

MUSMECI, Miss M. T. Ph.D. — Ist. di Istol. ed Embryol., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

MUSYE, J. P. M.D. — Inst. d'Histol. et d'Embryol. Génér., Univ. de Fribourg, 1 rue Gockel, 1700 FRIBOURG, Switzerland

a Reticulocyte maturation in the embryo. Gallus spec. (Aves)

MUSY, Mrs. E. T. Dr. biol. — Lab. of Embryol., Dept. of Obstet. and Gynecol. II, Med. School, ul.Karowa 2, WARSZAWA 40, Poland

a The interdependence between somatic and germinal tissues of the gonad in experimentally obtained chimeras. Mus musculus (Rodentia)

NAAKTGEBOREN, C. Dr. — Zool. Lab., Univ. of Amsterdam, Plantage Doklaan 44, AMSTERDAM C, Netherlands

a Development of foetus with regard to birth, especially proportions of foetus and umbilical cord. (Mammalia)
b Growth of foetus as a dependent of placental size and uterine characteristics. Ovis aries (Artiodactyla) and other Mammalia
NABER, E. C. Ph.D., Prof. — Dept. of Poultry Sci., Coll. of Agric., The Ohio State Univ., 674 West Lane Ave., COLUMBUS, Ohio 43210, U.S.A.

a Nutrition and metabolism of the developing embryo. Gallus domesticus (Aves)
b Antimetabolites and morphogenesis; relationships to biochemical function. Gallus domesticus (Aves)

NACE, G. W. Ph.D., Prof. — Dept. of Zool. and Amphib. Facility, Center for Human Growth and Developm., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.

a Development and maintenance of defined strains. Rana 5 spp., Bufo 3 spp. (Anura), several spp. (Urodela)
b Transfer of macromolecules from maternal organism to egg. Rana spec. (Anura)
c Ecto- and endocytosis in larva and adult. Same species as b
d Role of specific macromolecules in fertilization. Same species as b
e Problems in developmental and population genetics. (Amphibia)

NADAMITSU, S. D.Sc., Prof. — Biol. Lab., Hiroshima Women’s Coll., 1-71 Higashi, 1 chome, Ujina, HIROSHIMA, Japan

NAKAGA, H. M.Sc. — Dept. of Anat. Mie Pref. Univ., 2-174, Edobashi, TSU, Japan

a Developmental mechanism of congenital anomalies. Mus molossinus albinus (Rodentia)

NAGANO, H. M.D. — Dept. of Biochem., Nippon Med. School, 1-1-5 Sendagi, Bunkyo-ku, TOKYO, Japan

a Control of enzyme formation and activity in liver during development. Rana catesbeiana (Anura) (with R. SHUKUYA)

NAGATA, T. M.D., Ph.D., Prof. — Dept. of Anat., Shinshu Univ. School of Med., Asahi 3, MATSUMOTO, 390 Japan

a DNA and RNA synthesis in the mitochondria of kidney and liver cells from embryonic and newborn animals in vitro. Mus musculus. Rattus spec. (Rodentia)

NAGEL, J. Dr.3e Cycle — Lab. de Physiol. Anim., Fac. des Sci., B.P. 347, 51 REIMS, France

a Hemopoietic function of the foetal liver; factors controlling its progressive disappearance. Rattus norvegicus (Rodentia) (with R. L. JACQUOT)


a The antigenicity of seminal plasma proteins (immunochemistry). Homo sapiens (Primates)

NAKAMURA, I. M.D., Prof. — Dept. of Anat., Nippon Med. School, 1-5, Sendagi 1-chome, Bunkyo-ku, TOKYO, 113 Japan

a Embryological investigation on the cardiac muscle cells, conducting system and heart innervation (electron microscopy). Gallus domesticus (Aves)


a Experimental teratology of the central nervous system. Rattus norvegicus (Rodentia), Oryctolagus cuniculus (Lagomorpha)
b Development of the blood-brain-barrier. Rattus norvegicus (Rodentia), Oryctolagus cuniculus (Lagomorpha)

NAKAMURA, O. D.Sc., Prof. — Dept. of Biol., Osaka Kyōiku Univ., Tennoji-ku, OSAKA, 543 Japan

a Causality in epigenetic formation of organizer. (Amphibia)
b Fate map and formative movements. (Amphibia)
c Cytodifferentiation during cleavage. (Amphibia)
d Ultrastructural changes during early development. (Amphibia)
e Nucleo-cytoplasmic interaction during early development. (Amphibia)
f Cell interactions in relation to cytodifferentiation. (Amphibia)

NAKANO, E. D.Sc. — Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa-ku, NAGOYA 464, Japan


a Morphogenesis of muscular elements in the blood vessel wall. Homo sapiens (Primates)
b Differentiation of motor end plates in extremity muscles. Homo sapiens (Primates; Rodentia)


a Effect of ionizing radiations on the biochemical mechanism of embryonic development. Artemia salina (Anostraca, Crustacea)
b Changes in nucleic acids and some phosphorus fractions of tissues during late embryonic and early postnatal development. Rattus norvegicus (Rodentia)
c Ca++ uptake, H+ ejection and respiration in eggs on fertilization. Anthocidaris cras-sipina, Pseudocentrotus depressus (Echinoidea)
d Development of the energy transfer system in liver mitochondria from the fetal stage. Rattus spec. (Rodentia)

NAMUR, Miss P. D.E.A. — Lab. d’Embryol., Unité de Sci., Univ. de Caen, 14 CAEN, France
a Expression des spécificités interspécifiques aux stades embryonnaires précoces. *Triturus alpestris*, T. palmatus *(Urodela)*

NANNEY, D. L. Ph.D., Prof. — Dept. of Zool., Univ. of Illinois, URBANA Ill. 61801, U.S.A.

b Genetic and developmental studies on cortical variations. *Tetrahymena pyriformis* *(Ciliata)*

NARAIN (GUPTA), Mrs. B. Ph.D. — Dept. of Zool., Univ. of Gorakhpur, GORAKHPUR (U.P.), India

b Regulation of gene action in clonal cultures. Same *species* as a


b Miss l. Dr.Biol.Sci. — Ist. di Zool. e Anat. Comp. dell'Univ., Via A. Volta 4, 56100 PISA, Italy

a Mitotic and lampbrush chromosomes. *(Amphibia)*

b Nucleoli in somatic and germ line cells. *(Amphibia)*


b Circadian rhythms of growth variables in hepatomas. *Mus musculus* *(Rodentia)*

NATSUKARI, Y. — Fish. Exper. Station, Fac. of Fish., Nagasaki Univ., Nomozaki cho, near NAGASAKI 851-05, Japan

a Embryology and life history. *Loiligo* spp., *Sepia* spp. *(Cephalopoda)*

NAUTIYAL, A. Ph.D. — Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD-2, U.P., India

a Lipid metabolism and characterization of phospholipids during development from embryo till young adult (thin layer and gas-liquid chromatography). *Philosamia ricini* *(Lepidoptera)* (with R. PANT and J. B. SINGH)

NAVAGIRI, Mrs. S. S. M.S. — Dept. of Anat., Med. Coll., NAGPUR-3, M.S., India

a Histochemistry of apical ectodermal ridge and the distal developing system of the limb; localization of enzyme responsible for early phase of differentiation. *Gallus domesticus* *(Aves)*

b Regeneration of the apical ectodermal ridge; its influence on individuation of distal limb elements (histology). Same *species* as a (with P. N. DUBEY and T. L. PATIL)

NAVARATNAM, V. Ph.D. — Anat. School, Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3DY, England

a Ontogenesis of cholinesterase and mono-amine activity in cardiac innervation. *(Mammalia), Homo sapiens* *(Primates)*

b Ultrastructure of the yolk sac. *Homo sapiens* *(Primates)*

NAYLOR, E. Ph.D. — Dept. of Marine Biol., Univ. of Liverpool, PORT ERIN, Isle of Man, U.K.

NEBEL, L.A. M.D., Prof. — Dept. of Embryol. and Teratol., Tel-Hashomer Hosp., TEL-AVIV, Israel

NEDVIDEK, J. RNDr. — Dept. of Exper. Zool., Charles Univ., Viničná 7, PRAHA 2, Czechoslovakia

a Nucleic acids and subcellular particles in oogenesis and early development. *(Amphibia)* (with V. VILÍMKOVA)

b Transplantation of nuclei in relation to nucleic acids. *(Amphibia)* (with F. SLADECEK)

NEEDHAM, A. E. D.Sc. — Dept. of Zool., Univ. of Oxford, South Parks Rd., OXFORD OX1 3PS, England

a Beryllium chloride and regeneration. *Polygecis nigra* *(Turbellaria)*

NEEDHAM, J. Dr., Prof.(Emer.) — Gonville and Calus Coll., CAMBRIDGE, England

NELSON, L. Ph.D. — Dept. of Physiol., Med. Coll. of Ohio, P.O.Box 6190, TOLEDO, Ohio 43614, U.S.A.

a Enzyme distribution and organelle reorganization associated with flagellum formation in spermigenesis. *Bos taurus* *(Artiodactyla)*, *Mus musculus* *(Rodentia)*

b Bioelectrical potentials of spermatids. *Bos taurus* *(Artiodactyla)*, *Rattus norvegicus* *(Rodentia)*

NEMER, M. — Inst. for Canc. Research, 7701 Burholme Ave., PHILADELPHIA, Pa. 19111, U.S.A.

a DNA transcription and translation of RNA in early stage embryos. *Stronglylocentrotus purpuratus*, *Lytechinus pictus* *(Echinoidae)*

NEMOTO, S. M.Sc. — Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2-1-1 chome, Fukazawa-machi, Setagaya-ku, TOKYO, 158 Japan

NETZEL, H. E. M. Dr.rer.nat. — Zool. Inst. der Univ., Hölderlinstr. 12, 74 TÜBINGEN, W.Germany

NEUMANN, D. Dr.rer.nat., Prof. — Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, W.Germany

a Lunar periodicity of metamorphosis. *Clunio marinus* *(Chironomidae, Diptera)*

NEVILLE, P. A. J. Dr.d'Etat — Lab. de Bot., Univ. de Provence, Centre St.Charles, Place Victor Hugo, 13 MARSEILLE 3, France

a Experimental morphology of pinnate leaves: 1. prevention of division of leaflet primordia
by younger ones; 2. leaf regeneration following bipartition of primordium in different places; 3. apical dominance due to young expanding leaves: effect of culture conditions, cytological changes. Gleditsia triacanthos (Leguminosae)

b Effect of leaf primordia, lateral inoffescence primordia and apical meristem on flowering. Pisum sativum (Leguminosae) (with Z. AFZAL)
c Determination on flower bilaterality (microsurgical method). Pisum sativum (Leguminosae) (with Z. AFZAL)

NEW, D. A. T. Ph.D. — Marshall Lab., Dept. of Physiol., Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3EG, England

a Study of embryos developing in vitro. (Mammalia)

NEWBURGH, R. W. Ph.D., Prof. — Dept. of Biochem. and Biophys., Fac. of Sci., Oregon State Univ., CORVALLIS, Ore. 97331, U.S.A.

a Chemical and biochemical changes during development. (Insecta)


a Role of the pigmented epithelium of the retina in the induction of the vascular and avascular coats of the eye. Gallus domesticus (Aves)

NEWTH, D. R. Ph.D., Prof. — Dept. of Zool., The University, GLASGOW W.2, Scotland, U.K.


NIAZI, I. A. Ph.D. — Dept. of Zool., Univ. of Rajasthan, JAIPUR, India

a Limb and tail regeneration. Bufo spec., Rana spec. (Anura)
b Influence of hypo- and hypervitaminosis A on ontogenetic and regenerative development in embryos and larvae. Bufo spec., Rana spec. (Anura), Gallus domesticus (Aves)
c Role of thyroid and adrenal hormones in larval limb regeneration. Same species as a
d Development of the spinal cord in larvae (histology and histochemistry). Same species as a

e Morphological and physiological differentiation of the retina and its growth from embryonic Adam. Same species as a


a Studies on the fate of the different parts of the primitive streak with the help of grafts labelled with tritiated thymidine. Gallus domesticus (Aves)
b Investigations of the primary induction process with the help of labelled precursors. (Aves)
c Role of Hensen’s node in somitic differentiation. (Aves)
d Subcellular changes during early morphogenesis (electron microscopy). (Aves) (with J. GALLERA)

NIE, C. J. van D.V.M. — Lab. of Anat. and Embryol., Free Univ., v.d. Boechorststraat 7, AMSTERDAM, Buitenveldert, Netherlands

a Ontogenetic malformations of the heart. Sus scrofa, Bos taurus (Artiodactyla)
b Pathological development of heart and vessels. Sus scrofa, Bos taurus (Artiodactyla)
c Pathological development of bone. Sus scrofa (Artiodactyla)
d Neonatal circulation. Sus domesticus (Artiodactyla)
e Teratology. (Mammalia), Homo sapiens (Primates)

NIENEN, C. mag.sci. — Marine Biol. Lab., Univ. of Copenhagen, Strandpromenaden, DK-3000 HELSINGOR, Denmark

a Life histories; comparison with Ectoprocts; phylogenetic implications. Loxosoma spec., Loxosomella spec., Pedicellina spec., Barentsia spec. (Endoprocta)

NIEUWOOP, P. D. Phil.Dr., Prof. — Hubrecht Lab. (Intern. Embryol. Inst.). Uppsalalän 1, Universitetscentrum “De Uithof”, UTRECHT, Netherlands

a The induction of the mesoderm and its cranio-caudal and dorso-ventral organization. Ambystoma mexicanum, Triturus alpestris (Urodela) (with E. C. BOTERENBROOD)
b The origin of the dorso-ventral polarity of the egg. (Amphibia) (with J. G. BLUE-MINK, K. HARA, and G. A. UBBELS)

NIGN, V. Dr.és Sci., Prof. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France

a Métabolisme dans les diverses phases de l’évolution. Euglena gracilis (Euglenophyceae)
b Différenciation des érythrocytes. Gallus domesticus (Aves)

NIIZIMA, M. M.D., Ph.D., Prof. — Dept. of Anat., Tokyo Med. and Dental Univ., 1-5-45, Yushima, Bunkyo-ku, TOKYO, 113 Japan.

a Tissue culture studies on metamorphosis. Rana catesbeiana, R. japonica, Bufo vulgaris (Anura)
b Tissue culture studies on the development and differentiation of dental tissues. Rattus norvegicus, Felis domestica, Homo sapiens (Mammalia)
c Tissue culture studies on cell differentiation. Gallus domesticus (Aves)
d Identification of fibroblasts in tissue culture. Gallus domesticus (Aves), Rattus norvegicus, Homo sapiens (Mammalia)
e Transplantation of tissue. Rana catesbeiana, R. japonica, Bufo vulgaris, Xenopus laevis (Anura), Mus musculus, Rattus norvegicus (Rodentia)

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NIKITIN, N. S. Dr. — Dept. of Embryol., Leningrad State Univ., Mendeleevsky St. 5, LENINGRAD V-164, U.S.S.R.
a Morphogenetic potentiality of somatic cells. *Ephydatia fluviatilis (Porifera)*
b Separation of different cell types (centrifugation, filtration, micro-manipulation). *Porifera*
c Development of culture media for dissociated cells. *Porifera*

a Analysis of developmental potencies of nuclei in sequential stages of oogenesis by means of their transplantation into enucleated eggs (*Acipenseridae, Chondrostei; Amphibia*)
b The influence of fractionated homogenates of some differentiating tissues (retina, muscle) on the differentiation of future ectoderm in uncleaved eggs and early stages of cleavage. *Triturus taeniatus (Urodela), Xenopus laevis (Anura), Gallus domesticus (Aves)* (with G. V. LOPASHOV)

NILSSON, J. R. Dr. — Biol. Inst., Carlsberg Found., 16 Tagensvej, DK 2200 COPENHAGEN N, Denmark
a Electron microscopy of cell regeneration after short exposure to unfavourable conditions. Tetrahymena pyriformis (*Ciliata*)

NISHIMURA, H. M.D., Prof. — Dept. of Anat., Kyoto Univ., Konoe-cho, Yoshida, Sakyo-ku, KYOTO 606, Japan
a Tests on drug teratogenicity. *Macaca fuscata (Primates)*
b Anomalies in early embryos and maternal factors. *Homo sapiens (Primates)*
c Maternal-embryonic transfer of some drugs and environmental toxicants. *Homo sapiens (Primates)*

NISHIOKA, Miss M. D.Sci. — Lab. of Amphib. Biol., Fac. of Sci., Hiroshima Univ., Higashisenda-cho, HIROSHIMA, Japan
a Synthesis of amphidiploids. (*Ranidae, Anura*)
b Synthesis of nucleo-cytoplasmic hybrids between different species. (*Ranidae, Anura*)

NISHIZU, K. — Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2-1-1 chome, Fukazawa-machi, Setagaya-ku, TOKYO 158, Japan
a Myotube formation in cultured cells. *Gallus domesticus (Aves)*

NIU, M. C. Ph.D., Prof. — Dept. of Biol., Temple Univ., Broad and Berks St., PHILADELPHIA, Pa. 19122, U.S.A.

a Perfusion of the isolated foetus. *Ovis aries (Artiodactyla)*
b Development of renal function. *Ovis aries (Artiodactyla)*
c Endocrinology of the foetus. *Ovis aries (Artiodactyla)*
d Metabolism of the placenta and the foetus. *Ovis aries (Artiodactyla)*

NOACK, W. Dr. — II. Anat. Inst. der Freien Univ. Berlin, Kön.-Luise-Str. 15, 1 BERLIN 33, W.Germany
a Development and experimental teratology of lung and muscles. *Rattus spec., Mus musculus (Rodentia)*

NODA, Y. D. Ph.D., Prof. — Biol. Inst., Ehime Univ., Bunkyo-cho, MATSUYAMA, 790 Japan
a Ultrastructural changes during fertilization in vitro. *Mesocricetus auratus, Mus musculus, Rattus spec. (Rodentia)*
b Fertilization. *Nereis spec. (Polychaeta), Urechis spec. (*Echiuroidea; Echinodermata)*

NOGAMI, H. M.D. — Dept. of Orthopaedic Surg., School of Med., Nagoya Univ., 65 Tsuruma-cho, Showa-ku, NAGOYA, Japan
a Induction, origin, and development of bone and cartilage cells (implantation, explantation). *Rattus spec., Mus musculus (Rodentia)*

NONAMI, Y. Dr. Agric., Prof. — Dept. of Biochem. and Technol. of Anim. Products, Univ. of Niigata, 106, Koganecho, NIIGATA, 950 Japan

NOODEN, L. D. Ph.D., Prof. — Dept. of Bot., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.
a Molecular mechanisms of regulation: 1. mechanism of action of maleic hydrazide; 2. control of gene expression by proteins associated with DNA. (*Plantae*)

a Primary induction and brain differentiation studied with immunofluorescence. *Gallus domesticus (Aves)*

NORMAN, C. Ph.D., Prof. — Dept. of Biol., West Virginia Univ., MORGANTOWN, W.Va. 26506, U.S.A.
a The intracellular distribution of sulphhydryl groups in embryonic, adult, and tumorous tissues. *Rana pipiens (Anura)*
b Effects of pH on the metabolism and fertilizing capacity of spermatozoa cultured in vitro. (*Mammalia*)
c Effects of light on spermatozoa. (*Mammalia*)
d Physiology and biochemistry of germ cells. (*Mammalia*)
e Physiological and biochemical basis of cell senescence.
The effect of sterols on growth and development of sexuality. *Phytophthora cactorum* (Fungi)

NORREVANG, A. D.Sc. — Inst. of Comp. Anat., Universitetsparken 15, DK-2100 COPENHAGEN O, Denmark

NORSTOG, K. J. Ph.D., Prof. — Dept. of Biol. Sci., Northern Illinois Univ., DeKalb, Ill. 60115, U.S.A.

a Development of cultured tissues. Cycadales and other spp. (Gymnospermae), cereals and other spp. (Angiospermae)

b Embryology (tissue culture and electron microscopy). *Hordeum vulgare* (Gramineae)


Sex determining genes studied at the cellular level. *Drosophila melanogaster* (Diptera)

b Genetic analysis of hybrids by means of induced mitotic recombination. *Drosophila melanogaster* x *D. simulans* (Diptera)

NOTO, T. D.Sc. — Dept. of Anat., Kagoshima Univ., 7-82 Shiroyama-cho, KAGOSHIMA, Japan

a Tissue transformations in isolated pieces of early blastoderm caused by RNA extracted from 10-day embryos, pretreated with actinomycin D. *Gallus domesticus* (Aves)

b The effects of embryonic heart RNA on the isolated crescent area and heart-forming area in the early blastoderm. *Gallus domesticus* (Aves)

c Theoretical considerations on gene differentiation.


b Mechanism of hormone action on developing genital systems. Same species as a

NOVAK, V. J. A. D.Sc. — Dept. of Physiol., Inst. of Entomol., Czechoslov. Acad. of Sci., Na Folimance 5, PRAHA 2, Czechoslovakia

NOVEL, G. Dr.spéc. — Lab. de Zool., Inst. de Rech. Biol., Univ. Scient. et Méd. de Grenoble, Cedex 53, 38 GRENOBLE, France

a Role of epidermis and dermis in feather pattern formation. *Gallus domesticus* (Aves)

b Effects of hydrocortisone treatment on skin morphogenesis. Same species as a

NOWAKOWNA, Miss J. D.Sc. — Inst. of Zool., Univ. of Wroclaw, ul.Sienkiewicza 21, WROCLAW 2, Poland

a Cytological and cytochemical studies in early development. *Embletonia pallida* (Opisthobranchia, Gastropoda)

b Experiments on morphogenetic role of endocrines in metamorphosis. (Amphibia)

NUESCH, H. Dr.sci.nat., Prof. — Zool. Anstalt der Univ., Rheinsprung 9, 4051 BASEL, Switzerland

a Metamorphosis. (Insecta)

NUGEYRE, P. — Lab. d’Histol.-Embryol., Fac. de Méd., Bd. Winston Churchill, B.P. 38, 63 CLERMONT-FERRAND, France

a Cytologie ultrastructurale du pancréas néo-natal

NUMANOI, H. Ph.D., Prof. — Biol. Lab., Sch. of Educ., Waseda Univ., Tozuka, Shinjuku -ku, TOKYO, Japan

NUSSBAUM, N. S. Ph.D., Prof. — Dept. of Biol. Sci., Div. of Sci. and Engin., Wright State Univ., Col.Glenn Highway, DAYTON, Ohio 45431, U.S.A.

b Hormonal aspects of mineralization as studied in hypophysectomized, mature animals (using regenerating scales as test objects). *Carassius auratus*, *Fundulus heteroclitus* (Teleostei)

electron micrographic aspects of scale regeneration in non-juvenile animals (autoradiography and cytochemical techniques applied at ultrastructural level). *Carassius auratus* (Teleostei)

OAKLEY, G. P. M.D. — Central Lab. for Human Embryol., Dept. of Pediat., School of Med., Univ. of Washington, SEATTLE, Wash. 98105, U.S.A.

a Blastocyst chromosomes with regard to delayed fertilization. *Rattus* spec. (Rodentia)

b Epidemiology of birth defects in spontaneous abortions and newborns. *Homo sapiens* (Primates)


a Cellular aspects of the hormonal control of metamorphosis. *Galleria mellonella*, *Plodia interpunctella* (Lepidoptera)

b Developmental behavior of imaginal discs in vivo and in vitro. Same species as a

OBIKA, M. D.Sc. — Dept. of Biol., Keio Univ., YOKOHAMA-Hiyoshi, Japan

a Correlation between pigment formation and pheromone derivatives during development. (Amphibia)

b Experimental and electron microscopic studies on the cytodifferentiation of chromatophores. *Hynobius tokyoensis*, *H. nigrescens*, *Ambystoma mexicanum*, *Triturus pyrrhogaster* (Urodela), *Xenopus laevis*, *Bufo vulgaris*, *Rana japonica* (Anura)
O'BRIEN, B. R. A. — Ph.D., Prof. — Sch. of Anat., Univ. of New South Wales, P.O.Box 1, KENSINGTON, N.S.W. 2033, Australia


a Germination of statoblasts. Lophopodella carteri (Phylactolaemata, Bryozoa)


a First formation of antigens coded for by the paternal pronucleus in merogones and inter-specific hybrids (immunofluorescence and other methods). Paracentrotus lividus, Arbacia lixula (Echinidea)

b Biochemistry of the transitions between the amoeboid and the flagellate stages. Naegleria gruberi (Rhizopoda)

O’FARREL, A. F., A.R.C.S., Prof. — Dept. of Zool., Fac. of Sci., Univ. of New England, ARMIDALE, N.S.W. 2351, Australia


a Embryonic development (maturation, cleavage). Hymenolepis diminuta (Cestodes)

b Structure and development of hexacanth embryos (oncospheres). Same species as a

c Differentiation and movement of embryonic myoblasts. Same species as a

OHASHI, Miss S. — Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2-1-1 chome, Fukazawa-machi, Setagaya-ku, TOKYO, 158 Japan

a Cell differentiation. (Echinidea)

b OHASHI, T. M.Sc. — Dept. of Anat., Mie Pref. Univ., 2-174, Edobashi, TSU, Japan

a Developmental mechanism of the central and peripheral nervous system. Hynobius nebulosus (Urodela)


OHSAKI, K. — Biol. Inst., Fac. of Sci., Univ. of Kanazawa, Marunouchi-1, KANAZAWA, Japan

a Development of egg. Dugesia japonica (Turbellaria)

b Reggregation of dissociated cells. Callyspongia elongata (Porifera)

OJEDA SAHAGUN, J. L. Dr. en Med., Prof. — Serv. de Embriol. Exper., Cat. de Anat., Univ. de Valladolid, VALLADOLID, Spain

a Biochemical and ultrastructural effects of barbituric compounds on the embryo. Gallus domesticus (Aves)

b Effect of peripheral innervation area on cellular kinetics in the central nervous system (autoradiography). Same species as a

OJIMA, Y. D.Sc., Prof. — Dept. of Biol., Kwansei Gakuin Univ., Uegahara 1, NISHINO-MIYA, Hyogo-ken 662, Japan

a Developmental genetics. Carassius auratus, Cyprinus carpio (Teleostei)

b Developmental cytogenetics. Freshwater species and hybrids (Teleostei)

OKA, H. Ph.D., Prof.(Emer.) — Inst. of Zool., Tokyo Kyōiku Univ., Otsuka 3-29-1, Bunkyo-ku, TOKYO, Japan

a Differential induction of metamorphic processes. Perophora orientalis (Asciacea)

b Laboratory culture. Clunio tsushimaensis (Diaptera)

OKADA, M. Ph.D. — Center for Pathobiol., Univ. of California, IRVINE, Calif. 92664, U.S.A.

a Effects of insect hormones on development (electron microscopy). Drosophila melanogaster (Diaptera)

OKADA, T. S. D.Sc., Prof. — Lab. of Cell Sci., Inst. of Biophys. and Molec. Biol., Fac. of Sci., Univ. of Kyoto, Sakyō-ku, KYOTO, Japan

a Factors affecting cell aggregation and cell contact. Gallus gallus (Aves) (with H. FUJISAWA and K. TAKAHASHI)

b Stability in the differentiation of chondrocytes and lens epithelial cells in clonal cell culture. Gallus gallus (Aves), Mus bacterian (Rodentia) (with G. EGUCHI and M. TAKEICHI)


OKAMOTO, M. — Lab. of Cell Sci., Inst. of Biophys. and Molec. Biol., Fac. of Sci., Univ. of Kyoto, Sakyō-ku, KYOTO, Japan

a Mechanisms of sorting out phenomena of the cells from different germ layers. Xenopus laevis (Anura), Triturus pyrrohagaster (Urodela)

OKAZAKI, Miss K. D.Sc. — Embryol. Sect., Biol. Dept., Tokyo Metropolitan Univ., 2-1-1 chome, Fukazawa-machi, Setagaya-ku, TOKYO 158, Japan

a Mechanism of spicule formation. (Echinidea)

b Myogenesis. (Aves; Mammalia)

OKKER-REITSMAN, Mrs. G. H. Drs. — Lab. for Cell Biol. and Histol., State Univ., Rijnsburgerweg 10, LEIDEN, Netherlands

a Androgen production of placenta of different ages (bioindicator test, histochemistry, chromatography). Cavia porcellus, Mus musculus (Rodentia)
OKSCH, A. Dr.med., Prof. — Anat. Inst. der Univ. Giessen, Friedrichstr. 24, 63 GIESEN, W.Germany
a Vergleichende Studien über die Entwicklung, cytologische Differenzierung, Cytodynamik und Funktion der Epiphysen und des Subcommissuralsorgans; Potenzen des Neurorhhrepithels und ihrer Realisierung. Typische Vertreter aller Klassen (Vertebrata)
OKUNO, Y. — Dept. of Biol., Osaka Kyóiku Univ., Tennoji-ku, OSAKA, 543 Japan
a Differentiation of neoblasts. Dugesia japonica (Turbellaria)
b Effect of x-irradiation on blastema. Same species as a
OLIVEREAU, Miss M. M. A. Dr.es Sci. — Lab de Physiol., Inst. Océanogr., 195 rue Saint-Jacques, 75 PARIS Ve, France
a Cytology and histochemistry of endocrine glands in relation with development, and after various experimental procedures. (Salmonidae, Teleostei)
b Pituitary grafting. Mollienisia formosa (Cyprinodontidae, Teleostei)
c Histophysiology of endocrine glands. Anguilla anguilla (Anguillidae, Teleostei)
d Hypophysal-hypothalamic relationships, with chemical inhibitors, using histological procedures. (Salmonidae: Anguillidae: Poeciliidae, Teleostei)
e Histophysiology of the pituitary gland in immature and mature animals, in correlation with osmoregulatory processes. Mugil auratus (Teleostei)
OLIVERO, M. Dr. — Inst. of Exp. Embryol., Univ. of Turin, Via Giolitti 34, 10123 TORINO, Italy
OLIVO, O. M. Prof. — Ist. di Anat. Umana Norm., Univ. di Bologna, Via Irnerio 48, BOLOGNA, Italy
OOSHI, Miss S. D.Sc. — Hamajima Marine Biol. Station, c/o Fac. of Fish., Pref. Univ. of Mie, 158 Edobashi 2-chome, TSUI, Mie Pref., 514 Japan
a Postembryonic development. (Notodelphysidae, Copepoda)
OOSTROM, C. G. van M.D. — Anat.-Embryol. Inst. Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands
a Differentiation of germ layers. (Mammalia) (with C. D. A. VERWOERD)
a Neural and behavioural aspects of embryonic development (behavioural observations, microsurgery). Gallus gallus, Anas platyrhynchos, Columba livia (Aves)
b Autoradiography of brain and spinal cord using tritiated thymidine for study of mitotic activity just prior to, and after hatching. Gallus gallus, Columba livia (Aves)
c Early embryonic transplantation of brain and sense organs between species. Gallus gallus, Anas platyrhynchos, Coturnix coturnix (Aves)
d Preliminary investigation of neural and behavioral development in pouched-youngs. Didelphis virginiana (Marsupialia)
OPPENHEIMER, Miss J. M. Ph.D., Prof. — Dept. of Biol., Bryn Mawr Coll. Bryn MAWR, Pa. 19010, U.S.A.
a Grafting of reaggregated cells from portions of the embryonic shield. Fundulus heteroclitus (Teleostei)
O’RAHILLY, R. M.D., Prof. — Dept. of Embryol., Carnegie Inst. of Washington, 115 W.University Parkway, BALTIMORE, Md. 21210, U.S.A.
a Early development (stages 1 to 9). Homo sapiens (Primates)
b Prenatal and postnatal growth of eye. Same species as a
a Correlation between cell death and cell division in lung, liver, and brain during embryogenesis. Rattus norvegicus (Rodentia)
b Humoral interconnections between analogous organs (lung, brain) of mother and foetus. Same species as a
ORNIO, Ä. M.D. — Dept. of Embryol. and Teratol., Tel-Hashomer Hosp., TEL-AVIV, Israel
ORR, C. W. — Dept. of Embryol., Carnegie Inst. of Washington, 115 W.University Parkway, BALTIMORE, Md. 21210, U.S.A.
a Animal viruses (esp. tumor viruses) as tools in studying embryonic development. Gallus gallus (Aves) (with J. D. EBERT and J. RASHI)
a Fetal membranes, giant cells, and pregnancy changes in uterine vessels. Mesocricetus auratus (Rodentia)
b Factors controlling implantation and loss of zona pellucida. Mesocricetus auratus, Rattus norvegicus, Mus musculus, Cavia porcellus (Rodentia), Mustela putorius, M. vison (Carnivora)
c Deciduation during pregnancy and pseudopregnancy. Same species as b
d Factors controlling life of corpora lutea. Same species as a
e Immunological aspects of deciduation. Same species as a
ORTIZ, Miss E. — Dr. — Dept. of Biol., Univ. of Puerto Rico, RIO PIEDRAS, Puerto Rico 00931

ORTMANN, B. Dr. rer.nat. — Pestalozzistr. 40, 208 PINNEBERG, W. Germany
a Vitamin D-Mangelerscheinungen bei Embryonen. Gallus gallus (Aves)
b Einfluss von Polyphosphaten auf Embryonen. Gallus gallus (Aves)

ORTOLANI, Miss G. D.Sc., Prof. — Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO, Italy
a Interspecific transplantation of nuclei into eggs. (Amphibia)
b Gynogenesis. (Ascidiacea)

ORTS LLORCA, F. Prof. — Dept. of Anat., Fac. de Med., Ciudad Univ., MADRID, Spain

OTERINO, Miss J. M. Biochem. — Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina

a Chemical factors involved in fertilization: jelly coats and dispersible factor. Bufo arenarum (Anura)


a Reactivity of embryonic suprarenal glands to antigens. Gallus domesticus (Aves)

a Pattern formation in imaginal discs (dissociation and in vivo culture). Drosophila melanogaster (Diptera)
b Genetics and physiology of the development of homoeotic mutants. Same species as a

OVERTON, Mrs. J. H. Ph.D., Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 E. 57th St., CHICAGO, Ill. 60637, U.S.A.

a Enzyme regulation during development; especially supernatant and mitochondrial malate dehydrogenases. Strongylocentrotus purpuratus (Echinoidea)
b RNA synthesis primed by chromatid isolated from embryos. Same species as a
c Rate of RNA synthesis and kinds of RNA synthesized in embryos animalized by zinc sulfate. Same species as a
d Developmental biochemistry, especially ribosomal RNA synthesis during oogenesis. Oryctias latipes, Brachydanio rerio, Pimephales promelas (Teleostei)

ÖZDZEŃSKI, W. Ph.D. — Dept. of Embryol., Zool. Inst., Univ. of Warsaw, Krakowskie Przedmieście 26/28, WARSZAWA 64, Poland

a Origin and differentiation of primordial germ cells. Gallus domesticus (Aves), Mus musculus (Rodentia)
b Differentiation of the somatic and germinal tissues of the gonad. Mus musculus (Rodentia)

OZEKI, K. D.Sc., Prof. — Biol. Inst., Coll. of Gen. Educ., Univ. of Tokyo, Komaba, Meguro-ku, TOKYO, Japan

PACKER, A. D. M.D. — Dept. of Anat. and Histol., Univ. of Adelaide, ADELAIDE, S.Aust. 5000, Australia
a Experimental teratology. (Rodentia)
b Incidence of congenital anomalies. Homo sapiens (Primates)


PAGEOT (SIMPSON), Mrs. P. B.Sc. (Hons.) — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France
a Transdetermination in imaginal discs after long-term culture in vivo. Drosophila melanogaster (Diptera)


PALA, Miss M. Dr. — Ist. di Zool., Univ. di Sassari. Via Murroni 25, 07100 SASSARI, Italy
a The origin of the primordial germ cells. Gambusia holbrookii, Perca fluviatilis (Teleostei), Anas spec. (Aves)

PALEČEK, J. RNDr. — Dept. of Exper. Zool., Charles Univ., Viničná 7, PRAHA 2, Czechoslovakia
a Proteins and antigens in early development. (Amphibia) (with A. ROMANOVSKY and J. MACHA)


a Mechanisms of steroid (especially estrogen and progesterone) induction of ovalbumin synthesis in the oviduct of the immature chicken. Gallus domesticus (Aves)
PANELIUS, S. Ph.D. — Dept. of Zool., Univ. of Helsinki, P.Rautatiekatu 13, 00100 Helsingi 10, Finland
a Germ line (histology, cytology) during parthenogenetic and bisexual developmental cycles; ovarian development in relation to different developmental cycles. Heteropeza pygmaea (Cecidomyiidae, Diptera)

PANGEL, M. Dr. méd., Drés Sci., Prof. — Inst. Natl. de la Santé et de la Rech. Méd., Unité de Physiol. placent., Hôp. Saint-Antoine, 184 rue du Faubourg Saint-Antoine, 75 PARIS X11, France

PANITZ, R. Dr. — Inst. für Kulturpflanzenforsch. der Deutschen Akad. der Wissensch. zu Berlin, Gatersleben, Kr. Aschersleben, East Germany

a Effects of hormones and ions on gene function. Drosophila spec. (Diptera)

PANNBÄCKER, R. G. Ph.D. — Charles F. Kettering Research Labs., 150 E. South College St., YELLOW SPRINGS, Ohio 45387, U.S.A.
a The chemical nature of aggregation hormones. Dictyostelium discoideum (Acrasiales)
b Histochemistry of differentiation at the multicellular level. Dictyostelium discoideum (Acrasiales)

PANNSEE, E. M.D. — Prof. — Inst. of Human Anat., Univ. of Milano, Via Mangiagalli 31, 20133 MILANO, Italy
a Histochemical study at the electron microscope level of the differentiation of neuroblasts in embryonic spinal ganglia. Gallus gallus (Aves)

PANT (AIYAR), Mrs. R. Ph.D. — Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD-2, U.P., India
a Lipid metabolism and characterization of phospholipids during development from embryo till young adult (thin layer and gas-liquid chromatography). Philosamia ricini (Lepidoptera) (with G. Ch. NAUTIYAL and J. B. SINGH)
b Enzymes in the egg and in the fat body from larva till young adult. Same species as a (with K. K. SHARMA)
c Cuticle proteins in egg shell, larva, and pupa (electrophoresis). Same species as a (with R. DUBEY)

PANTELLOURIS, E. M. Ph.D. — Biol. Dept., School of Biol. Sci., Univ. of Strathclyde, George St., GLASGOW C.1, Scotland, U.K.
a Effects of radiation on foetuses and means of alleviating them. Mus musculus (Rodentia)
b Ontogenesis and inheritance of iso-enzymes. Drosophila spp (Diptera), Mus musculus (Rodentia)
c Development of lymphoid tissues and immune responses. Mus musculus (Rodentia)

PAPACONSTANTINOU, J. Ph.D. — Biol. Div., Oak Ridge Natl. Lab., P.O.Box Y, OAK RIDGE, Tenn. 37830, U.S.A.

PAPILLON, J. A. Ing. — Lab. de Zool., Ecole Norm. Supérieure, 46 rue d’Ulmi, 75 PARIS Ve, France
a Kinetic studies of enzymes involved in pteridine metabolism during postembryonic development. Pieris brassicae (Lepidoptera)
b Protein polymorphism. (Lepidoptera)

PARK, Miss H. D. Ph.D. — Natl. Inst. of Arthritis and Metabol. Diseases, Bldg. 2, Rm B1-14, BETHESDA, Md. 20014, U.S.A.
a Cell division, differentiation and movement during regeneration. Hydra pseudoligactis (Hydrozoa)
b Comparison of two species with respect to budding and regeneration. Hydra pseudoligactis, H. littoralis (Hydrozoa)

PARRINELLO, N. D.Sc. — Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO, Italy
a Immunology of two subspecies. Discoglossus pictus (Anura)

a Speed of movements exhibited by small cytoplasmic inclusions in myogenic cells cultured from normal and dystrophic muscles (cinemicrography with differential interference microscopy). Mus musculus (Rodentia)

PARTANEN, C. R. Ph.D., Prof. — Dept. of Biol., Univ. of Pittsburgh, PITTSBURGH, Pa. 15213, U.S.A.
a Nuclear aspects of cellular differentiation in vitro. Allium cepa (Liliaceae), Pteridium aquilinum (Filicinaceae)
b Developmental genetics of gametophytes. Pteridium aquilinum. Ceratopteris thalictroides, Osmunda regalis, O. cinnamomea (Filicinaceae)
c Radiation and chemical induced developmental anomalies. Same species as b

PASCAUD, M. Dr., Prof. — Inst. de Recherches sur le Cancer, C.N.R.S., B.P. 8, 94 VILLEJUIF, France
a Linoleic acid metabolism and renewal in the growing animal. Rattus spec. (Rodentia)

Biochemical study of mutant gene effects on skeletal developmental abnormalities. *Mus musculus* (Rodentia)

PASCHMA, Miss M. D.Sc. — Inst. of Zool., Univ. of Wroclaw, ul. Sienkiewicza 21, WROCLAW 2, Poland

Early development and regeneration. *Enchytraeus albidus* (Oligochaeta)

PASQUINI, P. Ph.D., Prof. — Ist. di Zool. dell’Univ., Viale Regina Elena 324, (al Policlinico), 00100 ROMA, Italy

PASSAPONTI, A. M.D., Prof. — Ist. di Anat. Umana Norm., 2a Catt., Univ. di Catania, Via Biblioteca 4, 95124 CATANIA, Italy

The morphogenesis of anencephaly. *Homo sapiens* (Primates)

a The development of the inguinal canal. Same species as a
b The development of the caudal mesoderm. Same species as a


d Capacità formative degli epitelii di rivestimento nell’embrione. *Gallus domesticus* (Aves)

PASTEELS, J. J. M.D., Prof. — Lab. d’Anat. et d’Embryol., Fac. de Méd. de l’Univ., rue aux Laines 97, 1000 BRUXELLES, Belgium

Acid phosphatases in the egg (electron microscopy). *Barnea candida* (Lamellibranchia) and other species

PASTISSON, C. Dr. en Biol. — Lab. de Biol. Cell., Fac. des Sci., B.P. 347, 51 REIMS, France

Spermiogenesis and oogenesis. *Hirudo medicinalis* (Hirudinea)

PATIL, T. L. M.S. — Dept. of Anat., Med. Coll., NAGPUR-3, M.S., India

Regeneration of the apical ectodermal ridge: its influence on individuation of distal limb elements (histology). *Gallus domesticus* (Aves) (with P. N. DUBEY and S. S. NAVA-GIRI)

PATRICOLO, Miss E. Dr. nat. sci., Prof. — Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO

Cellular aggregations. *(Amphibia)*

e Egg histochemistry. *Sabalariidae, Polychaeta*

Collagen in embryos. *Ascidiacea*


Development of the ventricular wall especially the conductionary system and the blood supply. *Homo sapiens* (Primates). *Sus domesticus* (Artiodactyla)


Developmental pathology (cancer)

PAUTOU (MÉRIC), Mrs. M. P. Dr. spéc. — Lab. de Zool., Inst. de Rech. Biol., Univ. Scient. et Méd. de Grenoble, Cedex 53, 38 GRENOBLE, France

Interaction between limb bud ectoderm and mesoderm in xenoplastic associations; the competition between mesoderm of two species. *Gallus domesticus*, *Anas boschas* (Aves)

Interaction between wing and leg bud ectoderm and mesoderm in xenoplastic associations. Same species as a

c Electron microscopy of the development of the interdigital spaces; mechanism of programmed cell death. *Gallus domesticus*, *Anas boschas*, *Coturnix c. japonica* (Aves)

d Effect of various agents on the development of the foot. Same species as c

PAVAN, C. Ph.D., Prof. — Dept. of Zool. Univ. of Texas at Austin, AUSTIN, Tex. 78712, U.S.A.

da DNA, RNA, and protein synthesis in polyclene chromosomes in development of normal and infected larvae. *(Sciaridae, Diptera)*

PAVÉ, A.-G. Ing., Dr. spéc. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France

Thermogenèse de l’oeuf. *Bombyx mori* (Lepidoptera)

PALOWITZKI, I. H. Dr. med. — Inst. für Humangenetik, Westf. Wilhelms Univ., Vesa-
lusweg 12-14, 44 MÜNSTER, W. Germany

Genotype-phenotype correlations: morphology of the placenta in chromosomally abnormal spontaneous abortions. *Homo sapiens* (Primates)

B Maternal/paternal origin of supernumerary chromosomes in spontaneous abortions using chromosome polymorphism as seen after atebrin-fluorescence. *Homo sapiens* (Primates)

PAŁEWSKA, Mrs. M. — Dept. of Histol. and Embryol., Warsaw Agric. Univ., ul. Grochowska 272, 201 132 WARSZAWA, Poland

Histochimistry of gonad differentiation. *Boo spec.* (Artiodactyla)

PAYEN, Miss G. G. — Lab. d’Evol. des Etres Organisés, Fac. des Sci., 105 Bd. Raspail, 75 PARIS VIe, France

Formation and development of the androgenic glands: their control by neurosecretion. *Callinectes sapidus*, *Rithropanopeus harrisii*, *Carcinus maenas* (Decapoda, Crustacea)

b Organogenesis of the genital apparatus in larval stages. Same species as a

a Effects of antiserum made from total egg homogenate, whole embryo extract, and specific egg and embryo products on development. Acanthaster planci (Asteroidea).
b Effects of inhibitors of mitosis (e.g. colcemid) and DNA synthesis (e.g. 5-bromodeoxyuridine) on the formation of crystallins in the lens placode (immunofluorescence and peroxidase-labeled antibodies). Gallus domesticus (Aves).


a Activity of enzymes related to pentose phosphate pathway and steroid biosynthesis correlated to the functional differentiation of the adrenal gland in the embryo. Gallus domesticus (Aves).

PEDERSEN, K. J. Ph.D. — Inst. of Gen. Zool., Univ. of Copenhagen, 15 Universitetsparken. DK 2100 COPENHAGEN Ø, Denmark

a Formation of connective tissue filaments in regenerating animals. Dugesia tigrina (Turbellaria).
b Cytology and cytchemistry of starving animals. Same species as a

c Cellular basis for regeneration. Lineus ruber (Nemertea).


a Cell relations in tissue culture. Gallus gallus (Aves), Mus musculus (Rodentia) (with M. ABERCROMBIE and J. E. M. HEAYSMAN).

PEHLEMANN, F.-W. Dr. — Anat. Inst. der Univ., Neue Univ. Eingang F 1, 23 KIEL, W.Germany

a Ultrastructural morphogenesis of endocrine glands (adenohypophysis, adrenal, thyroid). (Amphibia, Mammalia).
b Ultrastructure of amitotic cell division. (Amphibia, Mammalia).

PELLING, C. Dr. — Max-Planck-Instit. für Biol. Abt. Beermann, Spemannstr. 34, 74 TÜBingen, W.Germany

PENER, M. P. Ph.D. — Dept. of Entomol., The Hebrew Univ., JERUSALEM, Israel

a Effect of temperature and humidity on embryonic development and their role in embryonic diapause. Schistocerca gregaria, Oedipoda miniata and other spp. (Orthoptera).
b Hormonal effects on oocyte development and on egg-laying. Homorocoryphus nitidulus (Tettigoninae), various spp. (Acrididae, Orthoptera).


PENTZ, S. Dr.phil. — Heiligenberg Inst., 7799 HEILIGENBERG, Baden, W.Germany

a Röntgeninduktion von Mutationen an Flügelschuppen. Plodia interpunctella (Lepidoptera).
b Zyklus der Flügelschuppen an der Diapause. Same species as a

PERKOWSKA (MOSER), Mrs. E. Ph.D. — Zaulek 28, Zoliborz, WARSZAWA, Poland

PERLMANN, H. P. Ph.D. — Wenner-Gren Inst., Norrtullsgatan 16, S-113 45 STOCKHOLM, Sweden

PERRIER, Mrs. H. D.E.S. — Lab. de Physiol. Anim., Fac. des Sci., B.P. 347, 51 REIMS, France

a Electron microscopy of the foetal and perinatal pancreas. Rattus norvegicus (Rodentia).


C Ultrastructural and experimental study of cleavage. Triturus alpestris (Urodela), Xenopus laevis (Amura).

PERSAUD, T. V. N. M.D., Ph.D. — Dept. of Anat., Fac. of Med., Univ. of Manitoba, 750 Bannatyne Ave., WINNIPEG 3 Man., Canada

a Embryopathic activity of the active principles contained in West Indian medicinal plants. Rattus norvegicus, Mus musculus (Rodentia), Oryctolagus cuniculus (Lagomorpha).
b Teratogenic activity of psychotropic substances (cannabis, LSD etc.). Rattus norvegicus (Rodentia), Oryctolagus cuniculus (Lagomorpha).
c Ontogenetic pattern of enzymes in normal and abnormal development (histochemistry, biochemistry). Rattus norvegicus (Rodentia).

PERSOV, G. M. Dr.biol.sci. — Biol. Inst., Leningrad State Univ., LENINGRAD B-164, U.S.S.R.

a Sex differentiation. (Chondrostei; Teleostei).
b The process of gametogenesis under ionizing radiations. Same species as a

PETERS, A. Ph.D., Prof. — Dept. of Anat., Boston Univ., 80 East Concord St., BOSTON, Mass. 02118, U.S.A.

a Electron microscopic study of the formation of myelin sheaths and development of neuroglial cells in the central nervous system. Rattus domesticus (Rodentia).

PETERS, Mrs. H. M.D. — Finsen Lab., Finsen Inst., 49 Strandboulevarden, 2100 COPENHAGEN Ø, Denmark
a Development of the ovary and the uterus: morphology, cell dynamics and function. *Mus musculus* (Rodentia)
b The effect of hormones (testosterone propionate) on ovary development in infancy. Same species as a
c Oogenesis. Various spp. (*Mammalia*)

PETRUS, J. J. Ph.D., Prof. — Dept. of Biol., Xavier Univ., Victoria Parkway, CINCINNATI, Ohio 45207, U.S.A.
a Episodes of conspicuously rhythmic electroencephalographic activity following hypothermic hypoxia in embryos between 15th and 20th day of incubation. *Gallus domesticus* (Aves)

PETZOLDT, U. Dr.rer.nat., Prof. — Inst. für Hydropool. und Fisch.wiss., Univ. Hamburg, Obersweg 24, 2 HAMBURG-Altona 1, W.Germany
a Effect of metabolic inhibitors on different developmental stages. *Rivulus cylindraceus*, *Anguilla anguilla* (Teleostei)
b Development of eye-rudiments in cave-fish. *Astyanax mexicanus* (Characiniidae, Teleostei)

PETZOLI, G. — Dr.med. — Anat. Inst. der Univ. Giessen, Friedrichstr. 24, 63 GIESSEN, W.Germany
a Alterations in tissue differentiation after x-ray treatment. *Triturus alpestris* (Urodeula)
b Intravital microscopy of normal and x-ray treated blastomeres. Same species as a

PETRUCI, D. — Inst. of Gen. Biol., Univ. of L’Aquila, L’AQUILA, Italy
a Biochemical regulation mechanisms in the glycolytic and pentose phosphate pathways and citric acid cycle of eggs and embryos. *Bufo bufo*, *Rana esculenta*, *Xenopus laevis* (Anura), *Triturus cristatus* (Urodela)
b Anabolic and oxidative reactions of mitochondria isolated from eggs and embryos. *Bufo bufo*, *Rana esculenta* (Anura)

PETRY, G. — Dr.med., Prof. — Anat. Inst., Univ. Marburg, Robert-Koch-Str. 6, 355 MARBURG/Lahn, W.Germany
a Experimental developmental morphology of preimplantation stages, postimplantation stages and their endocrinological developmental control. *Oryctolagus cuniculus* (Lagomorpha). Cavia porcellus, *Rattus* spec. (Rodentia)
b Peto-maternal relationship, especially reactions to endometrial cells (giant cells). *Oryctolagus cuniculus* (Lagomorpha)

PEXIEDER, T. M.D. — Inst. d’Histol. et d’Embryol., Univ. de Lausanne, 9 rue Bugnon, 1011 LAUSANNE, Switzerland
a Tissue dynamics of heart morphogenesis. *Gallus domesticus* (Aves)
b Experimental morphology of the aortic arches and branchial arches. *Gallus domesticus* (Aves)
c Embryophysiology of the circulation in the aortic arches and the heart. *Gallus domesticus* (Aves)
d Cell death in the development of the heart. *Gallus domesticus* (Aves)

PFLUGFELDER, O. — Dr.rer.nat., Prof. — Inst. für Allgem. und Spez. Zool., Naturwissensch. Fak., Universität Hohenheim, 70 STUTTGART 70, W.Germany
a Anderung des Stoffwechsels nach Störung des hormonalen Gleichgewichts. (Insecta)
b Histophysiologie der Corpora allata nach experimenteller Beeinflussung. (Insecta)
c Biomorphose
d Egg formation in giant animals. *Carausius morosus* (Phasmda)
e Embryologie. *Dactylopus coccus* (Coccina, Homoptera)

PHILLIPS, H. M. Ph.D. — Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTEVILLE, Va. 22903, U.S.A.
a Measurement of intercellular adhesiveness in cohering populations of embryonic cells. *Gallus domesticus* (Aves)

PHILLIPS, J. W. Ph.D., D.Sc. — Dept. of Physiol., Univ. of Manitoba, 770 Bannatyne Ave., WINNIPEG 3, Man., Canada
a Descriptive morphology and histochemistry, and experimental morphology of the cerebellum (C.R. length 2 cm until after birth). *Felis domestica* (Carnivora)

PHILPOTT, G. W. M.D. — Dept. of Surg., Washington Univ., ST.LOUIS, Mo. 63110, U.S.A.

a Ultrastructural aspects of lens development: 1. Protein synthesis; 2. The role of microtubules. *Gallus domesticus* (Aves)
b Mitochondrial RNA and protein synthesis in eggs; RNA synthesis during oogenesis. *Lytechinus pictus*, *Strongylocentrotus purpuratus* (Echinodea)

PICHERAL, B. Dr.3ème Cycle — Lab. de Biol. Gén., Fac. des Sci., 35 RENNES, France

PICKWORTH, Miss S. Ph.D. — Dept. of Zool., Univ. of Bristol, BRISTOL BS8 1UG, England


- Correlations between glutamine synthetase development and specific histological, biochemical, and physiological events in the functional maturation of nervous tissue. Gallus domesticus (Aves)

PIEALI, Cl. Licés Sci. — Serv. d’Embryol. Expér., Inst. Pasteur, 20 rue des Moulins, 95 SANNOIS, France

- The mechanism of sexual differentiation. Cistudo europaea, Testudo graeca (Chelonia)
- Effects of x-rays on embryonic development. Lacerta viridis, Anguis fragilis (Lacertilia) (with J. VASSE)
- The mechanisms of arrest of the elongation and of degeneration of Müllerian ducts in male embryos. Lacerta viridis (Lacertilia), Cistudo europaea (Chelonia) (with A. RAY-NAUD)

PIERRO, L. J. Ph.D., Prof. — Dept. of Anim. Genet., Storrs Agric. Exper. Station, Univ. of Connecticut, STORRS, Conn. 06268, U.S.A.

- Chemical teratogenesis: inhibitors of nucleic acid and protein metabolism. Gallus domesticus (Aves)
- Gene interaction in the control of formation of specific melanin granules. Mus musculus (Rodentia)
- Eye development. Same species as b
- Developmental genetics. Same species as a


- Etude expérimentale du développement post-embryonnaire du système trachéen. Brachyeca, Diptera (avec F. STEPHAN)


- Oogenesis, spermatogenesis, spermio genesis, fertilization and parthenogenesis. Carausius morosus (Phasminida), (Acari, Arachnida)
- Embryonic development in eggs without a micropyle and in normal eggs without abnormal conditions. Carausius morosus (Phasminida)


PILKINGTON, J. B. Ph.D. — Dept. of Zool., Univ. of Otago, DUNEDIN, New Zealand

- Physiology of calcified endolympathic deposits during metamorphosis. Hyla aurea (Anura)

PILLERI, G. Dr.med., Prof. — Brain Anat. Inst., Untere Zollgasse 71, (Waldau), 3072 OSTERMUNDIGEN-BE. Switzerland

- Entwicklung des Gehirns. Castor canadensis (Rodentia)
- Die Protuberantia sclerae am embryonalen Auge. Homo sapiens (Primates)
- Oogenese des Auges. Balaenoptera physalus, B. acutorostrata, Megaptera novaengliae, Delphinus delphis, Tursiops truncatus, Delphinapterus leucas (Cetacea)
- Entwicklung der Körperform. Same species as c
- Oogenese des Zentralnervensystems. Same species as c
- Oogenese (especially nervous system). Globiceps melaea (Odontoceti, Cetacea)
- PINEAU, H. — Lab. d’Anat., Univ. Paris V — René Descartes, 45 rue des Saints Pères 75 PARIS 6e, France

- Longitudinal study of general growth. Homo sapiens (Primates)

PINET, J.-M. Dr.âs Sci. — Inst. Natl. Agronomique, Lab. de Zool., 16 rue Claude-Bernard, 75 PARIS 5e, France

- Development and electrophysiology of sense organs in the mouth-parts. Rhodnius prolixus (Heteroptera)
- Development of the integument, especially studies of the chitinogenic cell of the maxillary bud. Rhodnius prolixus (Heteroptera)

PINGANAUD (PERRIN), Mrs. G. Dr.Spéc. — Lab. d’Anat. Comp., Univ. Paris VII, 2 Place Jussieu, 75 PARIS Ve, France

- Experimental study of chondrocranium and bony skull. Salmo irideus (Teleostei)
- Regeneration of the frontal bone. Same species as a

PIPA, R. L. Ph.D., Prof. — Div. of Entomol., Univ. of California, BERKELEY, Calif. 94720, U.S.A.

- Movements of neuroglia associated with shortening of ventral nerve cord in early pupa; regulation by edcysone in vitro: nucleic acid synthesis within these glial cells (autoradiography): effects of metabolic inhibitors. Galleria mellonella (Lepidoptera)

PIPENNO, Mrs. A. Dr.âs Sci. — Inst. de Biol. Moléc., Fac. des Sci., Tour 43, 9 quai St.Bernard, 75 PARIS Ve, France

- Expression of differentiation in liver cells in culture. Rattus spec. (Rodentia)
PIRrone, Miss A. M. — Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

a RNA synthesis in early development. Paracentrotus lividus (Echinoidea)

PLAS, Mrs. C. Dr.3e Cycle — Lab. de Physiol. Anim., Fac. des Sci., B.P. 347, 51 REIMS, France

a Pre- and postnatal changes in glucose and glycogen metabolism of the liver cell; in vivo and in isolated cultured hepatocytes. Rattus norvegicus (Rodentia) (with R. L. JACQUOT)

PLASOTA, K. J. M.Sc. — Dept. of Vert. Zool., Univ. of Warsaw, Krakowskie Przed-mieście 26/28, WARSZAWA 64, Poland

a Development of the chorionicranium and ossification of the bony skull. Rana temporaria, Pelobates fuscus (Anura)

PLEEGING, J. H. Med.Drs. — Dept. of Anat. and Embryol., State Univ. of Groningen, Oostersingel 69, GRONINGEN, Netherlands

a Topographical relationships in the intestine during ontogenesis. Mus musculus (Rodentia)

b The origin of the pronephric duct. Mus musculus (Rodentia)

PLESNER, P. M.D., Prof. — Dept. of Molec. Biol., Odense Univ., 230 Hjallesvejej, 5000 ODENSE, Denmark

POELS, C. L. M. Ph.D. — Center for Pathobiol., Univ. of California, IRVIN, Calif. 92664, U.S.A.

a Various developmental characteristics induced by ecdysone, especially correlation of the functional and structural occurrences in tissues stimulated by ecdysone, e.g. in salivary glands. Drosophila melanogaster (Diptera)

POLEY, H. J. Dr., Prof. — Inst. für Entwphysiol., Univ. zu Köln, Gyrhofstr. 17, 5 KÖLN 41, W.Germany

a Theoretical and experimental Untersuchungen über 1) Regeneration and Häutung, 2) Regulation des Zellteilungswachstums. Ephestia kühniella (Lepidoptera), Periplaneta americana (Blattariae)

b Modelldarstellung entwicklungsphysiologischer Systeme mit Hilfe von programmgesteuerten Rechenanlagen


a Ultrastructure of the seminiferous tubules including spermatocytogenesis, spermatocytes, spermiogenesis, Sertoli cell development, and interstitial tissue. Rana clamitans, R. pipiens (Anura)

b Localization of acrosomal enzymes during sperm maturation and fertilization at the ultrastructural level. Mus musculus (Rodentia)

POLACK, M. — Arbeitsgr. Prof. G. H. M. Gottschewski am Max-Planck-Inst. für Immunbiol., Stefan-Meier-Str. 8, 78 FREIBURG i.Br., W.Germany

a Differentiation of primordia analysed by the use of teratogenic substances. Cavia cobaya (Rodentia)

POLANI, P. E. M.D., Prof. — Paediat. Research Unit, Guy’s Hosp. Med. School, LONDON S.E.1, England

a Meiosis. Mus spec., Acomys spec., Microtus spec. (Rodentia), Homo sapiens (Primates)

POLEZHAVEV, L. V. Dr.biol.sci., Prof. — Inst. of Developm. Biol., Acad. of Sci. of the U.S.S.R., Vavilov St. 26, MOSCOW 117133, U.S.S.R.

a Regeneration of cranium bones. Mus domesticus, Rattus norvegicus, Oryctolagus cuniculus, Felis domestica, Canis familiaris (Mammalia)

b Regeneration of dental tissue. Canis familiaris (Carnivora)

c Regeneration of myocardium. Rattus norvegicus, Oryctolagus cuniculus, Felis domestica, Canis familiaris (Mammalia)

d Restoration of regeneration capacity of limbs after x-irradiation. Ambystoma mexicanum (Urodela) (with N. A. TEPLITZ and S. J. TUCHKOVA)

e Physiological regeneration of the brain. Felis domestica, Rattus norvegicus (Mammalia)


a Factors influencing fertilization and early embryonic development (effects of age of gametes, administration of drugs, and hormones, in vitro treatments and transplantations). Sus scorfa (Artiodactyla)


a Morphogenesis during somatic embryogenesis. Hydra oligactis, Obelia geniculata, Coryne loveni (Hydrozoa)

PONTIER, J. Dr.és Sci. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I. 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France

a Analyse factorielle appliquée à l’étude de la morphogenèse. Myzus persicae (Aphididae, Hemiptera)

POPOV, V. V. Dr.biol.sci., Prof. — Chair of Embryol., Biol. Fac., State Univ. of Moscow, Lenin Hills, MOSCOW B-234, U.S.S.R.

a Induction of cornea. Lymnaea stagnalis (Gastropoda)
b The influence of conditional stimulation of the retina on Wolffian lens regeneration. *Triturus taeniatus* (Urodela)

POPP, R. A. Ph.D. — Biol. Div., Oak Ridge Natl. Lab., P.O.Box Y, OAK RIDGE, Tenn. 37830, U.S.A.

PORCELLI, Miss F. Dr. — Inst. of Histol. and Embryol., Univ. of Pavia, Piazza Botta 10, 27100 PAVIA, Italy

a The differentiation of skin. Salmo irideus, *S. fario* (Teleostei)
b The differentiation of the mucous cells of the gills. Same species as a

PORRAS de CARRERO, Mrs. I. Lic. Bio. — Cat. de Embriol., Fac. de Med., Univ. de Los Andes, MÉRIDA, Venezuela

d Development of the vascular system in limb muscles (injected specimens). *Homo sapiens* (Primates)

PORTER, K. R. Ph.D., Prof. — Dept. of Molec., Cell., and Developm. Biol., Univ. of Colorado, BOULDER, Colo. 80302, U.S.A.

PORTMANN, A. Dr.Phil., Prof.(Emer.) — Zool. Anstalt der Univ., Rheinsprung 9, 4051 BASEL, Switzerland

a Embryology. *(Opisthobranchia, Gastropoda; Aves; Mammalia)*
b Morphological comparative analysis of early postembryonic development. *(Aves; Mammalia)*

POISONVEC, Mrs. J. M.D., D.Sc., Prof. — Inst. of Histol. and Embryol., Univ. of Zagreb, Salata 3, P.O.Box 166, 41001 ZAGREB, Yugoslavia

a Anomalies of spermatogenesis due to disorders in testis development. *Homo sapiens* (Primates)
b Appearance and pattern formation of reticulin fibers during ontogenesis of the testis. Same species as a
c Embryonic development of the parotid gland. Same species as a

POSTLETHWAIT, J. H. Ph.D. — Dept. of Biol., Univ. of Oregon, EUGENE, Ore. 97403, U.S.A.

a The clonal nature of determination in homoeotic mutants. *Drosophila melanogaster* (Diptera)
b The mechanism of action of homoeotic mutants. Same species as a
c The heritability of sex determination in triploid intersexes. Same species as a
d The role of the cortex in early development. Same species as a
e The hormonal control of metamorphosis. Same species as a

POULSON, D. F. Ph.D., Prof. — Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, Conn. 06520, U.S.A.

a Mid-gut: genesis and differentiation. *Drosophila melanogaster* (Diptera)
b Chromosomal control of differentiation. *Drosophila melanogaster* (Diptera)
c Neurogenesis in normal and genetically deficient embryos. *Drosophila melanogaster* (Diptera)
e Developmental genetics. *Drosophila melanogaster* (Diptera)

POURANY, Miss R. M.Sc. — Dept. of Anat., Jawaharlal Inst. of Postgrad. Med. Educ. and Research, PONDICHERRY-6, India

a Histogenesis of islets of Langerhans. *Homo sapiens* (Primates)


a Action of ultrasound on embryos. *Triturus helveticus* (Urodela)
b Cytology of neonatal liver: differentiation of intercellular junctions, characters of micro-bodies; histochemical differentiation. *Mus musculus* (Rodentia) (with J. P. TURCHINI and P. MALET)

POURRÉAU (SCHNEIDER), Mrs. N. M. Dr.es Sci. — Lab. d’Embryol. Expér. du Coll. de France et du C.N.R.S., 11 Place M.Berthelot, 75 PARIS Ve, France

a Use of organ culture and suspension culture techniques for the study of functional testicular interstitial cell tumors. *Mus musculus, Rattus norvegicus* (Rodentia)
b Establishment of cell lines from a rat testicular interstitial cell tumor for studies on the functional capacities of isolated Leydig tumor cells. *Rattus norvegicus* (Rodentia)
c Hormonal effects of a rat testicular interstitial cell tumor on the developing genital tract in organ co-culture. Same species as b
d Physiological effects of a Leydig cell tumor on the female. Same species as b


a Normal and abnormal closure and fusion of primary and secondary palate (tissue culture, histochemistry, histology). *Rattus norvegicus, Mus musculus* (Rodentia), *Homo sapiens* (Primates)
b Morphogenesis and cytogenesis of tooth buds. *Rattus norvegicus, Mus musculus* (Rodentia)

PRAHLAD, K. V. Ph.D., Prof. — Dept. of Biol. Sci., Northern Illinois Univ., DeKALB, Ill. 60115, U.S.A.
a Study of induced metamorphosis: histological maturity and the development of tissue sensitivity to thyroid hormones in the embryo; biochemical changes evoked by thyroid hormones in embryonic and adult susceptible tissues. *Ambystoma mexicanum, A. tigrinum, Necturus maculosus* (Urodela)

b Comparative study of hypothalamo-pituitary-thyroid axis in pre- and post-metamorphic animals. *Ambystoma mexicanum, A. tigrinum, Necturus maculosus* (Urodela)

c Biochemical and morphological effects of thyroid hormones on embryonic tissues. *Xenopus laevis* (Anura)

PRASAD, M. R. N. Ph.D., Prof. — Dept. of Zool., Univ. of Delhi, DELHI-7, India


PRATT, C. W. McE. M.D. — Anat. School, Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3DY, England

a Development of skeletal tissue

PRAY, T. R. Ph.D., Prof. — Dept. of Biol. Sci., Univ. of S.California, University Park, LOS ANGELES, Calif. 90007, U.S.A.

a Development of the gametophytes and juvenile stages of the sporophytes (*Cheilantheae, Pteridaceae, Filicinaceae*)

b Development of the vein systems of leaves. *Anemia* spec., *Marsilea* spec., *Cryttonium* spec., *Acrostichum* spec. and other spp. (*Filicinaceae*)

c Factors controlling planes of cytokinesis in early gametophyte development. *Cheilanthes* spp. (*Pteridaceae, Filicinaceae*)

PREDA, V. G. M.D., Prof. — Cat. de Biol.-Histol., Inst. de Med. și Farmacie, St. Pasteur 6, CLUJ, Rumania

a Influence de la température d’incubation sur l’infrastructure et l’immunomorphologie de l’embryon. *Gallus* spec. (*Aves*)

b Affrontation d’organes embryonnaires in vitro. *Rattus* spec. (*Rodentia*)

c Action de l’hormone gonadotrope chorale sur la différenciation sexuelle. *Zea* mays, *Cannabis sativa* (Angiospermae)


a Ultrastructure of embryos. Various spp. (*Rodentia*)

b Fertilization: kinetics and nature of block to polyspermy. (*Echinodermata*)

c In vitro development of peripheral elements of embryonic autonomic nervous system (ultrastructure, histochemistry, pharmacology). *Gallus domesticus* (*Aves*), (*Rodentia*)

d Effects of oestrogen and progesterone on uterine environment and blastocyst in delayed implantation. *Rattus* spec. (*Rodentia*)

PRESS, N. Ph.D., Prof. — Dept. of Zool., Univ. of Wisconsin, MILWAUKEE, Wis. 53201, U.S.A.

PRESTIGE, M. C. M.A. — Physiol. Dept., Med. School, Univ. of Edinburgh, Teviot Place, EDINBURGH EH8 9AG, Scotland, U.K.

a Development of neuromuscular apparatus of hind limb: differentiation of nerve cells, electron microscopy of fibres, autoradiographs of neuronal birthday, development of connections, possibility of disconnections. *Xenopus laevis* (Anura)


a Morphogenesis. *Naegleria gruberi* (*Rhizopoda*)

PRICE, Miss D. Prof.(Emer.) — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 E. 57th St., CHICAGO, III. 60637, U.S.A.

PRIESTER, W. de M.Sc. — Zool. Lab., Univ. of Leiden, Kaiserstr. 63, LEIDEN, Netherlands

a Electron microscopy of developmental stages. *Calliphora erythrocephala* (*Diptera*)

PRINS, G. H. Drs. — Dept. of Med. Anat. and Embryol., State Univ. of Utrecht, Janskerkhof 3A, UTRECHT, Netherlands

a Aetiology and pathogenesis of Hirschsprung’s disease and comparable disorders, normal and abnormal development of intramural ganglia in colon and rectum; probable causes and prevention. *Gallus domesticus* (*Aves*), *Rattus* spec. (*Rodentia*), *Homo sapiens* (*Primates*)

b Maternal influences (various diseases, pharma, nutrition etc.) on fetal development: birth influences on neonate. *Gallus domesticus* (*Aves*), *Rattus* spec., *Mus musculus* (*Rodentia*), *Homo sapiens* (*Primates*)

PRINS, H. J. — Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O, Netherlands

a Analysis of fracture repair. *Ambystoma mexicanum* (*Urodela*) (with H. A. L. TRAMBUSCH)


a The role of cell surface determinants in tissue organization and interaction. *Mus musculus* (*Rodentia*)

b The biochemical basis of abnormalities in eye development. Same species as a
RAEKALLIO, J. M.D., Prof. — Dept. of Forensic Med., Univ. of Turku, Kiinamyllyntaku 10, 20520 TURKU 52, Finland

a Biochemical characterization of enzymes appearing in early wound healing. Rattus spec., Cavia spec. (Rodentia) (with P.-L. MAKINEN)
c Enzyme histochemistry of skin transplants (allografts and homografts). Rattus spec., Cavia spec. (Rodentia) (with P.-L. MAKINEN)

RAFFERTY, R. A., Jr., Ph.D., Prof. — Dept. of Anat., Univ. of Illinois, 1853 W. Polk St., P.O.Box 6998, CHICAGO, III, 60680, U.S.A.
a In vitro longevity of fetal versus adult cells; longevity compared to life expectancy of donor. (Primates and other Mammalia)


a Embryogenesis. Testudo graeca (Chelonia)

RAISMAN, J. S. — Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMAN, Argentina

a Fertilization: 1. acrosome reaction; 2. oviducal factors; 3. protein synthesis. Bufo arenarum, Leptodactylus chaquensis (Anura)

RAJTOVA, Miss V. M.V.Dr. — Anat. Inst., Vet.-Med. Fak., Komenského 71, KOSICE, Czechoslovakia

a Ossifikation des Skeletts, insbesondere des Primordialkraniums. Cavia porcellus (Rodentia)

b Morphogenesis of the chondrocranium. Cavia porcellus, Mesocricetus auratus (Rodentia)
c Morphogenesis of carpus and tarsus. Ovis aries, Capra hircus (Artiodactyla)
d Skeletal development. Same species as c


a Normal and pathological development of limbs, particularly paralytic hindlimb deformities associated with spina bifida. Rattus norvegicus (Rodentia), Homo sapiens (Primates)

RAMACHANDRAN, A. V. M.Sc. — Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA-2, India

a Tail regeneration in the adult. Mabuya carinata (Lacertilia)

RAMSEY, Miss E. M. D. — Dept. of Embryol., Carnegie Inst. of Washington, 115 University Parkway, BALTIMORE, Md. 21210, U.S.A.

a Placentation; study of placental structure, development and vasculature. Macaca mulatta, Homo sapiens (Primates)
b Determinations of blood, amniotic and intervillous space pressures throughout pregnancy. Macaca mulatta (Primates)
c Anatomical and radiological studies of circulation in the maternal placenta. Macaca mulatta, Homo sapiens (Primates) (with M. W. DONNER and H. R. MISENEIMER)

RAMUS, J. S. Ph.D. — Dept. of Biol., Yale Univ., NEW HAVEN, Conn. 06520, U.S.A.

RANGA RAO, K. Ph.D. — Dept. of Biol., Tulane Univ., NEW ORLEANS, La. 70118, U.S.A.
a The responses of chromatophores of zoea, megalopa and adult to purified chromatophorotropins. Uca pugilator (Decapoda, Crustacea)
b A study on the control of pigmentation in regenerating appendages. Uca pugilator, Cambarellus shufeldti (Decapoda, Crustacea)

RANZI, S. Ph.D., Prof. — Lab. di Zool., Univ. di Milano, Via Celoria 10, 20133 MILANO, Italy

RANZOLI, F. Dr., Prof. — Ist. di Zool., Univ. di Catania, Via Androne 81, 95124 CATANIA, Italy

a Gametogenesis and sexuality. Electra posidoniae (Ctenostomata, Bryozoa)

RAO, K. V. Ph.D. — Dept. of Zool., Univ. of Delhi, DELHI-7, India

a Study of the role of sulfhydryl groups in the primary organizer action by grafting and culturing in vitro pieces of early blastoderms. Gallus domesticus (Aves)
b Role of the surface properties of blastoderm cells in morphogenetic movements; iso-electrofocussing of living cells to determine surface charge. Same species as a
c Nucleic acid synthesis in the early embryo. Planorbis exustus, Lynnaea stagnalis (Pulmonata, Gastropoda)

RAPOLA, M. H. J. M.D. — Children’s Hosp., Univ. of Helsinki, 11 Stenbäck St., 00290 HELSINKI 29, Finland

a Teratology. Homo sapiens (Primates)
b Kidney differentiation; organ culture, electron microscopy. Mus musculus (Rodentia)

a Comparative micrurgical studies on cytokinesis: extending present methods to a variety
of experimental material and devising new forms of physical experimentation. *Marina-gammarus obtusatus* (Gammaridae, Crustacea), *Echinarchius parma* (Echinoidea), *Rana pipiens* (Anura)

RASCH (MYRBERG), Mrs. E. M. Ph.D., Prof. — Dept. of Biol., Marquette Univ., 530 N. 15th St., MILWAUKEE, Wis. 53233, U.S.A.

a Atypical nucleoprotein synthesis during larval development. *Sciara coprophila* (Diptera)

b Cytochemistry and fine structural analysis of puffs in giant chromosomes. Same species as a

c Triploidy in a gynogenetic form. *Poecilia formosa* (Teleostei)

RASH, J. — Dept. of Embryol., Carnegie Inst. of Washington, 115 W.University Parkway, BALTIMORE, Md. 21210, U.S.A.

a Animal viruses (esp. tumor viruses) as tools in studying embryonic development. Gallus gallus (Aves) (with J. D. EBERT and C. W. ORR)

RAUNICH, L. Ph.D., M.D., Prof. — Ist. di Anat. Comp., Univ. di Ferrara, Via Scienze 17, 44100 FERRARA, Italy

a Changes of hemoglobins and dehydrogenases during embryonic and postembryonic development (starch gel electrophoresis). *Muigil spec.*, *Chrysophrys spec.*, *Labrax spec.*, *Gasterosteus spec.* (Teleostei)

RAVEN, Chr. P. Ph.D., Prof. — Zool. Lab., State Univ. of Utrecht. Janskerkhof 3, UTRECHT, Netherlands

a Application of information theory to oogenesis and embryonic development

b Cortical morphogenetic field and early ooplasmic segregation. Various spp. (Gastropoda)

c Transfer of information from egg follicle to oocyte. Various spp. (Gastropoda)

d Origin of dextrality and sinistrality. *Lymnaea peregra* (Gastropoda)

e Computer simulation of embryonic development. (with J. J. BEZEM)

RAWLES (SPURBECK), Mrs. M. E. Ph.D. 4000 N.Charles St., BALTIMORE, Md. 21218, U.S.A.

a Normal development of the genital tract in the embryo. *Anguis fragilis, Lacerta viridis* (Lacertilia); *Tropidonotus tessellata, Vipera aspis* (Ophidia)

b Destruction with x-rays of the primordium of the hypophysis. *Anguis fragilis* (Lacertilia)

c The rotation of the egg in the uterus and the orientation of the axis of the embryo. *Anguis fragilis* (Lacertilia)

d The development of the limb buds (*Lacerta viridis, L. sicula*) and the factors involved in the arrest of development of limb buds. *Anguis fragilis* (Lacertilia), *Python reticulatus* (Ophidia)

e Development of the phallus. *Lacerta viridis, Anguis fragilis* (Lacertilia), *Tropidonotus tessellata* (Ophidia), (Chelonia)

f The function of endocrine glands in the embryo. Same species as e

g Capacities of differentiation in vitro of genital tract primordia. Same species as a

h Effects of sexual and gonadotropin hormones on sexual differentiation of the embryo. Same species as e

i RNA and DNA synthesis of epidermal and mesodermal cells in the limb buds. *Anguis fragilis, Lacerta viridis* (Lacertilia) (with J. VASSE)

j The mechanisms of arrest of the elongation and of degeneration of Müllerian ducts in male embryos. *Lacerta viridis* (Lacertilia), *Cistudo europaea* (Chelonia) (with C. PIEAU)

RAYNAUD (CHAULIN-SERVINIERE), Mrs. J. Dr.ès Sci. — Serv. d’Embryol. Expér., Inst. Pasteur, 20 rue des Moulins, 95 SANNOIS, France

a Histochemistry of the functional differentiation of the endocrine glands in the embryo. *Anguis fragilis* (Lacertilia)

b Culture in vitro of the primordium of the sub-maxillary gland. *Mus musculus* (Rodentia)

c Histochemistry of the limb bud. *Anguis fragilis, Lacerta viridis* (Lacertilia)

RAZEK, H. A. M.D. — Dept. of Anat., Div. of Appl. and Topogr. Anat., Univ. of Bern, 26 Buehlstr., CH-3012 BERN, Switzerland

a Comparative placentation. (Mammalia)

b Early differentiation of germ layers. *Mus musculus* (Rodentia)

REAMS, W. M., Jr. Ph.D., Prof. — Dept. of Biol., Univ. of Richmond, RICHMOND, Va. 23173, U.S.A.

a Effects of tissue environment on pigment cell morphogenesis. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)

b Factors affecting pigment behaviour in the skin. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)

c The Langerhans cell: origin and differentiation. *Mus musculus* (Rodentia)

d Immunochemical studies on the origin of Langerhans cells. *Mus musculus* (Rodentia)

REBER (PELLE), Mrs. A. — Lab. de Physiol. Anim., Univ. de Rouen, 10 Bd. de Broglie, 76 MONT-SAINT-AIGNAN, France
Raisons de la répartition des embryons le long des cornes utérines au 7e jour de gestation (ligature, transfert d’embryons, autoradiographie). *Rattus* spec. (Rodentia)

REDMAN, R. S. Ph.D., Prof. — Div. of Oral Biol., School of Dent., Univ. of Minnesota, MINNEAPOLIS, Minn. 55455, U.S.A.

a Parotid gland: ductal development (light and electron microscopy); cell types involved in proliferation (electron microscopy, radioautography); effects of dietary changes on developmental pace (biochemical assay of exocrine enzymes and protein, light microscopy). *Rattus rattus* (Rodentia)

b Minor salivary glands: initiation, ductal development, and acinar or alveolar differentiation; (light and electron microscopy, histochemistry). *Rattus rattus* (Rodentia)


a Regulation of nucleic acid synthesis in early development. *Xenopus laevis* (Anura) (with T. HONJO)

REES (WALLEY), Mrs. L. J. Ph.D. — Marine Sci. Labs., Univ. Coll. of N.Wales, MEnAI BRIDGE, Anglesey, Wales, U.K.

da Developmental biology. (*Cirripedia, Crustacea*)


b Mechanism of in vitro activation of RNA synthesis in the iris. *Triturus viridescens* (Urodela)

REMBOLD, H. Dr.ren.nat., Pr.DoZ. — Max-Planck-Inst. für Biochem., Goethestr. 31, 8-MÜNCHEN-15, W.Germany

a Isolation of the determining substance responsible for queen bee establishment from royal jelly and from pupae and adults. *Bombus mori*. *Apis mellifera* (Hymenoptera)

b Biochemical aspects of queen determination; comparative studies on enzyme activities, mitochondria, protein and nucleic acid synthesis in queens and workers. *Apis mellifera* (Hymenoptera)

c Biochemical function of biopterin in development; metabolic studies with C14-pteridines. *Apis mellifera* (Hymenoptera)

RENFREE, Miss M. B. B.Sc. — Dept. of Zool., School of Gen. Studies, Australian Nat. Univ., P.O.Box 4, CANBERRA, A.C.T. 2600 Australia

a Physiology of the placenta. *Macropus eugenii* (Marsupialia)

b RENNERT, O. M. M.D., Prof. — Dept. of Pediat. and Biochem., Coll. of Med., Univ. of Florida, GAINESVILLE, Fla. 32601, U.S.A.

b Modification of isoaccepting species of transfer RNA isolated from embryos and adult liver and spleen (amino acyl-tRNA reaction, reverse phase chromatography). *Mus musculus*, *Rattus norvegicus* (Rodentia)

c Isoleucyl-tRNA formation as a controlling factor in the "turning-off of fetal hemoglobin" production. (Rodentia)


REPORTER, M. C. Ph.D. — Charles F. Kettering Research Labs., 150 E. South College St., YELLOW SPRINGS, Ohio 45387, U.S.A.

a Metabolic characteristics of the early embryo. *Gallus domesticus* (Aves)

b Energy transfer processes in the early embryo and in monolayer cultures. *Gallus domesticus* (Aves)

c Energy transfer processes in cell-cell interactions in monolayer cultures. *Rattus rattus* (Rodentia)

RESSOUCHES (SELMES), Mrs. A.-P. Dr.Biol.anim. — Lab. de Zool. Expér., Univ. de Bordeaux I, Av. des Facultés, 33 TALENCE, France

a Développement embryonnaire. *Pissodes spec.* (Coleoptera)

b RESTELLI, M. A. M.D. — Inst. de Embriol., Biol. e Histol., Fac. de Cienc. Med., Univ. Nac. de La Plata, 60 y 120, LA PLATA, Argentina

b Analysis of growth control (tissue and humoral factors) of liver tissue in tissue culture and organ culture. *Mus musculus* (Rodentia)

REVERBERI, G. D.Sci., Prof. — Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO, Italy

a The role of some enzymes in embryonic development (marine Invertebrata)

b Ultrastructure of the developing egg. (*Annelida: Mollusca; Ascidiacea*)

b REVÉSZ-FERENCZY, Mrs. E. M.D. — Dept. of Anat., Div. of Appl. and Topogr. Anat., Univ. of Bern, 26 Buehlstr., CH-3012 BERN, Switzerland

a Radiobiology, normal embryology. *Homo sapiens* (Primates)

b Radiobiology, experimental embryology. 1. genetics; 2. placentology. *Mesocricetus auratus* (Rodentia)

a Causal mechanisms involved in lens regeneration from the dorsal iris and their relation to the processes of lens induction in the embryo. *Triturus viridescens* (Urodela)
b DNA synthesis, cell division and cell migration during neural retina regeneration using thymidine-H3. *Triturus viridescens. Ambystoma maculatum* (Urodela)
c Stimulating factors common to lens and limb regeneration. Same species as a

RENAUD, G. R. Dr.spéc. — Lab. de Morphogénét. Anim., Centre Saint-Charles, Univ. de Provence, Place Victor Hugo, 13 MARSEILLE 3e, France


REYNOLDS (KING). Mrs. W. A. Ph.D. Prof. — Dept. of Anat., Coll. of Med., Univ. of Illinois, 1853 W.Polk St., P.O.Box 6998 CHICAGO, Ill. 60680, U.S.A.

a Metamorphosis: uptake and localization of thyroxine in tissues and cells, collagen deposition. *Rana pipiens* (Anura)
b Fetal contributions to amniotic fluid. *Macaca mulatta*, *M. speciosa*, *M. irus*, Homo sapiens (Primates)
c Fetal metabolism and composition in diabetic pregnancy. Same species as b
d Effect of cyclamate, saccharin and monosodium glutamate on fetus and neonate. Same species as b

REYREL, Miss F. M. J. Dr.3e Cycle — Lab. de Biol. Génér., Univ. Paul-Sabatier, 118 Route de Narbonne, 31 TOULOUSE 04, France

a Régénération de la mâchoire et des dents: étude descriptive et expérimentale du blastème de régénération (détérmination, différenciation) par greffes et cultures d’organes. *Pleurodeles waltl*ii (Urodela)

REYSS-BRION, (DUCREAU), Mrs. M. Dr.es Sci. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France

a Influence des rayons X sur le développement embryonnaire. *Pleurodeles waltl*ii (Urodela), GALLUS spec. (Aves)
b Influence des rayons X sur le pouvoird inducteur de la gastrula. *Pleurodeles waltl*ii (Urodela)
c Effet des rayons X sur le développement de la peau embryonnaire. *Gallus domesticus* (Aves)


a Nuclear size and DNA content (cyphotometry) of different organs in embryos and larva. *Ascidia nigra* (Ascidiae)
b Nuclear size in somatic and germinal tissues. *Parascaris equorum* (Nematoda)

RIBBERT, D. — Zool. Inst. der Westf. Wilhelms-Univ., Badestr. 9, 44 MÜNSTER/Westf., W.Germany


a Development of laboratory reared animals. (Decapoda, Crustacea)
b Larval development. *Macropipus* spec., *Carcinus* spec. (Portunidae, Decapoda, Crustacea)
c Larval development and metamorphosis. *Nephrops norvegicus* (Decapoda, Crustacea)

RICHARDS, Mrs. C. M. Ph.D. — Dept. of Zool., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.

a The production of inbred strains using gynogenetic techniques of two types: 1. combination of egg nucleus plus second polar body; 2. inhibition of the first cleavage of a haploid egg to produce completely homozygous diploids. *Rana pipiens* (Anura)
b Genetics of various mutants including albino, blue, melanoid, as well as mutants uncovered by gynogenesis. Same species as a
c Control of the sex of metamorphosed animals by the administration of estrogen or testosterone at appropriate larval stages. Same species as a

RICHARDSON, W. N. Ph.D. — Dept. of Biol., Univ. of Miami, CORAL GABLES, Fla. 33124, U.S.A.

a Developmental systems. (Algae)

RICHTER, R. H. H. Ph.D. — Eigerstr. 70, 3000 BERN, Switzerland

a Teratogenesis: effect of certain compounds and conditions. *Rattus* spec. (Rodentia)
b Effect of some 50 steroidal compounds on the development of male and female rats. *Rattus* spec. (Rodentia)

RIECK, A. F. Ph.D., Prof. — Dept. of Physiol., Sch. of Med., Marquette Univ., 561 N. 15th St., MILWAUKEE, Wis. 53233, U.S.A.

RIKIND, R. A. Dr. — Dept. of Human Genet. and Developm., Coll. of Phys. and Surg., Columbia Univ., 630 West 168th St., NEW YORK, N.Y. 10032, U.S.A.

RICKMENPOEL, R. Ph.D., Prof. — Dept. of Biol. Sci., State Univ. of New York, 1400 Washington Ave., ALBANY, N.Y. 12203, U.S.A.

a Control mechanisms of sperm motility. *Bos taurus* (Artiodactyla)


a Histochemistry of the placenta. *Homo sapiens* (Primates)
RINALDI, Miss A. M. — Dr.Biol. — Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy
a Messenger RNA in unfertilized eggs. Arctacia punctulata (Echinoidea)
b RNA synthesis in mitochondria. Arctacia lixula (Echinoidea)

RINALDI, Miss L. Dr.Biol. — Ist. di Zool., Univ. di Parma, Via Universitá 12, 43100 PARMA, Italy
a Experimental morphology of bone induction and inhibitory action of thalidomide. Mus musculus, Rattus spec. (Rodentia) (with B. SCHREIBER)

RINAUDO, M. T. Prof. — Inst. of Biochem., Univ. of Turin, Via Giolitti 34, 10123 TORINO, Italy

RIPOLL, P. M.Sc. — Sect. Developm. Genet., Inst. of Genet. and Anthropol., Velazques 144, MADRID 6, Spain
a Clonal behaviour of zygotic lethals in imaginal discs. Drosophila melanogaster (Diptera)

RISNES, S. — Inst. of Anat., Univ. of Bergen, Årstavollen 19, 5000 BERGEN, Norway
a Graphical reconstructions of tooth germs and dental laminae in pouch youngs. Isodon obesus, I. macourus, Perameles gunnii (Marsupialia)
b Epithelial-mesenchymal interactions in odontogenesis. Rattus norvegicus (Rodentia)

a Histochemistry of epithelio-mesenchymal relationships in skin development. (Aves, Mammal)
b Rates of RNA and protein synthesis in eggs, and correlation with developmental events. Marine spp. (Invertebrata)

a Analysis of hormone actions on mammary gland development in organ culture. Mus musculus (Rodentia)

RIZKI, T. M. Ph.D. — Prof. — Dept. of Zool., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.
a Mutant genes regulating the function and structure of fat cells in the functional differentiation of the fat body (fluorescence and electron microscopy). Drosophila melanogaster (Diptera)
b Effects of various nucleic acid analogs in relation to morphogenesis, esp. those substances which can serve as mutagens. Same species as a

ROBADEY (RIBAS), Mrs. M. R. — Inst. de Biol. Anim., Fac. des Sci., Univ. de Fribourg, 1700 FRIBOURG, Switzerland
a Skull morphogenesis and cephalic induction. Gallus gallus (Aves)
b Interspecific associations between various organs. Gallus gallus, Coturnix spec. (Aves)

ROBECCHI, Miss M. G. M.D. — Dept. of Human Anat., Univ. of Torino, Corso M. d’Aezeglio 52, 10126 TORINO, Italy
a Morphology, histochemistry, and electron microscopy of neuroblast development in olfactory placode. Gallus domesticus (Aves)

ROBERT, M. Dipl.Natw. — Inst. für Genet., Univ. des Saarlandes, 66 SAARBÜCKEN 11, W.Germany
a Regulation of gene activity and histone cytochemistry in giant chromosomes. Chironomus thummi, Ch. tentans (Diptera)

ROBERTS, A. Ph.D. — Dept. of Zool., Univ. of Bristol, BRISTOL BS8 1UG, England

ROBERTS, Miss C. M. B.Sc. — Wellcome Inst. of Comp. Physiol., Zool. Soc. of London, Regent’s Park, LONDON NW1 4RY, England
a Embryology, especially implantation and early stages; histochemistry of pregnant uteri. Chinchilla laniger, Lagostomus maximus, Myocastor cygus, Oedodon degus, Galea musteloides, Proechimys guairae (Hystricomorpha, Rodentia)

ROBERTS, L. W. Ph.D. — Prof. — Dept. of Biol. Sci., Univ. of Idaho, MOSCOW, Idaho 83843, U.S.A.
a Pre-pattern phenomenon of localization of enzymatic activity prior to the formation of wound vessel member. Coleus blumei (Labiatae) (with S. BABA)
b Effect of environment on xylogenesis of vascular elements. Coleus blumei (Labiatae) (with S. BABA)
c Developmental physiology of xylogenesis in pith parenchyma explants: differentiation patterns and hormonal requirements. Lactuca sativa (Compositae)

ROBERTSON, B. M.D. — Dept. of Pediat. Pathol., Karolinska sjukhuset, 104 01 STOCKHOLM 60, Sweden
a The pathology and anatomy of pulmonary vasculature in congenital heart malformations, particularly transposition of the great arteries. Homo sapiens (Primates)

a Development of imaginal buds. Drosophila spec. (Diptera) (with C. H. WADDINGTON)
b Electron microscopy of the nucleolar organiser in the pupal bristle cells. Drosophila melanogaster (Diptera)
ROBERTSON, G. G. Ph.D., Prof. — Dept. of Anat., Med. Units, Univ. of Tennessee, 800 Madison Ave., MEMPHIS, Tenn. 38103, U.S.A.

a Virus-induced abnormalities in embryos. Gallus domesticus (Aves)

ROBERTSON, H. A. Ph.D. — Anim. Research Inst., OTTAWA, Ont., Canada

da Development of ovarian follicles. Ovis aries, Bos taurus (Artiodactyla)
b Hereditary requirement for implantation. Ovis aries, Bos taurus (Artiodactyla)

ROBINSON, Miss H. L. Ph.D. — Dept. of Biol., Georgetown Univ., 37th & O. St. N.W., WASHINGTON, D.C. 20007, U.S.A.

a Nuclear transplantation of morphologically and biochemically differentiated lens cells. Rana pipiens (Anura)


a Characterization of pregnancy-associated enzymes in maternal blood plasma. Homo sapiens (Primates)

ROBINSON, O. W. Ph.D., Prof. — Dept. of Anim. Sci., North Carolina State Univ., P.O. Box 5127, RALEIGH, N.C. 27607, U.S.A.

a Genetic and maternal effects on development of the neonate; cross-fostering, automatic sow and standard statistical analysis. Sus scrofa (Artiodactyla)
b Study of early embryonic development by embryo transfer; factors contributing to uterine capacity. Sus scrofa (Artiodactyla)

ROBINS, M. Ph.D., Prof. — Dept. of Nuclear Engin., Univ. of Washington, SEATTLE, Wash. 98105, U.S.A.

a Embryo culture. Rattus spec. (Rodentia)

ROCKSTEIN, M. Ph.D., Prof. — Dept. of Physiol., Univ. of Miami, P.O.Box 875, Biscayne Annex, MIAMI, Fla. 33152, U.S.A.

a Physiological basis of aging, growth, and metamorphosis. Musca domestica (Diptera)
b Metachemogenesis — post emergence biochemical maturation. (Holometabella, Insecta)

c Hereditary vs. environmental factors in longevity. (Diptera; Hymenoptera)
d Effects of x-irradiation on development, aging, and longevity. Musca domestica (Diptera)

RODRIGUES CORREIA, Mrs. M. J. M.D. — Inst. de Histol. e Embriol., Fac. de Med., Av. Prof. Egas Moniz, LISBOA 4, Portugal

a Ultrastructure of the embryonic mesonephros. Gallus domesticus (Aves)
b Action of ionizing radiations upon the embryonated egg. Gallus domesticus (Aves) (with M. J. XAVIER MORATO)

ROELS, F. M.D. — Lab. of Anat., Univ. of Gent. Ledeganckstr. 35, GENT, Belgium

a Peroxosimes and peroxidases in oocytes and fertilized eggs. Artemia salina (Anostraca, Crustacea)

ROEST (WAGENAAR), Mrs. J. A. — Anat.-Embryol. Inst., Univ. of Amsterdam, Maurituskade 61, AMSTERDAM-O, Netherlands

a Light microscopy, electron microscopy, histochemistry, physiology, and experimental teratogenesis of heart development in the embryo. Gallus domesticus (Aves), Mus musculus (Rodentia) (with H. M. LAANE and J. A. LOS)

ROGERS, K. T. Ph.D. — Dept. of Anat., Sch. of Med., Univ. of California, SAN FRANCISCO, Calif. 94122, U.S.A.

ROGUEDA (VIGNAU), Mrs. J. Dr.Biol.anim. — Lab. de Zool. Expér., Univ. de Bordeaux I. Av. des Facultés, 33 TALENCE, France

a Expériments sur la morphogenèse embryonnaire de la tête. Carausius spec. (Phasimida)

ROHLTSKA, Miss T. Ph.D. — Dept, of Embryol., Zool. Inst., Univ. of Warsaw, Krakowskie Przedmiescie 26/28, WARSZAWA 64, Poland

a Origin and fate of primordial germ cells. Gallus domesticus (Aves), Mus musculus (Rodentia)
b Differentiation of the somatic and germinal tissues of the gonad. Same species as a

ROKYTA, R. MUDr., CSc. — Inst. of Pathophysiol., Charles Univ., Lidická 1, PLZEN, Czechoslovakia

a Interhemispherical connections between subcortical auditory centres, especially between medial geniculate bodies in development. Felis domestica (Carnivora), Rattus norvegicus (Rodentia), Oryctolagus cuniculus (Lagomorpha)
b The influence of GABA (γ-aminobutyric acid) on the cortical somesthetic response after the stimulation of different parts of the somesthetic pathway during early postnatal development. Rattus norvegicus (Rodentia), Oryctolagus cuniculus (Lagomorpha)

ROLLHAUSER, H. Dr.med., Prof. — Anat. Inst. der Univ., Vesaliusweg 2-4, 44 MÜNSTER/Westf., W.Germany


a Control of tissue-specific RNA and protein synthesis in the early embryo. Rana pipiens (Anura)
b Characterization of chromatin, DNA, RNA, and protein at specific developmental stages (cell or organ culture and nuclear isolation). Same species as a
c Brain and fin development. Oryzias latipes (Teleostei)
d Pattern of thymidine incorporation in the chromosomes of cleaving cells. Same species as c

e Overall morphology of the DNA in lampbrush chromosomes. *Triturus viridescens* (Urodela)

ROMANOFF, A. L. Ph.D., Prof.(Emer.) — Lab. of Chem. Embryol., Cornell Univ., c/o 105 Rice Hall, ITHACA, N.Y. 14850, U.S.A.
a Chemical embryology. (Aves)
b Developmental pathology. (Aves)

ROMANOVA, Mrs. L. K. Dr.medisci. — Inst. of Human Morphol., Acad. of Med. Sci. of the U.S.S.R., Baltsiyskaya St. 8, MOSCOW 125315, U.S.S.R.

a The restoration of lungs. *Rattus norvegicus, Mus musculus* (Rodentia)

ROMANOVSKY, A. RNDr., C.Sc., Prof. — Dept. of Exper. Zool., Charles Univ., Viničná 7, PRAHA 2, Czechoslovakia

a Proteins and antigens in early development. (*Amphibia*) (with J. MACHA and J. PALEČEK)
b Transplantation of nuclei in relation to the development of antigenic characteristics. (*Amphibia*) (with F. SLADEČEK)

ROMIJN, C. Dr., Prof. — Lab. of Vet. Physiol., State Univ. of Utrecht, Alex. Numankade 93, UTRECHT, Netherlands

RONCALI, Miss L. M.D. — Inst. of Human Anat., Fac. of Med., Univ. of Bari, Polyclínico, 70124 BARI, Italy

a Modifications of vascular patterns during experimental twinning in the limb bud. *Gallus domesticus* (Aves)
b Experimental production of ectodermal thickenings in limb buds. *Gallus domesticus* (Aves)

ROOS, T. B. Ph.D., Prof. — Dept. of Biol. Sci., Dartmouth Coll., HANOVER, N.H. 03755, U.S.A.
a Biochemical and morphological differentiation of the adrenal cortex from the anlage to the functional state (12 to 16 days, stages 19-33) (electron microscopy, histochemistry and organ culture). *Rattus norvegicus* (Rodentia)
b Development of pituitary control of endocrine function: organ culture studies of independent differentiation of mesonephric ridge components in order to determine their interactions and competence and their response to pituitary and neural control. Same species as a


ROSALES RONQUILLO, Mrs. M. C. Ph.D. — Dept. of Zool., Univ. of Illinois, 515 G Morrill Hall, URBANA, Ill. 61801, U.S.A.
a Long term primary culture of embryonic, larval, and imaginal cells. *Anopheles stephensi* (Diptera)
b In vitro studies on cell movement and differentiation. *Anopheles stephensi* (Diptera)

ROSE, Mrs. F. C. M.A. — Lab. of Developm. Biol., Dept. of Anat., Tulane Univ., Riverside Research Center, BELLE CHASSE, La. 70037, U.S.A.

a Effect of x-irradiation on regeneration of aneurogenic limbs. *Ambystoma punctatum* (Urodela)

ROSE, M. S. M. Ph.D., Prof. — Lab. of Developm. Biol., Dept. of Anat., Tulane Univ., Riverside Research Center, BELLE CHASSE, La. 70037, U.S.A.

a Effect of x-irradiation on regeneration of aneurogenic limbs. *Ambystoma punctatum* (Urodela)
b Bioelectric patterns in normal, denervated, and x-rayed limbs. *Triturus viridescens* (Urodela)


a Relation between flagellar protein precursor pools and regeneration kinetics studied in amino acid-requiring and paralyzed flagella mutants by use of inhibitors of protein synthesis (cycloheximide), assembly (colchicine, vinblastine), pulse-labeling; isolation, characterization, and in vitro polymerization of flagellar microtubule subunits; growth zones of microtubules, in vivo and in vitro by autoradiography. (*Chlamydomonas reinhardtii* (Volvocales, Chlorophyta). Tetrahymena pyriformis (Ciliata))
b Biochemistry, synthesis, and assembly in vivo and in vitro of neurotubules and their role in the development of neurites and axons of cultured neuroblastoma cells. *Mus musculus* (Rodentia)

ROSENBERG, A. J. Prof. — Lab. d’Anat. Comp., Univ. Paris VII, 2 Place Jussieu, 75 PARIS Ve, France

ROSI, Miss G. Dott.Sci.Biol. — Ist. di Biol. Gener., Univ. di Perugia, Via del Giochetto, 06100 PERUGIA, Italy

a Rapporti tra rigenerazione e neurosecrezione. *Allolobophora caliginosa* (Oligochaeta)
b Sviluppo dei meccanismi eteropietici durante la vita neonatale. *Oryctolagus cuniculus* (Lagomorpha)
c Sviluppo del sistema neurosecretorio in embrioni. *Allolobophora caliginosa* (Oligochaeta)

ROSS, G. T. B.A. — Dept. of Biol., St.Francis Xavier Univ., ANTIGONISH, N.S., Canada

a Measurement of the total nucleolar material (by interference microscopy), and the nucleolar RNA (by scanning microdensitometry) in cultured normally differentiating myoblasts and in myoblasts cultured from dystrophic muscle. *Gallus domesticus* (Aves), *Mus domesticus* (Rodentia), *Homo sapiens* (Primates) (with D. E. JANS).

ROSS, L. M. M.D., Ph.D. — Dept. of Anat., Med. Branch, Univ. of Texas, GALVESTON, Tex. 77550, U.S.A.
a Production of abnormalities of the thymus using teratogens (vitamin A, cortisone). *Mus domesticus* (Rodentia)
b The role of the embryonic tongue in the process of closure of the secondary palate. *Mus domesticus* (Rodentia)

ROSSI, A. Dr. — Ist. di Anat. Comp. “Battista Grassì”, Univ. di Roma, Via A. Borelli 50, 00161 ROMA, Italy
a Determination in the neural plate. *Rana esculenta*, *Bufo bufo* (Anura)

ROSTAND, J. Prof. — 29 rue Pradier, 92 VILLE D’AVRAY, France

a Parthenogenèse et gynogenèse; régulation chromosomique par le froid. (Amphibia)
b Mutations (polyactylactie, ectroactylactie, etc.) and anomalies provoquées par le milieu embryotique (principalement “Anomalie P”). (Amphibia)
c Action protectrice de la glycérine à l’égard de la congélation des cellules spermatiques. (Amphibia)

ROSTEDT, Miss I. B. M.Sc. — Inst. of Biol., Univ. of Jyväskylä, Vapaudenkatu 4, JYVÄSKYLÄ, Finland
a Heterogeneous inducers on embryonic ectoderm. *Gallus domesticus* (Aves)
b Early embryonic development. Same species as a

a Molecular mechanisms for intercellular adhesive recognition and its role in morphogenesis. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia)

ROTH, Th. F. Ph.D. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.
a Electron microscopy, physiology, and molecular aspects of the protein transport site on the plasma membrane in the oocyte and liver. *Culex pipiens*, *C. fatigans* (Diptera), *Gallus domesticus* (Aves), *Rattus norvegicus* (Rodentia)
b Protein, DNA and RNA inhibitors applied at various intervals of meiotic prophase are used to affect simultaneously the synaptonemal complex and genetic crossing over in synchronous oocytes; ultrastructure of meiotic prophase. *Culex pipiens* (Diptera)
c Polar granule formation; time when they associate with the germ cells, their persistence and their fate at oocyte maturation. *Culex pipiens*, *Culex fatigans* (Diptera)
d Virus transmission from mother to oocyte: cell types, sequence and time in development (ferritin-antivirus conjugates, electron microscopy). *Gallus domesticus* (Aves)

a Changes of mitotic cycle in early embryogenesis as related to morphogenetic nuclear function and synthesis of RNA. *Strongylometora nasus* (Echinoidea), *Misgnarus fossitis*, *Salmo gairdneri*, *Cyniprus carpio*, *Exox lucius* (Teleostei), *Ambystoma mexicanum* (Urodela)

ROUCH, R. — Lab. Souterrain du C.N.R.S., 09 MOULIS, France
(no embryological work in progress)

(no embryological work in progress)

ROUSSEL, C. Dr.en Méd. — Lab. d’Histol.-Embryol. A. Fac. de Méd., 45 rue des Sts. Pères, PARIS VIe, France
a Mode d’action de certaines substances tératogènes (Triton WR 1339). (Mammalia)

ROUX, Ch. Dr.en Méd., Prof. — Lab. d’Embryol., CHU Saint-Antoine, 27 rue Chaligny, 75 PARIS XIe, France

a Histochemistry and ultrastructure of teeth buds. *Pleurdeleus wallili* (Urodela)

ROWLEY, D. A. Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 E. 57th St., CHICAGO, Ill. 60637, U.S.A.

a Ovum transplantation and artificial insemination. (Mammalia)

RUBEN, L. N. Ph.D., Prof. — Biol. Dept., Reed College, PORTLAND, Ore. 97202, U.S.A.
a Neoplasia: 1. physical and chemical factors affecting immunocompetence and its relation to lymphosarcoma transmissibility and development; 2. attempt to initiate non-lymphoid non-viral tumours using N-nitrosomethylurea. *Triturus viridelescens*, *Xenopus laevis*, *Rana pipiens* (Amphibia)
b Normal development of immunocompetence and factors affecting normal development (haemagglutinin and haemolysin tests). *Xenopus laevis* (Anura)

RUCH, J. V. Dr.méd., Dr.és Sci. — Inst. d’Embryol., Fac. de Méd., 11 rue Humann, 67 STRASBOURG, France

a Action of dexamethasone in vivo and in vitro. *Oryctolagus cuniculus* (Lagomorpha), *Mus musculus* (Rodentia)

b Epithelial-mesenchymal interactions, mitosis, and differentiation in teeth. *Mus musculus* (Rodentia)

RUDDELE, F. H. Ph.D., Prof. — Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, Conn. 06520, U.S.A.

a Discrimination between genetic and epigenetic events in somatic cells in vitro by studying enzyme variants. *Mus musculus* (Rodentia)

b Genetic and epigenetic analysis utilizing somatic cell hybrids.


a Duration of mitotic phases in the period of synchronous cleavage. *Xenopus laevis* (Anura) (with T. A. DETTLAFF)

RUDNICK, Miss D. Ph.D. — Albertus Magnus Coll., 700 Prospect St., NEW HAVEN, Conn. 06511, U.S.A.

a Development of pharyngeal derivatives. *Gallus domesticus* (Aves)

RUE, G. — Lab. de Biol. Cell., Fac. des Sci., B.P. 347, 51 REIMS, France

a Ultrastructure of nucleolus during oogenesis. *Lineus ruber* (Nemertea)


RUNNER, M. N. Ph.D., Prof. — Inst. for Developm. Biol., Univ. of Colorado, BOULDER, Colo. 80302, U.S.A.

RUNNISTRÖM, J. A. M. † M.D., Ph.D., Prof. — Wenner-Gren Inst., STOCKHOLM, Sweden

RUSAQUIEN, Mrs. M. Dr.spec. — Fac. de Méd., Univ. d’Alger, ALGER, Algeria

RUSCH, H. P. M.D., Prof. — McArdle Lab. for Cancer Res., Univ. of Wisconsin, 450 N. Randall Ave., MADISON, Wis. 53706, U.S.A.

RUSSO-CAIA, S. Prof.Inc. — Ist. di Istol. ed Embriol., Univ. di Camerino, 62032 CAMERINO, Italy

RUTH, R. F. Ph.D., Prof. — Dept. of Zool., Fac. of Sci., Univ. of Alberta, EDMONTON, Alta., Canada


a Cytological characteristics of the regenerating liver. *Rattus norvegicus, Mus musculus, Cavia porcellus* and other spp. (Rodentia)

RYCZKOWSKI, M. Doc., Dr. — Dept. of Plant Physiol., Jagellonian Univ., Grodzka 53, KRAKÓW, Poland

a Physico-chemical and physiological properties of the developing ovule and embryo. 1. Free amino acids in the environment of the embryo. 2. Free amino acids in the endosperm tissue and embryo during exponential phase of its growth. 3. Physico-chemical gradients in the ovule and embryo. 4. Respiration and oxygen tension of the ovule. (Monocotyledonae, Dicotyledonae, Gymnospermae)

RYFFEKL, G. Lic.phil.nat. — Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Saalstr. 8, CH-3012 BERN, Switzerland

a Thyroxine and RNA synthesis in tadpole tissues. *Xenopus laevis* (Anura) (with R. WEBER and U. SCHIBLER)

RYLAND, J. S. Ph.D. — Dept. of Zool., Univ. Coll. of Swansea, Singleton Park, SWANSEA, Glamorgan, Wales, U.K.

a Effect of environmental parameters on development. *Pleuronectes platessa* (Teleostei)

b Larval biology. (Bryozoa)


a Influence of the nervous system upon regeneration. *Triturus* spc. (Urodela)

b Cytokinesis in eggs. *Xenopus* spc. (Anura)


SABBADIN, A. Dr., Prof. — Ist. di Biol. Anim., Univ. di Padova, Via Loredan 10, 35100 PADOVA, Italy

a Differentiation of germ cells. *Botryllus schlosseri* (Asciidiacea)

SACARRÃO, G. da FONSECA Dr.Sc., Prof. — Fac. de Ciencias, Museu Bocage, LISBOA, Portugal

a Development of the epistellar body. *Octopus* spec., *Argonauta* spec. (Cephalopoda)

b Development of the statocyst. (Cephalopoda)

c Blastokinesis. *Tremoctopus violaceus, Octopus vulgaris* (Cephalopoda)

SACHS, L. Prof. — Dept. of Genet., Weizman Inst. of Sci., REHOVOTH, Israel

SACHS, T. Dr. — Dept. of Bot., The Hebrew Univ., JERUSALEM, Israel
Establishing Developmental Biochemical Mitotic Later Mechanism Cell Effect Development Intermediate Formation Electron Study • culture Developmental Regeneration

SAGAWA, a b
SACK, a b
SALLACH, a
SAKAI, a
SALAMATINA, a b
SALAUN, a
SALOMON b
SALLES, a
SALTHE, a
Coregonus animals.
N.V. Bunkyo-ku.

PADOVA, b
Bufo carbohydrates Rattus Gerais.
(Aves),
the
Rattus
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SALZGEBER, Miss B. Dr.és Sci. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, NOGENT-sur-MARNE, France

a L’action d’agents chimiques sur la différenciation sexuelle. *Gallus* spec. (*Aves*)
b Etude des effets tératogènes (malformations de membres) obtenus 1) par l’ypérine azotée (chlorethylamine), 2) par la thalidomide (phtalimidoglutarimide). Same species as a

c Recherches sur la genèse des malformations de membres. *Gallus domesticus* (*Aves*)

SANARES, Miss N. Lic.és Sci. — Inst. Natl. de la Santé et de la Rech. Méd., Unité de Physiol. placent., Hôp. Saint-Antoine, 184 rue du Faubourg Saint-Antoine, 75 PARIS XII, France

SANCHEZ RIERA, Miss A. N. Biochem. — Inst. de Biol. Univ. de Tucumán, Chacabuco 461, S. M. de TUCUMAN, Argentina

a Intermediate metabolism during early development; nucleotide synthesis. *Bufo arenarum* (*Anura*)

SANCHEZ (TEFF), Mrs. S. Dr.és Sci. — Lab. d’Histol., Fac. de Méd., 2 rue Ecole de Médecine, 34 MONTPELLIER, France

SANCHEZ, Miss S. S. Biochem. — Inst. de Biol. Univ. de Tucumán, Chacabuco 461, S. M. de TUCUMAN, Argentina

a Intermediate metabolism during early development; nucleotide synthesis. *Bufo arenarum* (*Anura*)

SANDAHL, B. M.D. — Tornblad Inst. for Comp. Embryol., Biskopsgatan 7, S223 62 LUND, Sweden

a Chromosome biochemistry during development. *Oryctolagus cuniculus* (*Lagomorpha*)

SANDER, K. Ph.D., Prof. — Biol. Inst. I (Zool.) der Univ., Katharinenstr. 20, 78 FREIBURG, W. Germany

a Early stages of embryogenesis: epigenetics of segmentation pattern, blastokinesis. *Euscelis plebejus* (*Cicadina, Homoptera*), (*Chironomidae, Diptera*)

b Developmental physiology of embryonic mycetomes. *Euscelis plebejus* and other spp. (*Cicadina, Homoptera*)


a Regulation of imaginal disc determination and differentiation (developmental genetics and biochemistry of temperature-sensitive homoecotic and maternal mutants). *Drosophila melanogaster* (*Diptera*)

b Molecular mechanisms of spermatogenesis (genetics and biochemistry of Y chromosome gene function utilizing temperature-sensitive male sterile mutations). Same species as a


a Teratological tests in early developmental stages. *Gallus domesticus* (*Aves; Rodentia*)

b Development of embryonic axial organs. *Gallus domesticus* (*Aves*)

c Time-lapse cinematography of early embryonic development. *Gallus domesticus* (*Aves*)

SANG, J. H. Ph.D., Prof. — Sch. of Biol. Sci., Univ. of Sussex, Falmer, BRIGHTON BN1 9QG, England

a Developmental effects of melanotic tumor genes, using germ-free techniques. *Drosophila melanogaster* (*Diptera*)

b Culture of embryonic cells. Same species as a

c Map of the presumptive areas in the blastoderm. Same species as a

SANNASI, A. Ph.D. — Inst. für Genet., Univ. des Saarlandes, 66 SAARBURCKEN 11, W. Germany

a Effect and mode of action of drugs on puffing patterns. *Chironomus thummi* (*Diptera*)

SANTAMARIA, P. M.Sc. — Sect. Developm. Genet., Inst. of Genet. and Anthropol., Velazques 144, MADRID 6, Spain

a Analysis of wing development in scalloping mutants by means of somatic recombination: allele homozygosity at different times of development, and clonal analysis of the mutant wing. *Drosophila melanogaster* (*Diptera*)


(no embryological work in progress)

SANTORO D’ANGELO, Mrs. L. Prof. — Ist. di Biol. Gen., Univ. di Roma, Policlinico Umberto I, 00100 ROMA, Italy

a Effects of gravity acceleration during growth of primary root. *Vicia faba* (*Papilionaceae*)

b Effects of 1 asparaginase during rejuvination of embryonic and larval transplants. *Rana esculenta* (*Anura*), *Triatus taeniatus* (*Urodela*)

SASAKI, M. D.Sc. — Chromosome Research Unit, Fac. of Sci., Hokkaido Univ., North 10, West 8, SAPPORO, 060 Japan

a Chromosome studies in early embryogenesis, with special reference to spontaneous abortion, maldevelopment and sex ratio. *Homo sapiens* (*Primates*)

SASAKI, N. D.Sc. — Dept. of Biol., Fac. of Sci., Kyushu Univ., Hakozaki-cho, FUKUOKA, 812 Japan
a Change of regional effect in primary induction with special reference to molecular structure of inducing agent. *Triturus pyrhogaster* (Urodela), Gallus domesticus (Aves)
b Transformation of primarily activated ectoderm by RNA. *Triturus pyrhogaster* (Urodela)
c Reactivity of ectoderm cells in primary induction. Same species as b

SATHANANTHAN, A. H. Ph.D. — Dept. of Zool., Univ. of Ceylon, COLOMBO 3, Ceylon

a Morphological, cytochemical and ultra-structural aspects of early development from second maturation division (oviposition) to the post-gastrula stage. *Arion ater rufus* (Pulmonata, Gastropoda)
b Cell movements in morphogenesis. *Arion ater rufus* (Pulmonata, Gastropoda)

SAITO, G. H. Ph.D., Prof. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.
a Hormone dependent cell cultures. (Mammalia)

SAITO, H. D.Sc., Prof. — Dept. of Biol., Univ. of Pennsylvania, 217 Leidy Lab., PHILA-
DELPHIA, Pa. 19104, U.S.A.

Chikusa-ku, NAGOYA, Japan

SAUER, H. W. Dr.rer.nat.habil. — Physiol. Lehrstuhl, Zool. Inst. der Univ., Berlinerstr. 15,
69 HEIDELBERG, W.Germany

a The significance of radioactively labelled DNA, RNA and protein for the events of primary determination and primary differentiation. *Acheta domesticus* (Orthoptera)
b The regulation of growth (naturally synchronous mitoses) and differentiation (sporulation) of a plasmodium. The possibility of a sequential transcription of the genome via positive control mechanisms. *Physarum polycephalum* (Eumycetozoa)

SAUNDERS, J. W., Jr. Ph.D., Prof. — Dept. of Biol. Sci., State Univ. of New York, 1400
Washington Ave., ALBANY, N.Y. 12203, U.S.A.
a The role of ectoderm in limb development. *Gallus domesticus* (Aves)
b Factors affecting tract-specificity in embryonic feather areas. Same species as a
c Ectoderm-mesoderm interactions in limb formation. Same species a as
d Cellular deaths in morphogenesis. *Gallus domesticus* (Aves), *Campanularia flexuosa* (Hydrozoa)
e Origin of electrical communication between blastomeres. *Echinarchninus parma* (Echinoidae)

SAUSSEY, M. Dr.es Sci. — Lab. d'Embryol., Unité de Sci., Univ. de Caen, 14 CAEN,
France

a Regeneration, sexuality and diapause. *Allolobophora ictericia*, A. spp. (Oligochaeta)

SAUZIN, Miss M. J. — Lab. de Biol. Anim., Fac. des Sci., Univ. Paris Sud, 91 ORSAY,
France

a Ultrastructure du blastème de régénération: la différenciation des néoblastes. (Planariidae, Turbellaria)

SAWADA, N. D.Sc., Prof. — Biol. Inst., Ehime Univ., Bunkycho, MATSUYAMA, 790
Japan

a Mitotic apparatus. (*Echinodermata; Echiuroidea*)
b Ultrastructural changes in oogenesis and spermatogenesis. (*Sipunculoidea; Echiuroidea; Gastropoda*)

SAWAIT, T. B.A. — Embryol. Sect., Biol. Dept., Tokyo Metropolitan Univ., 2-1-1 chome,
Fukazawa-machi, Setagaya-ku, TOKYO 158, Japan

a Studies of cleavage. *Triturus pyrhogaster* (Urodela)

SAXEN, L. O. M.D., Phil.lic., Prof. — Lab. of Exper. Embryol., III. Dept. of Pathol., Univ.
of Helsinki, Haartmaninkatu 3, HELSINKI 29, Finland

a Mechanism of primary induction. *Triturus spec.* (Urodela) (with S. I. TOIVONEN,
Dept. of Zool.)
b Mechanism of kidney tubulogenesis. *Mus musculus* (Rodentia) (with J. J. WARTIO-
VAARA and others)
c Drug-induced teratogenesis in vitro. *Mus musculus* (Rodentia) (with A. LAHTI
and I. KAITILA)
d Virus-induced abnormalities in embryonic development. *Homo sapiens* (Primates) (with
O. J. KOSKIMIES, Dept. of Zool.)
e Virus-induced cataract. *Gallus gallus* (Aves) (with M. JAAKELAINEN)

Grenoble, Cedex 53, 38 GRENoble, France

a Experiments on the differentiation of the cutaneous sensory corpuscles. *Gallus domesticus,
Anas boschas* (Aves)
b Herbst's and Grandry's cutaneous sensory corpuscles: 1. origin; 2. electron microscopy of
cholinesterases. *Anas boschas, Gallus domesticus*, Coturnix c. japonica (Aves)
c Effects of x-rays on the innervation of the skin. *Gallus domesticus* (Aves)

SAZHINA, Miss M. V. Cand.biol.sci. — Phenogenet. Lab., Inst. of Gen. Genet., Acad. of
Sci. of the U.S.S.R., Profsojuznaya St. 7 (1), MOSCOW 113, U.S.S.R.
a Developmental study of mutant gene effects on cell proliferation. *Mus musculus* (Rodentia)
SCALI, V. Dr.Nat.Sci. — Ist. di Zool. e Anat. Comp. dell’Univ., Via A. Volta 4, 56100
PISA, Italy
a Cytology and development. (Phasmida)
b Different time of ripening of male and female gonads in populations with female summer
diapause; biosynthesis in larva and adult. Maniola jurtina (Satyridae, Lepidoptera)
SCARANO, E. — Lab. Intern. di Genet. e Biofis., via G. Marconi 10, 80125 NAPOLI, Italy •
SCHADE, J. P. M.D., Ph.D. — Netherl. Centr. Inst. for Brain Research, IJdijk 28, AM-
STERDAM-O., Netherlands
a Development and maturation of structure and function of the central nervous system:
1. Electrical patterns - EEG, evoked potentials; 2. Spreading depression and convulsion
mechanisms; 3. Structural organization of dendritic patterns. Rattus norvegicus (Rodentia)
SCHAFER, U. — Inst. für Allgem. Biol., Univ. Düsseldorf, Mettmanner Str. 16-18, 4000
DÜSSELDORF, W.Germany
a Autoradiographic analysis of the protein metabolism during oogenesis in cells which had
amplified the genes for ribosomal RNA. Calliphora erythrocephala (Diptera), Acilis
sulcatus (Coleoptera)
b Gene physiology, Y chromosome. Drosophila spp. (Diptera)
c Genetic regulation of differentiation; male germ line cells. Drosophila hydei, D. neohydei
(Diptera)
SCHAIBLE, R. H. Ph.D. — Zool. Dept., Indiana Univ., BLOOMINGTON, Ind. 47401,
U.S.A.
SCHARLOO, W. Ph.D., Prof. — Genet. Inst., Univ. of Utrecht, Opaalweg 20, LITRECHT,
Netherlands
a Effect of environmental factors and selection on the development of mutant characters.
Drosophila melanogaster (Diptera)
b Induction of morphological aberrations by antimetabolites. Same species as a
SCHIEB (PFLEGER), Mrs. D. Dr.ès Sci. — Inst. d’Embryol. et Tératol. Expér. du
C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France
a Ultrastructure de la lignée interstitielle dans les gonades. Gallus domesticus, Coturnix
japonica (Aves), Mus musculus (Rodentia)
SCHELLER, K. Dipl.Biol. — Zool. Inst. II der Univ., Berlinerstr. 15, 6900 HEIDELBERG,
W.Germany
a Synthesis and kinetics of RNA during oogenesis. Dysdercus intermedius (Hemiptera)
SCHERFT, J. P. M.D. — Lab. for Cell Biol. and Histol., State Univ., Rijnsburgerweg 10,
LEIDEN, Netherlands
a Development and early stages of calcification of the diaphyseal bone collar of radii in
14-18-day-old embryos (electron microscopy). Mus musculus (Rodentia)
SCHERRER, K. Dr. — Dépt. de Biol. Moléc., Inst. Suisse de Rech. Expérím. sur le Cancer,
rue Bugnon 21, 1011 LAUSANNE, Switzerland
a Red cell differentiation in erythroblastosis virus-induced anaemia. Gallus domesticus (Aves)
(with S. P. MODAK and R. CORNUZ)
b RNA synthesis, metabolism, and function in differentiating and undifferentiated cultured
cells: erythroblasts, Gallus domesticus (Aves); Hela-cells, Homo sapiens (Primates)
SCHIBLER, U. — Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahliinstr. 8,
CH-3012 Bern, Switzerland
a Thyroxine and RNA synthesis in tadpole tissues. Xenopus laevis (Anura) (with R. WE-
BER and G. RYFFEL)
SCHIEBLER, T. H. Dr.med., Prof. — Dept. of Anat., Univ. of Würzburg, Koellikerstr. 6,
87 WÜRZBURG, W.Germany
a Experimental investigation of the kidney using actinomycin D in order to study the
formation of enzymes during development. Rattus norvegicus (Rodentia)
b Chemo-differentiation of different parts of the brain (e.g. nucleus ruber) by enzyme-
histochemical and experimental methods. Rattus norvegicus (Rodentia)
c Development of the terminal vascular bed of the heart. Rattus norvegicus (Rodentia)
d Development of the vegetative heart innervation. Rattus norvegicus, Cavia cobaya
(Rodentia)
SCHIFF, J. A. Ph.D., Prof. — Dept. of Biol., Brandeis Univ., WALTHAM, Mass. 02154,
U.S.A.
a Chloroplast development and inheritance; source of materials and information, and
induction by light. Euglena spec. (Euglenophyceae)
b Formation of sulfate esters of carbohydrates and lipids, particularly in the formation of
cell walls and photosynthetic membranes. (Algae)
Off. 72, 54 NANCY 01, France
a Téréatologie: origine, évolution et transmission des lésions, excroissances et duplications.
Dugesia tigrina (Turbellaria) (avec F. STEPHAN)
b Rôles respectifs du système nerveux et des territoires dans la régénération. Dugesia lugubris
(Turbellaria)
SCHIMKE, R. T. M.D., Prof. — Dept. of Pharmacol., School of Med., Stanford Univ.,
STANFORD, Calif. 94305, U.S.A.
Hormonal regulation of oviduct development and specific cell function. *Gallus domesticus* (Aves)

Hormonal regulation of ovalbumin synthesis and ovalbumin messenger RNA content of oviduct tubular gland cells. *Gallus domesticus* (Aves)

SCHIMMELPFENNIG, K. — Abt. Embryonalpharmakol., Pharmakol. Inst., Freie Univ., Thielallee 69, 1 BERLIN 33, W.Germany


SCHLESINGER, A. B. Ph.D., Prof. — Dept. of Biol., Creighton Univ., 2410 California St., OMAHA, Neb. 68131, U.S.A.

a Phase cinematographic time-lapse recording of morphogenetic movements of marginal tissue. *Gallus* spec. (Aves)

SCHLOOT, W. Dr.rer.nat. — Inst. für Humangenet., Univ. Hamburg, Martinistr. 52, 2000 HAMBURG 20, W.Germany

a Developmental genetics of various enzymes (a.o. isoenzymes). *Oryctolagus cuniculus* (Lagomorpha)

b Influence of psychotropic drugs and metabolism in embryogenesis. Same species as a

SCHLÜTER, G. Dr.med. — Anat. Inst. der Univ., Abt. für Neuroanat., Nussallee 10, 53 BONN, W.Germany

SCHMIALEK, P. Dr.med., Dipl.Chem. — Zentralinst. Biochem./Biophysik, Freie Univ. Berlin, Arnimallee 22, 1 BERLIN 33, W.Germany

a Hormonal effects in metamorphosis. *Tenebrio molitor* (Coleoptera), *Calliphora erythrocephala* (Diptera)

b Nucleo-cytoplasmic interrelations in somatic cells. *Mus musculus*, *Mesocricetus auratus* (Rodentia)


da Differentiation potentialities of cells. (Hydrozoa)

b Tissue stability and metaplasia in the development of medusae buds. Podocoryne carnea (Hydrozoa)

SCHMIDT, A. J. Ph.D., Prof. — Dept. of Anat., Coll. of Med., Univ. of Illinois, 1853 W.Polk St., P.O. Box 6998, CHICAGO, Ill. 60680, U.S.A.

a Hormonal influences on regenerating systems. *Triturus viridescens* (Urodela)

b The chemistry of regenerating systems. *Triturus viridescens* (Urodela)

c Fine structure of cells and tissues of regenerating systems. *Triturus viridescens* (Urodela)

d Histo- and cytochemistry of repairing cutaneous wounds. *Mus musculus* (Rodentia)

e Regeneration of normal and dystrophic muscle. *Mus musculus* (Rodentia)


a Embryology. *Camelus bacterianus* (Artiodactyla)

SCHMIDT, G. H. Dr.rer.nat. — Inst. für Angew. Zool., Univ. Würzburg, Röntgenring 10, 87 WÜRZBURG, W.Germany

a Postembryonic development of holometabolic forms. Esp. *Formica polyctena*, *F. pratensis* (Hymenoptera)

SCHNEIDER, H. M.D. — Inst. Natl. de la Santé et de la Rech. Méd., Unité de Physiol. placent., Hôp. Saint-Antoine, 184 rue du Faubourg Saint-Antoine, 75 PARIS XIIe, France

SCHNEIDERMAN, H. A. Ph.D. — Developm. Biol. Lab. and Center for Pathobiol., Univ. of California, IRVINE, Calif. 92664, U.S.A.

a Selection and analysis of mutants with defects in their endocrine systems, in pattern formation and in intercellular communication. *Drosophila melanogaster* (Diptera)

b Effects of juvenile hormones and ecdysones on organisms other than insects; mode of action of juvenile hormone. *Hyalocephora eccropia*, *Tenebrio molitor*, *Galleria mellonella*, *Pyrrhocoris apterus* (Insecta and other Arthropoda)

SCHNETTER, W. Dr.rer.nat. — Zool. Inst. der Univ., Physiol. Lehrstuhl, Berlinerstr. 15, 6900 HEIDELBERG, W.Germany

a Early embryology. *Leptotinotarsa decemlineata* (Coleoptera)

b Morphogenetic function of egg components; transplantation of nucleic and ooplasm. Same species as a

c Synthesis of RNA and protein during early embryogenesis. (Insecta)

SCHOELLER (RACCAUD), Mrs. J. Dr.ès Sci., Prof. — Lab. de Physiol. des Insectes, Univ. de Paris VI, 7 quai Saint-Bernard, 75 PARIS Ve, France

a Expériences sur la céphalogenèse larvaire et imaginale. *Calliphora spec.* (Diptera)

SCHOLL, A. Ph.D. — Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlistr. 8 CH-3012 BERN, Switzerland

a Genetical and biochemical analysis of creatine kinase isoenzymes during differentiation. (Teleostei)

b Genetic and epigenetic control of protein synthesis during cytodifferentiation with emphasis to post-translational control of gene products (creatine kinase isoenzymes). (Teleostei and other Vertebrata)
Zool. in Development
Oocyte • Experimental Aplysia Analysis
Membrane Teratogenesis. Dr.en
Prof. • Testis Ph.D., Gonadal Control Development. Influence Calcium Developmental Analysis Comparison Elucidation Dr.es Interspecific • Skull Schouten, Schottfi, Schooneveld, Scholl, Schreiber, Schouten, Schramm, Schowing, Schroedcr, Schryver, Schr, B. Dr.en Med., Prof. — Lab. d’Histol.-Embryol. B, Fac. de Med., 45 rue des Sts. Pères, 75 PARIS VI, France

SCHREIBER, B. Prof. — Ist. di Zool., Univ. di Parma, Via Università 12, 43100 PARMA, Italy
a Experimental morphology of bone induction and inhibitory action of thalidomide. Mus musculus, Rattus spec. (Rodentia) (with L. Rinaldi)

a Relations between DNA and nuclear size (non-histonic proteins) among specialized tissues of adult, embryonic tissues, and germinal line. Biompaharia (= Australorhiz) glabra (Pulmonata), Aplysia brasiliana, Bulla striata (Ophiathobrinchia, Gastropoda)
b Nuclear size and DNA content (cytophotometry) of different organs in embryo and larva. Ascidia nigra (Ascididae)
c Comparison between somatic and germinal chromosomes. Parascaris equorum (Nematoda)

a Oogenesis and its hormonal control: 1. in vitro study of possible material transfer from coelomocytes to coelomic oocytes; 2. nucleolus formation in eleocytes and autoradiography of uridine metabolism; 3. possible hormonal control of fertilizin synthesis. Nereis grubei (Polychaeta)

SCHROEDER, Th. E. Dr. — Dept. of Anat., Sch. of Med., Stanford Univ., STANFORD, Calif. 94305, U.S.A.

a Morphologic and biochemical aspects of skeletal development of the early embryo in organ culture. (Mammalia)
b Studies on chondrocyte hypertrophy including influences on hypertrophy and fate of hypertrophic cells. (Mammalia)
c Calcium metabolism in development. (Mammalia)

SCHUBIGER, G. Ph.D. — Developm. Biol. Lab. and Center for Pathobiol., Univ. of California, IRVINE, Calif. 92664, U.S.A.
a Analysis of mutants with defective endocrine systems. Drosophila melanogaster (Diptera)
b Developmental capacities of imaginal discs and embryos. Same species as a

SCHUBIGER (STAUB), Mrs. M. Ph.D. — Developm. Biol. Lab. and Center for Pathobiol., Univ. of California, IRVINE, Calif. 92664, U.S.A.
a Analysis of chemically induced temperature sensitive mutants effecting late larval, prepupal, and pupal stages. Drosophila melanogaster (Diptera)

SCHUETZ, A. W. Ph.D. — Dept. of Popul. Dynamics, Sch. of Hyg. and Public Health, Johns Hopkins Univ., 615 N.Wolfe St., BALTIMORE, Md. 21205, U.S.A.
a Control and secretion of gonadotrophic hormones. (Mammalia)
b Gonadal steroidogenesis. (Amphibia; Mammalia)
c Testis differentiation and spermatogenesis. (Mammalia)
d Oocyte maturation. (Asteroidae; Amphibia; Mammalia)
e Membrane structure and function. (Asteroidae; Amphibia)
f Protein synthesis in oocytes. (Asteroidae; Amphibia; Mammalia)
b Erythropoiesis. *Phororhiza* (Phororhizidae; Holothurioidea)
c Development of root nodules and the biosynthesis of leghemoglobin. *(Leguminosae)*
SCHULTZ, R. L. Ph.D., Prof. — Dept. of Human Biol., Univ. of Colorado Dent. Sch., 4200 E. 9th Ave., DENVER, Colo. 80220, U.S.A.
a Placental transport. *Rattus spec.* (Rodentia), *Canis familiaris* (Carnivora)
SCHLAMACHER, G. H. Dr.sc.med., Dr.med.dent., Prof. — Anat. Inst., Med. Bereich, Univ. Rostock, Gertrudenstrasse 9, 25 ROSTOCK 1, EastGermany
a Allometropic Organuntersuchungen und Osteogenese. *Mesocricetus auratus* (Rodentia)
b Cranigenese und Osteogenese. *Larus ridibundus*, *Gallus domesticus* (Aves)
c Experimentelle Untersuchungen zur Frage von Organ- und Schädelveränderungen auf Grund statischer Veränderungen in der Postnatalperiode (Amputation der Vorderextremitäten). *Rattus norvegicus* (Rodentia)
d Untersuchungen des postnatalen Schädel- und Organwachstums nach pränatalem Einfluss peristatischer Faktoren (akustische und optische Reize, diätetische Einflüsse). *Rattus norvegicus* (Rodentia), *Oryctolagus cuniculus* (Lagomorpha)
SCHWALM, F. E. Dr.phil.nat. — Dept. of Biol. Sci., Illinois State Univ., NORMAL, Ill. 61761, U.S.A.
a Synthesis, storage and utilization of morphogenetic agents in oogenesis and early embryogenesis (electron microscopy, autoradiography). *Coeolopa frigida* (Diptera)
b Controlling factors and structural changes involved in egg diapause. *Melanopus differentialis* (Orthoptera)
SCHWARTZ, V. Dr rer.nat., Prof. — Zool. Inst. der Univ., Hölderlinstr. 12, 74 TÜBINGEN, W.Germany
SCHWEICHEL, J.-U. Dr. — II. Anat. Inst. der Freien Univ. Berlin, Kön.-Luise-Str. 15, 1 BERLIN 33, W.Germany
a Development and teratology of peripheral nervous system. *Rattus spec.*, *Mus musculus* (Rodentia)
b Cell death during development and teratological events in this field. Same species as a
SCHWEIGER, H. G. Dr.med., Prof. — Max-Planck-Inst. für Zellbiol., Anton-Dohrn-Weg, Postfach 1009, 294 WILHELMSHAVEN, W.Germany
a Biochemical aspects of nucleo-cytoplasmic interrelationships. (unicellular Algae)
b Autonomy of chloroplasts. (Algae)
c RNA synthesis in anucleate cells. (Algae)
d Cooperation between different subcellular components in morphogenesis. (Algae)
a Organ development of primordia. *Rattus norvegicus* (Rodentia)
SCHWOCHAU, M. E. Dr rer.nat. — Inst. für Allgem. Biol., Univ. Düsseldorf, Mettannner Str. 16-18, 4000 DÜSSELDORF, W.Germany
a Molecular biology and genetics of the Y-chromosome. *Drosophila* spp. (Diptera)
SCISŁAWSKI, A. M.D. — Dept. of Biol. and Embryol., Acad. of Med., ul. Kopernika 7, KRAKÓW, Poland
a Regeneration of the central nervous system. *Triturus spec.*, *Ambystoma* spec. (Urodela)
SCONZO, Miss G. — Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy
a RNA synthesis in early development. *Paracentrotus lividus* (Echinoidae)
a Teratogenesis of mumps virus and feline panleukopenia virus: transplacental and fetal infection, passage of virus across the blood-brain barrier; teratologic changes, especially cerebellar hypoplasia, hydrocephalus, and endocardial fibroelastosis. *Felix catus* (Carnivora)
b Teratogenesis of bovine viral diarrhea virus, producing cerebellar hypoplasia, cataracts, retinal degeneration, optic nerve degeneration, mummified fetuses, abortions, and other changes when fetal viral infection occurs at certain stages of gestation. *Bos taurus* (Artiodactyla)
SCOTT, T. K. Ph.D., Prof. — Dept. of Botany, Univ. of North Carolina, CHAPEL HILL, N.C. 27514, U.S.A.
a Relation between auxin transport and growth in seedlings as influenced by age and light. *Pisum sativum* (Leguminosae), *Zea mays* (Gramineae).

b Apical dominance; characterization of the hormonal control exhibited by shoot apices in lateral bud suppression. *Pisum sativum* (Leguminosae), *Colesus blumei* (Labiateae).


SEARLS, R. L. Ph.D., Prof. — Dept. of Biol., Temple Univ., Broad and Berks St., PHILADELPHIA, Pa. 19122, U.S.A.


development of spontaneous and evoked phasic activity of CNS in prenatal period. (Aves; Mammalia).

b Development of low and high frequency impedance in fetal brain tissue. (Aves; Mammalia).

c Development of steady and membrane potential in fetal brain. (Aves; Mammalia).

d Development of extracellular environment of fetal brain (physical and chemical). (Aves; Mammalia).

e Development of membrane ATP-ase system in fetal brain tissue. *Gallus domesticus* (Aves)


a In vitro differentiation of embryonic cells; which embryonic stages give cells competent to do this? identity of differentiating cells. *Drosophila melanogaster* (Diptera).


development and differentiation of mast cells after stimulation with 48/80 (histology and histochemistry). *Rattus norvegicus* (Rodentia).

ultrastructural development and differentiation of mast cells. *Rattus norvegicus* (Rodentia).


a Immunologic analysis of pituitary gonadotrophin function: development and species specificity. (Vertebrata).

b Mechanism of hormone action. (Vertebrata).

c Action of blastotoxic chemical agents. (Vertebrata).


e Studies on RNA in implantation. *Rattus norvegicus* (Rodentia), (Primates)

SEHVAL, P. P. Dr. — Dept. of Biol., East Carolina Univ., P.O.Box 2577, GREENVILLE, N.C. 27834, U.S.A.

a Factors regulating urease in cotyledons in vitro. (Angiospermae).


SEICHERT, V. MUDr. — Dept. of Anat., Charles Univ., U nemocnice 3, PRAHA 2, Czechoslovakia.


SEIDEL, F. Dr.phil., Prof.(Emer.) — Zool. Inst. der Univ., Ketzerbach 63, 355 MARBURG/Lahn, W.Germany.

a Entwicklungphysiologie im Stadium der Furchung und Bildung der Képergrundgestalt. *Platynemis spec.* (Odonata), *Oryctolagus cuniculus* (Lagomorpha).


a The genetics and development of color and color pattern in the white and blue morphs. *Anser caerulescens* (Aves).


a Ultrastructure of organ development, especially hemocytes and the storage tissue in the midgut. *Cupiennius salei* (Ctenidae, Araneida, Arachnida).

b Cell migration during early development (electron microscopy). Same species as a


a Protein and RNA synthesis during metamorphosis; correlation with hormonal (ecdysone) secretion. *Calliphora erythrocephala* (Diptera).

b Mode of action of juvenile hormone. *Periplaneta americana* (Blattariae), *Calliphora erythrocephala* (Diptera).
SEKIGUCHI, K. Ph.D. — Inst. of Zool., Tokyo Kyōiku Univ., Otsuka 3-29-1, Bunkyo-ku, TOKYO, Japan

a. Transplantation experiments with the egg and function of the lateral organ in the embryo. Tachypleus tridentatus (Xiphosura)  
b. Embryology. Propallene longicaeps (Pantopoda)  

SELLER, Miss M. J. Ph.D. — Paediat. Research Unit, Guy’s Hosp. Med. School, LONDON S.E.1, England

a. Haematology of congenital anaemia in the W-series mutants. Mus musculus (Rodentia)  
b. Experimental teratology. (Mammalia)  
c. Experimental production of chimaeras by egg fusion and tissue transplantation. Same species as a  
d. Transplantation of liver to ectopic sites in newborns and adults. Mus musculus, Rattus norvegicus (Rodentia)  

a. Ultrastructural and experimental study of cleavage. Triturus alpestris (Urodela), Xenopus laevis (Anura)  
b. Ultrastructural changes during growth. Microstarias thomassiana (Desmidaeae) (with C. H. WADDINGTON)  

SELVERSTON, A. I. Ph.D. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.  
a. Development of giant fiber system. Loligo opalescens (Cephalopoda)  

SEMBRAT, K. Ph.D., D.Sc., Prof. — Inst. of Zool., Univ. of Wrocław, ul. Sienkiewicza 21, WROCŁAW 2, Poland  
a. Cytological and cytochemical studies in early development. Embletonia pallida (Opisthobranchia, Gastropoda)  
b. Experiments on morphogenetic role of endocrines in metamorphosis. (Amphibia)  

SENGEL, Ph. Dr.ēs Sci., Prof. — Lab. de Zool., Inst. de Recherches Biol., Univ. Scient. et Méd. de Grenoble, Cedex 53, 38 GRENOBLE, France  
a. Skin and feather development; production of supernumerary pterylae: mechanisms of feather pattern development. Gallus domesticus (Aves)  
b. Ultrastructure of skin development. Pleurodeles waltlī (Urodela), Gallus domesticus (Aves)  
c. Role of axial organs in limb and skin development. Gallus domesticus, Coturnix c. japonica, Anas boschas (Aves)  

SENN, D. G. Ph.D. — Dept. of Comp. Neurol., Zool. Anstalt der Univ., Rheinsprung 9, CH-4051 BASEL, Switzerland  
a. Fundamental study of comparative embryology of the central nervous system. (Pisces; Amphibia; Reptilia)  
b. Comparison of forebrain and midbrain. (Amphibia; Reptilia)  


SENTEIN, P. Dr.ēs Méd., Dr.ēs Sci., Prof. — Lab. d’Histol., Fac. de Méd., Univ. de Montpellier, 34 MONTPELLIER, France  

SÉRMAN, D. D.Sc. — Inst. of Biol., Univ. of Zagreb, Salata 3, 41001 ZAGREB, Yugoslavia  
a. Analysis of soluble proteins in organogenesis. Rattus norvegicus (Rodentia) (with N. ŠKREB)  
b. Protein patterns in embryo-derived teratocarcinomas and in host serum (polyacrylamide electrophoresis). Mus musculus (Rodentia) (with D. SOLTER)  

SERRI, F. M.D., Prof. — Dept. of Dermatol., Univ. of Pavia, Policlinico S.Matteo, 27100 PAVIA, Italy  
a. Morphology and physiology of fetal skin. Homo sapiens (Primates)  
b. Microbiochemistry and histochemistry of carbohydrate and intermediate metabolism enzymes in fetal skin, especially developmental changes of enzyme activities. Homo sapiens (Primates)  

SETO, F. Ph.D. — Dept. of Zool., Univ. of Oklahoma, 730 Van Vleet Oval, Rm. 222, NORMAN, Okla. 73069, U.S.A.  
a. The ontogenetic appearance and maturation of the primary homograft rejecting and primary humoral antibody producing potential in embryos and growing juveniles. Gallus domesticus (Aves)  

SETOGUTI, T. Dr.Med., Prof. — 3rd Dept. of Anat., Nagasaki Univ., School of Med., Sakamoto-machi, NAGASAKI 852, Japan  
a. Electron microscopy of mast cell development. Triturus pyrrhogaster (Urodela)  

SEVENKO, Mrs. G. MUDr. — Inst. of Embryol., Fac. of Med., Charles Univ., Albertov 4, PRAGUE 2, Czechoslovakia
a Development of taste buds (electron microscopy, cytochemistry). *Homo sapiens* (Primates)

SHAAYA, E. Ph.D. — Dept. of Biol. Sci., Purdue Univ., LAFAYETTE, Ind. 47907, U.S.A.

a Control of nucleic acids and protein synthesis by ecdysone and juvenile hormone during postembryonic development. *Periplaneta americana* (Blattariae). *Calliphora erythrocephala* (Diptera)

b The role of juvenile hormone in the synthesis of protococytachic acid glucoside in the accessory sex glands. *Periplaneta americana* (Blattariae)

SHAH, R. V. Ph.D., Prof. — Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA-2, India

a Tail regeneration in embryos and adults. *Gekko* spec., *Mabuya* spec. (Lacertilia)

b Liver regeneration and physiology. (Vertebrata)

c Spleen, pancreas, and lymph gland regeneration. (Vertebrata)

d Physiology of developing muscles (respiration). (Vertebrata)

SHAHAM, Y. M.S. — Dept. of Zool., Tel-Aviv Univ., 155 Herzl St., TEL-AVIV, Israel

a Reproductive biology. *Psammomys obesus* (Rodentia)

SHALGI (HARSINA), Mrs. R. B.S. — Dept. of Zool., Tel-Aviv Univ., 155 Herzl St., TEL-AVIV, Israel

a Composition of follicular fluid. *Homo sapiens* (Primates)

b Microcinematography of fertilization. *Rattus norvegicus* (Rodentia)


a Ultrastructural localization of lens protein synthesis in the embryo. *Gallus domesticus* (Aves)

SHANKLIN, D. R. Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 East 57th St., CHICAGO, III. 60637, U.S.A.

SHAPIRO, S. Ph.D., Prof. — Dept. of Botany, Univ. of Massachusetts, AMHERST, Mass. 01002, U.S.A.

a Effects of cytokinins on morphogenesis: 1. localization of sites of flower formation; 2. release of growth of lateral branches; 3. control of senescence. *Xanthium strumarium* (Compositae)

b Growth control of lateral buds: possible basal dominance rather than apical dominance. *Xanthium strumarium* (Compositae)

SHAPPIRIO, D. G. Ph.D., Prof. — Dept. of Zool., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.

a Developmental physiology and biochemistry, especially growth and metamorphosis. (*Saturniidae* etc., *Lepidoptera*; *Chironomidae* etc., *Diptera*)

SHARMA, K. K. M.Sc. — Dept. of Biochem., Fac. of Sci., Allahabad Univ. ALLAHA-BAD-2, U.P., India

a Enzymes in the egg and in the fat body from larva till young adult. *Philosamia ricini* (Lepidoptera) (with R. PANT)

SHAVER, Miss E. L. Ph.D. — Dept. of Anat., Univ. of Western Ontario, LONDON, Ont., Canada


a Specificity of jelly-coat in fertilization (immunology, biochemistry). *Rana clamitans*, *R. pipiens* (Anura)

b Fluorescence microscopy and histochemistry of oviducal secretions. (*Ranidae*, Anura)

c Effects of tissue-specific antibodies on embryonic differentiation. (*Anura*)

d Antigenic localization on spermatozoa (electron microscopy, immunofluorescence). *Rana pipiens* (Anura)


SHEPARD, T. H. M.D., Prof. — Central Lab. for Human Embryol., Dept. of Pediat., School of Med., Univ. of Washington, SEATTLE, Wash. 98105, U.S.A.

a Effect of rubella virus on the fetus. *Homo sapiens* (Primates)

b Effect of galactoflavin on the fetus. *Rattus* spec. (Rodentia)

c Histology and biochemistry of achondroplasia (ac/ac strain; organ culture, radio-isotopes). *Oryctolagus cuniculus* (Lagomorpha), *Homo sapiens* (Primates)

d Effects of teratogens on embryos in *vitro*. *Rattus norvegicus* (Rodentia) (with T. TANIMURA)

e Effect of cytochalasin B on closure of the anterior neuropore in *vitro*. *Gallus domesticus* (Aves), *Rattus* spec. (Rodentia)


a Morphogenetic effects of follicle-stimulating hormone. *Gallus domesticus* (Aves) (with M. S. LAKSHMI)

b Behaviour of neoplastic cells transplanted into embryos. *Gallus domesticus* (Aves) (with M. S. LAKSHMI)

c Biochemical and biophysical characterization of the cell surface using natural pH gradients. (with M. S. LAKSHMI)
SHERIDAN, J. D. D.Phil. — Dept. of Zool., Univ. of Minnesota, MINNEAPOLIS, Minn. 55455, U.S.A.

SHIELD, J. W. Ph.D. — Zool. Dept., Univ. of W.Australia, NEDLANDS, W.Austr. 6009, Australia


a Cytogenetics of the development of embryos in vitro. Mus musculus, Rattus spec., Mesocricetus auratus (Rodentia)
b Electron microscopy of chromosome structures. Same species as a

SHIOMI, T. Dr., Prof. — Dept. of Genet., School of Med., Nagasaki Univ., 12-4, Sakamoto-machi, 852 NAGASAKI, Japan

a Radiation genetics (embryo, germ cells). Drosophila melanogaster (Diptera)

SHIRAI, H. B.Sc. — Lab. of Physiol., Ocean Research Inst., Univ. of Tokyo, Minamidai 1-15, Nakano-ku, TOKYO, 164 Japan

a Mechanism of spawning. Asterias amurensis, Asterina pectinifera (Asteroidea)
b Electron microscopic study on spawning and oocyte maturation. (Asteroidea)
c Biochemical pathway of 1-methyladenine formation in ovary. (Asteroidea)

SHOGOR, R. L. Ph.D., Prof. — Dept. of Biol., Carleton Coll., NORTHFIELD, Minn. 55057, U.S.A.

a Migration of primordial germ cells from tritiated thymidine labelled heterotypic grafts of germinal crescent. Gallus gallus (Aves)

b Activation of sperm by material derived from eggs or oviduct: artificial activators: sperm-egg interaction. Limulus polyphemus (Xiphosura)

SHORO, A. A. M.Phil. — Dept. of Anat., St. Thomas’s Hosp. Med. School, LONDON S.E.1, England

a Production of limb deformities and growth retardation in the fetus with neuromuscular blocking agents. Rattus norvegicus (Rodentia)

SHOSTAK, S. Ph.D. — Dept. of Biol., Univ. of Pittsburgh, PITTSBURGH, Pa. 15213, U.S.A.

a The mechanism and control of cell movement during homeostasis and budding: role of collagen-like protein in the mesoglea. Hydra viridis, H. oligactis, H. pseudoligactis, H. pirardi, H. fusca (Hydrozoa)

SHUKUYA, R. M.D., Prof. — Dept. of Biochem., Nippon Med. School, 1-1-5 Sendagi, Bunkyo-ku, TOKYO, Japan

a Genetic control of hemoglobin switch during metamorphosis. Rana catesbeiana (Anura) (with A. KAJITA)

b Change of isozyme patterns during metamorphosis. Rana catesbeiana (Anura) (with A. KAJITA)

c Control of enzyme formation and activity in liver during development. Rana catesbeiana (Anura) (with H. NAGANO)

SHULOV, A. D.Sc., Prof. — Dept. of Entomol. and Venomous Anim., Hebrew Univ., JERUSALEM, Israel

a Regeneration, transplantation, and tissue implantation. Leiurus quinquestriatus (Scorpion-idea)

SHUPE, J. L. D.V.M., Prof. — Vet Dept., Utah State Univ., LOGAN, Utah 84321, U.S.A.

a Congenital malformations, especially musculo-skeletal and cleft palate. Bos taurus, Ovis aries (Artiodactyla)

b Congenital anterior polar cataracts, cleft lip and cleft palate. Canis familiaris (Carnivora)

c Congenital multiple exostosis (hereditary osteochondromatosis). Equus caballus (Perissodactyla)

d Fluorides as related to placental transfer and intra-uterine development. Ovis aries, Bos taurus (Artiodactyla)

e Congenital skeletal anomalies as related to loco plants. (Astragalus spp. and other Papilionaceae). Ovis aries, Bos taurus (Artiodactyla)


a Interaction between eye cup and embryonic tissue implanted after lens removal in embryos and larvae. (Amphibia)

SICHEL, G. M.D., Prof. — Ist. di Zool., Univ. di Catania, Via Androne 81, 95124 CATANIA, Italy

a Regeneration (origin of blastema cells). (Sabellimorpha, Nereidae, Polychoeta)

SIDKY, Y. A. Ph.D. — Dept. of Zool., Fac. of Sci., Univ. of Alberta, EDMONTON, Alta., Canada

SIDOROVA, Mrs. V. F. Dr.biol.sci. — Inst. of Human Morphol., Acad. of Med. Sci. of the U.S.S.R., Baltiyskaya St. 8, MOSCOW 125315, U.S.S.R.

a Growth and regeneration of the inner organs and their regulation. Oryctolagus cuniculus (Lagomorpha), Rattus norvegicus, Mus musculus, Mesocricetus auratus (Rodentia)

SIGNORAT, J. Dr.es Sci., Prof. — Lab. d’Embryol., Unité de Sci., Univ. de Caen, 14 CAEN, France
Study of nuclear differentiation and specific activities by means of nuclear transplantation. *Ambystoma mexicanum* (Urodela)

La cinétique cellulaire au cours de la segmentation: modalités, determinisme, signification.

*Ambystoma mexicanum* (Urodela)

SIGOT, M. Dr.ès Sci. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France


SIGOT (LUIZARD), Mrs. M. F. Lic.ès Sci. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France


SILÈN, L. K. P. Fil.,Dr. Prof. — Zool. Inst., Univ. of Stockholm, Rådmansgatan 70 A, Box 6801, S-113 86 STOCKHOLM, Sweden

a. Embryology. (Bryozoa)

SIMKISS, K. Ph.D., Prof. — Dept. of Zool. and Comp. Physiol., Queen Mary Coll., LONDON E.1. England

a. Respiratory acidosis and acid-base balance in embryos. (Aves)

b. Movement of Ca**45** through the embryos in eggs subjected to carbon dioxide in the air. *Gallus domesticus* (Aves)

SIMON, M. I. Ph.D. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.

a. Mechanism of molecular assembly in subcellular organelles


SINCLAIR, J. G. Ph.D., Prof. (Emer.) — Dept. of Anat., Med. Branch. Univ. of Texas, GALVESTON, Tex. 77550, U.S.A.

a. Development of vertebral vascular pattern in embryos. *Stenella coeruleoalbus* (Cetacea)

b. Development of central nervous system and receptors. *Tursiops truncatus*, *Stenella coeruleoalbus*, *Eschrichtius gibbosus*, *Physeter catodon* (Cetacea), *Callorhinus ursinus* (Pinnipedia)

SINGER, M. Ph.D., Prof. — Dept. of Anat., Developm. Biol. Center, School of Med., Case Western Reserve Univ., 2119 Abingdon Rd., CLEVELAND, Ohio 44106, U.S.A.

a. Regeneration. (Amphibia)

b. The neurotrophic control of limb regeneration. *Triturus viridescens* (Urodela)

SINGER, R. D.Sc., Prof. — Dept. of Anat., Div. of Biol. Sci., Univ. of Chicago, 1025 East 57th St., CHICAGO, Ill. 60637, U.S.A.

a. General embryology *Hystric ariecaeaustralis* (Rodentia), *Homo sapiens* (Primates)


a. Histone content of developing ovaries. *Bos taurus* (Aetiodactyla)

SINGH, I. Ph.D., Prof. — Dept. of Anat., Med. Coll., ROHTAK, India

a. Asymmetry in muscle and bone weight in limbs of fetuses. *Homo sapiens* (Primates)

SINGH, J. B. M.Sc. — Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD-2, U.P., India

a. Lipid metabolism and characterization of phospholipids during development from embryo till young adult (thin layer and gas-liquid chromatography). *Philosamia ricini* (Lepidoptera) (with R. PANT and G. Ch. NAUTIYAL)

SINGH, R. P. Ph.D. — Dept. of Anat., Univ. of W.Ontario, LONDON, Ont., Canada


a. DNA synthesis and cell cycles during neural retina regeneration. *Triturus vulgaris*, *T. cristatus* (Urodela) (with O. G. STROEVA and V. I. MITASHOV)


SIRLIN, J. L. Dr.nat.sci., Prof. — Dept. of Anat., Med. Coll., Cornell Univ., 1300 York Ave., NEW YORK, N.Y. 10021, U.S.A.

a. Functional correlation of transfer RNA in the embryo and placenta. *Mus musculus* (Rodentia)

SJÖTE BYSKOV, Mrs. A. G. — Finsen Lab., Finsen Inst., 49 Strandboulevard, DK-2100 COPENHAGEN, Denmark

SJÖSTRAND, F. S. M.D., Ph.D., Prof. — Dept. of Zool., Univ. of California, LOS ANGELES, Calif. 90024, U.S.A.


a. Experimental teratogenesis in early stages: maternal and embryonic metabolism of teratogens (fluorouracil, 5-bromodeoxyuridine, methotrexate); development of model systems for teratogenesis (*Echinioidea*), *Mus musculus* (Rodentia)
b Cytology and cytochemistry of gametogenesis, fertilization, and cleavage. *Arbacia punctulata, Echinarchius parma, Lytechinus pictus* (Echinoidae), *Mus musculus* (Rodentia)

SKINNER, D. M. Ph.D., Prof. — Biol. Div., Oak Ridge Natl. Lab., P.O.Box Y, OAK RIDGE, Tenn. 37830, U.S.A.

a Metabolism of nucleic acids in the molt cycle. *Gecarctinus lateralis* (Decapoda, Crustacea)
b Functions of satellite DNA’s and macromolecular metabolism in regenerating tissues. Same species as a (with D. E. GRAHAM)

SKOOG, F. Ph.D., Prof. — Inst. of Plant Developm., and Dept. of Bot., Univ. of Wisconsin, Birge Hall, MADISON, Wis. 53706, U.S.A.

SKREB, N. M.D., D.Sc., Prof. — Inst. of Biol., Univ. of Zagreb, Šalata 3, 41001 ZAGREB, Yugoslavia

a Early differentiation; transplantation, in *vitro* culture, autoradiography. *Rattus norvegicus* (Rodentia) (with B. LEVAK (SVAJGER) and A. SVAJGER)
b Analysis of soluble proteins in organogenesis. Same species as a (with D. SERMAN)
c Differentiation of early postimplantation stages under the kidney capsule, teratocarcinogenesis, nature of embryonal carcinoma cells; transplantation, electron microscopy, *Mus musculus* (Rodentia) (with D. SOLTER and I. DAMJANOVIĆ)

SLABF, O. D.Sc., Prof. — Inst. of Histol. and Embryol., Charles Univ., Karlovarská 48, PLZENÉ, Czechoslovakia — temporarily: Cité Jean de la Fontaine, La Tour, ORAN, Algeria

SLACK, Mrs. C. Dr.Sc., Ph.D. — Dept. of Physiol., Royal Free Hosp. Med. School, LONDON W.1, England

a Permeability of cell surface and junctional membranes of pregastrular stages in *vivo* and in *vitro* (electrophysiology). *Xenopus laevis* (Anura), *Ambystoma mexicanum* (Urodela)

SLADECZEK, F. RNDr., DSc. Prof. — Dept. of Exper. Zool., Charles Univ., Viničná 7, Praha 2, Czechoslovakia

a Transplantation of nuclei in relation to the development of antigenic characteristics. *(Amphibia)* (with A. ROMANOVS?)
b Transplantation of nuclei in relation to nucleic acids. *(Amphibia)* (with J. NEDVIDEK)
c Number of cell generations in relation to cell determination. *(Amphibia)*

SLAVKIN, H. C. D.D.S. — Dept. of Biochem., Univ. of S.California, School of Dent., University Park, LOS ANGELES, Calif. 90007, U.S.A.

a Role of intercellular membrane limited vesicles, partly containing methylated RNAs, in epithelial-mesenchymal interactions in tooth formation; characterization of “histocompatibility antigens” of these vesicles and consequences of “infecting” primary homotypic cell cultures with these profiles. *Oryctolagus cuniculus* (Lagomorpha)
b Search for macromolecular assembly mechanisms controlling specificity of enamel, dentine, and cementum (electron microscopy, biochemical methods, immunochemistry, isotope tracing). *Oryctolagus cuniculus* (Lagomorpha)

SLIPKA, J. Dr.Med., Dr rer nat., C.Sc. — Inst. of Histol. and Embryol., Charles Univ., Karlovarská, PLZENÉ, Czechoslovakia

a The development and teratology of the branchial region. *(Amniota, incl. Homo sapiens)*
b The development of the bursa pharyngea from the standpoint of evolutionary morphology. *Homo sapiens* (Primates)

SMART, I. H. M. M.B., Ch.B. — Dept. of Anat., Univ. of Dundee, DUNDEE DDI 4HN, Scotland, U.K.

a Histogenesis of nerve cells and neuroglia. *Mus musculus* (Rodentia)
b Studies on the geometry of the egg. Various spp. (Aves)

SMIT, A. L. D.Sc., Prof. — Dept. of Zool., Univ. of Durban-Westville, Private Bag 4001, DURBAN, S.Africa

a The ontogenesis of the head skeleton and musculature. *Dendroaspis angusticeps, D. polyplepis* (Ophidia)


a Factors controlling water uptake by dormant cysts, seeds, and spores. *(Angiospermae)*
b Presentation of water insoluble materials to dormant systems prior to germination and their consequent effect on growth and development. *(Angiospermae)*

SMITH, E. J. C. Ph.D. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France

a Growth factors necessary for the survival and growth of malignant tumours in organ culture. *Gallus gallus* (Aves) (with Et. WOLFF and Em. WOLFF)
b The effects of tumours on the growth of embryomas. *Rattus rattus* (Rodentia) (with J. SALAÚIN)

SMITH, G. M.D., Prof. — Sect. of Genet., Stritch School of Med., 2160 S. 1th Ave., MAYWOOD, Ill. 60153, U.S.A.

a Developmental effect of cytochalasin B on lymphocytes. *Homo sapiens* (Primates)
b Teratogenetic action of cytochalasin B. *Gallus domesticus* (Aves)

a Biochemical studies on gene action during development. *Mus musculus* (Rodentia)
b Characterization of redundant DNA. *Mus musculus* (Rodentia)
c Molecular analysis of chromatin diminution. *Ascaris lumbricoides* (Nematoda)

SMITH, L. D. Ph.D. — Dept. of Biol. Sci., Purdue Univ., LAFAYETTE, Ind. 47907, U.S.A.

a Problems of suppression and enzyme activity in lozenge mutants. *Drosophila melanogaster* (Diptera)
b Possible role of intragenic position of alleles on dosage compensation in mutants affecting eye pigments. Same species as a

SMITHBERG, M., Ph.D., Prof. — Dept. of Anat., Sch. of Med., Univ. of Minnesota. MINNEAPOLIS, Minn. 55455, U.S.A.


a In *vitro* differentiation. *Echinococcus granulosus* (Cestoda)

SOBOTKA, P. M.D., CSc. — Inst. of Pathophysioll, Charles Univ., Lidická 1, PLZEN, Czechoslovakia


a Changes in alcohol dehydrogenase during development. *Drosophila melanogaster* (Diptera)
b Ribosomes, ribosomal RNA, and DNA. *Drosophila* spec. (Diptera)

SOLBANI, Mrs. L. Dr. sp. — Lab. de Morphogénet., Anim., Centre Saint Charles, Univ. de Provence, Place Victor Hugo, 13 MARSEILLE 3e, France

a Effects of x-ray irradiation upon adult morphogenesis. *Nereis diversicolor* (Polychaeta)

SOLÉRE, M. Dr. en Méd. — Lab. d’Histol.-Embryol.B, Fac. de Méd., 45 rue des Sts.Pères, 75 PARIS Vle, France


a Metaplastic potencies of embryonic and larval eye for lens and retina regeneration. *Leuciscus bergii*, *Anoptichthys jordani* (Teleostei) (with G. V. LOPASHOV)
b Stimulation of metaplasia of the pure pigmented epithelium of adults into retina by means of agents from larval (or embryonic) retina. *Gallus domesticus* (Aves), *Mus musculus* (Rodentia) (with G. V. LOPASHOV)
c Autoradiography of the cell cycles at artificial metaplasia of the pigmented epithelium into retina. *Rana temporaria* (Anura)


SOLTER, D. M.D., D.Sc. — Inst. of Biol., Univ. of Zagreb, Salata 3, 41001 ZAGREB, Yugoslavia

b Differentiation of early postimplantation stages under the kidney capsule, teratocarcinogenesis, nature of embryonal carcinoma cells; transplantation, electron microscopy. *Mus musculus* (Rodentia) (with I. DAMJANOV and N. ŠKREB)
c Protein patterns in embryo-derived teratocarcinomas and in host serum (polyacrylamide electrophoresis). Same species as b (with D. ŠERMAN)
d Urethan teratogenesis in early embryos (histochemistry, electron microscopy). Same species as b (with I. DAMJANOV)

SOLTYSIKA (MARCINKOWSKA), Mrs. M. Dr. — Dept. of Invert. Zool., Warsaw Univ., Krakowske Przedmieście 26/28, WARSZAWA 64, Poland

a Fine structure of germinal ridges. *Mus musculus* (Rodentia)

SOLURSH, M. Ph.D. — Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA-City, Iowa 52240, U.S.A.

a Effects of glucagon, insulin, and thyroxine on pure cultures of reticuloendothelial cells and parenchymal cells derived from larval and adult liver. *Xenopus laevis* (Anura)
b The role of cell replacement in metamorphosis of the larval pancreas. Same species as a
c Differentiation in cultured sternal chondrocytes: 1. effects of growth hormone; 2. requirements for continuous RNA synthesis; 3. maturation of two cell populations: 4. coregulation of collagen and chondroitin sulfate synthesis. *Gallus domesticus* (Aves)


a Transfer of fertilized eggs by non-surgical techniques. *Bos taurus* (Artiodactyla)

SOMES, R. G. Ph.D., Prof. — Nutrit. Sci. Dept., Storrs Agric. Exper. Station, Univ. of Connecticut, STORRS, Conn. 06268, U.S.A.

a Developmental genetics. *Gallus domesticus* (Aves)
SONHDI, K. C. † Ph.D., Prof. — Rutgers State Univ., NEWARK, N.J. 07102, U.S.A.

SONI, S. L. Ph.D. — Dept. of Botany, Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.

a Electron microprobe analysis of silica accumulation in immature and mature stages of leaf and internode. *Oryza* spec., *Avena* spec. (*Gramineae*). *Cyperus* (*Cyperaceae*).

b Hormonal regulation of growth and invertase activity in stems and coleoptile segments. *Avena* spec., *Oryza* spec. (*Gramineae*).

SOPINSKI, M. M.B. — Dept. of Histol. and Embryol., Acad. of Med., ul. Narutowicza 60, ŁÓDŹ, Poland


SORIANO, L. I. M.D. — Inst. d'Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France


b mRNA synthesis at the polysomal level in embryonic tissues; base composition of mRNA and rRNA. *Gallus domesticus* (Aves) (with J. DESVEAUX).

SPAZIANI, E. Ph.D., Prof. — Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA-City, Iowa 52240, U.S.A.

a Mechanism of ovarian and testicular hormone action on growth and development of reproductive tissues: uterus, seminal vesicles, prostate. *Rattus norvegicus* (Rodentia).

b Hormonal control of melanocyte differentiation and pigment synthesis. *Rattus norvegicus* (Rodentia).

c Biosynthesis of growth and differentiating hormone (ecdysone) by the Y-organ; variations according to molt cycle. *Hemigrapus nudus* (Decapoda, Crustacea).

SPECTOR, C. Ph.D. — Dept. of Biol., Univ. of Pittsburgh, PITTSBURGH, Pa. 15213, U.S.A.

a The possible control of development by differential biosynthesis of specific gibberellins. *Gibberella fujikuroi* (Ascomycetes).

SPENCER, R. P. M.D., Ph.D., Prof. — Dept. of Radiol., Yale Univ., 333 Cedar St., NEW HAVEN, Conn. 06504, U.S.A.

a Development of heart weight and blood volume. (*Delphinoidea*, *Cetacea*), (Mammalia).

b Development of kidney. (Mammalia).

c Development of liver and of spleen. (Mammalia and others).

d Development of liver, spleen, and thyroid as a function of age, height, weight, and body surface area (radio-isotope study). *Homo sapiens* (Primates).


c Biochemistry of metamorphosis. Same species as b (with M. SPIEGEL).

d Ultrastructure of metamorphosis. Same species as b (with M. SPIEGEL).

SPIEGEL, M. Ph.D., Prof. — Dept. of Biol. Sci., Dartmouth Coll., HANOVER, N.H. 03755, U.S.A.

a Protein changes in development. *Arbacia punctulata*, *Lytechinus pictus*, *Strongylocentrotus purpuratus* (*Echinoidea*), *Rana pipiens*, *R. catesbeiana* (Anura) (with E. S. SPIEGEL).


c Ultrastructure of metamorphosis. Same species as b (with E. S. SPIEGEL).

d Biochemistry of metamorphosis. Same species as b (with E. S. SPIEGEL).

SPINELLI, Miss M. M. G. Dent. — Lab. de Zool., Inst. de Rech. Biol., Univ. Scient. et Méd. de Grenoble, Cedex 53, 38 GRENOBLE, France


SPIRIN, A. A. Prof. — Inst. of Biochem., Acad. of Sci. of the U.S.S.R., MOSCOW, U.S.S.R.


a Effects of thalidomide on development. (Aves).

b Function and structure of the epiphysis. (Aves).

c Lymphocytes and epiphysis. (Aves).


a Vitellogenesis and early degeneration of eggs. (Amphibia)

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SPRATT, N. T., Jr. Ph.D., Prof. — Dept. of Zool., Coll. of Biol. Sci., Univ. of Minnesota, Minneapolis, Minn. 55455, U.S.A.

a Nutrient requirements essential to morphogenesis and growth in pre-streak and streak blastoderms. Gallus domesticus (Aves)

b Survey of dehydrogenase enzymes in early embryos: 1. localization of enzyme activity: 2. structural integrity and enzyme activity. Same species as a

c Cytology of the developmental center (organizer). Same species as a

d Mechanism of morphogenetic movements (time-lapse cinematography). Same species as a

e Dynamic population pattern formation by free-swimming organisms. Tetrahymena spec. (Ciliata), Euglena spec. (Euglenophyceae), Arbacia punctulata (Echinoidae)

f Integrative mechanisms in early development. (Aves)

g Role of the microenvironment in cell differentiation. (Aves)

SPREY, Th. E. M.Sc. — Zool. Lab., Univ. of Leiden, Kaiserstr. 63, LEIDEN, Netherlands

a Differentiation and development of imaginal discs: 1. histochemistry; 2. biochemistry, especially proteins (electrophoresis); 3. cell death; 4. ultrastructure of leg disc: 5. in vitro culture of imaginal disc cells (specific adhesion). Calliphora erythrocephala (Diptera)

SRB, V. — Dept. of Biol., Charles Univ., Šimkova 870, HRADEC KRALOVÉ, Czechoslovakia

SREBRO, Z. M.D., Ph.D. — Dept. of Biol. and Embryol., Acad. of Med., ul. Kopernika 7, KRAKÓW, Poland

a X-ray induced congenital malformations and their protection by serotonin. Rattus spec. (Rodentia)

STAAL, G. B. Dr., Jr. — Zocon Corp., 975 California Ave., PALO ALTO, Calif. 94304, U.S.A.

a Influence of insect hormones and synthetic analogs on metamorphosis, reproduction, and embryogenesis. (Orthoptera, Homoptera, Coleoptera, Lepidoptera, Diptera)

STAGNI, Miss A. Dr., Prof. — Inst. of Zool., Fac. of Sci., Univ. of Bologna, Via S.Giacomo 9, 40126 BOLOGNA, Italy

a Sex determination and sex differentiation. Chlorohydra viridissima (Hydroidea)

b Cytochemistry and electron microscopy of oogenesis and spermatogenesis. Same species as a

c Cytometry, cytochemistry, and biochemistry of nucleolus during oogenesis. Spirocrbis pagenstecheri (Serripulidae, Polychaeta)

d Inhibition by antibiotics of steroid hormone-induced sex-reversal in tadpoles. Rana dalmatica (Anura)

STAMPA (DI CASTRO), Mrs. M. Dr.Biol.Sci. — Ist. di Zool. dell’Univ., Viale Regina Elena 324 (al Policlinico), 00100 ROMA, Italy

STANGE, Miss L. Dr.renнат., Prof. — Inst. für Bot., Techn. Univ., Herrenhäuser Str. 2, 3 HANNOVER, W.Germany

a Regeneration; activation of nucleic acid metabolism during cell dedifferentiation. Rhiella helicophylla (Hepaticae), prothallia (Filiinae)

b Effects of growth regulators on meristems. Same species as a

STANISSTREET, M. B.Sc. — Dept. of Zool., Univ. of Liverpool, LIVERPOOL, England

a Protein changes during early development (immunology, electrophoresis). Xenopus laevis (Anura)

b The sensitivity of embryos to maternal antibodies and of lymphocytes against the paternal strain in vivo and in vitro. (Mammalia) (with E. M. DEUCHAR, Bristol)

STAPLES, R. E. Ph.D. — Natl. Inst. for Environm. Health Sci., P.O.Box 12233, RESEARCH TRIANGLE PARK, N.C. 27709, U.S.A.

a Zygote development (physiological, biochemical). Oryctolagus cuniculus (Lagomorpha), Rattus norvegicus, Mus musculus (Rodentia)

b Teratology. Oryctolagus cuniculus (Lagomorpha), Rattus norvegicus, Mus musculus, Mesocricetus auratus (Rodentia)

c Effects of combinations of factors (e.g. drug and stress) on development, from gamete to adult (morphology, biochemistry, behaviour). Mammalia

STARK, D. Dr.med., Prof. — Dr. Senckenberg, Anat. Inst., Med. Fak. der Univ., Ludwig-Reh R. 14, FRANKFURT/Main-Sud, W.Germany


a Fine structure and hormonal activity of intact and cultured embryonic adrenal cells of different species

STARRE, H. van der Drs.biol. — Dept. of Med. Anat. and Embryol., State Univ. of Utrecht, Janskerkhof 3A, UTRrecht, Netherlands

a Eye lens induction in vitro. Gallus domesticus (Aves)

b Histochemistry of eye lens inducers. Same species as a

STARRE (VAN DER MOLEN), Mrs. L. G. van der M.Sc. — Zool. Lab., Univ. of Leiden, Kaiserstr. 63, LEIDEN, Netherlands

a Ultrastructure and histochemistry of embryogenesis. Calliphora erythrocephala (Diptera)

STASTNY, F. M.D. — Lab. of Embryophysiol., Inst. of Physiol., Charles Univ., Albertov 5, PRAHA 2, Czechoslovakia
a Development of extracellular and intracellular environment of foetal brain tissue (physical and chemical). *Gallus domesticus* (Aves), *Cavia porcellus* (Rodentia).
b Development of membrane ATP-ase system in cellular and subcellular elements of foetal brain tissue. Relations to the endocrine factors. *Gallus domesticus* (Aves)

STAY, Miss B. Ph.D., Prof. — Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA-City, Iowa 52240, U.S.A.
a Secretion of the brood sac and structure and physiology of the pleopodia in relation to the nutrition of the viviparous embryo, compared to a non-viviparous species. *Diploptera punctata, Nauphoeta cineria* (Blattariae)

a Radiation effects on developing circulatory system. *(Aves)*

STEDING, G. Priv.-Doz., Dr.med. — Anat. Inst. der Univ., Kreuzbergring 36, 34 GÖTTINGEN, W.Germany
a Experimente zur Entwicklung des Rückenmarkes. *Gallus gallus* (Aves)
b Selbstdifferenzierung der Somiten. *Gallus gallus* (Aves)
c Frühentwicklung. *Gallus gallus* (Aves)
d Strukturentwicklung des Uterus. *Homo sapiens* (Primates)
e Experimente zur Entwicklung der Extremitäten. *(Aves)*
f Experimentelle Analyse der Epitheldifferenzierung. *Gallus gallus* (Aves)
g Autoradiographische Analyse von Entwicklungsbewegungen embryonaler Organanlagen. *Gallus gallus* (Aves)

STEFANELLI, A. Dr., Prof.ord. — Inst. di Anat. Comp. "Battista Grassi", Univ. di Roma, Via A.Borelli 50, 00161 ROMA, Italy
a Nervous microsystems in *vitro*. *Gallus domesticus* (Aves)
b Reaggregation of neuroblasts of different nature; morphology of new synapses

STEFFER, A. J. D.D.S., Ph.D. — Dept. of Anat., Univ. of Chicago. 1025 East 57th St., CHICAGO, ILL. 60637, U.S.A.
— American Dental Assoc., 211 E. Chicago Ave., CHICAGO, Ill. 60611, U.S.A.
a Normal oral-facial development emphasizing formation of the primary and secondary palate. *Mustela putorius furo, Macaca mulatta* and other *Mammalia*
b Mechanisms involved and comparative pathogenesis of the lesions in experimentally-induced cleft lip and cleft palate. Same species as a
c Correlation of drug metabolism, distribution and localization with the congenital malformations in the fetus. Same species as a

STEFFENSEN, D. M. Ph.D., Prof. — Dept. of Bot., Univ. of Illinois, URBANA, ILL. 61801, U.S.A.
a Origin and assembly of ribosomes studied by RNA hybridization and gel electrophoresis in different mutants and chromosome aberrations. *Drosophila melanogaster* (Diptera)

STECEMANN, Mrs. J. H. J. — Histol. Lab., Jan Swammerdam Inst., Univ. of Amsterdam, 1e Const. Huysgenstr. 20, AMSTERDAM-W., Netherlands
a Foetal growth in relation to size and development of placenta. *Ovis aries* (Artiodactyla)
b Vascularization of the placenta in relation to its size and age. Same species as a

STEGNER, H.-E. Dr.med. — Univ.-Frauenklin., Martinistr. 52, 2 HAMBURG 20, W. Germany

STEIN, Miss K. F. Ph.D., Prof. (Emer.) — Dept. of Biol. Sci., Clapp Lab., Mount Holyoke Coll., SOUTH HADLEY, Mass. 01075, U.S.A.
a The culture in *vitro* of mutant embryos, e.g. Lp/Lp: tracer studies. *(Rodentia)*
b Development and genetics of a circling mutation. *Mus musculus* *(Rodentia)*
c Genetics and development of a mutation — similar to or identical with lg/lg — causing blindness with eyes open at birth and the effect of cortical steroids on its development. Same species as b

STEINBERG, M. S. Ph.D., Prof. — Dept. of Biol., Princeton Univ., PRINCETON, N.J. 08540, U.S.A.
a Direct measurements of strengths of intercellular adhesions among embryonic cells. *Gallus domesticus* (Aves)
b Mechanisms in cell aggregation and tissue recontruction. *(Porifera), Rana pipiens* (Anura), *Gallus domesticus* (Aves)
c Physics and chemistry of cell surfaces in relation to cell adhesion. *(Porifera), Gallus domesticus* (Aves)
d Mechanism governing contact inhibition of mitosis and of cell movement (various tissue culture cell strains)
e Mechanisms of nerve - end organ integration (studies of reflex behavior after regeneration of sensory nerves into a topographically rearranged integumentary field). *Rana pipiens* *(Anura)*

STEINITZ, H. † Ph.D., Prof. — Hebrew Univ. of Jerusalem. JERUSALEM, Israel

STENGER (HAFFEN), Mrs. K. E. Drès Sci. — Lab. d'Embryol. Exp., Coll. de France, 11 Place M.Berthelot. 75 PARIS Ve, France

b Tératologie: origine, évolution et transmission des lésions, excroissances et duplications. *Dugesia tigrina* (Turbellaria) (avec J. SCHILIT)
c Développement du système trachéen chez la larve (étude expérimentale). *Tipula flavolineata (Diptera)* (avec J. C. PIHAN)


a Migration et différenciation des cellules de régénération. (Planariidae; Oligochaeta microdrila; Polychaeta errantia)
b Anomalies de la régénération. Same species as a

STEPHENSON, N. G. Ph.D. — School of Biol. Sci., Zool. Building, Univ. of Sydney, SYDNEY, N.S.W. 2006, Australia

(no embryological work in progress)

STERBA, O. — Dept. of Morphol., Inst. of Vertebr. Zool., Czechoslov. Acad. of Sci., Květná 8, BRNO, Czechoslovakia

a Prenatal development of locomotory apparatus. (Insectivora; Chiroptera; Rodentia)

STERN, C. Ph.D., Prof. — Dept. of Zool., Univ. of California, BERKELEY, Calif. 94720, U.S.A.

a Developmental genetics of pattern formation. *Drosophila melanogaster (Diptera)*
b Pleiotropic effect of genes. Same species as a

STERN, H. Ph.D., Prof. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA JOLLA, Calif. 92037, U.S.A.

a Regulation of DNA synthesis during meiotic development. *Trillium erectum, Lilium longiflorum, Tulipa gesneriana, Vicia faba, Belvelvalia romana (Angiospermae)*
b Developmental genetics. *Marchantia polymorpha (Hepaticae)*


a Development of epidermis (autoradiography, electron microscopy, biochemistry). *Rattus spec. (Rodentia), Homo sapiens (Primates)*

STERN, K. M.D., Prof. — Dept. of Life Sci., Bar-Ilan Univ., RAMAT-GAN, Israel

a Relationship of reticulo-endothelial function to growth processes, as exemplified by liver regeneration after partial hepatectomy. *Rattus spec., Mus musculus (Rodentia)*
b Effect on organ growth of administration of isogeneic subcellular tissue fractions to weanlings of inbred strains. *Mus musculus (Rodentia)*

STERN, S. Ph.D. — Dept. of Popul. Dynamics, Sch. of Hyg. and Publ. Health, Johns Hopkins Univ., 615 N.Wolfe St., BALTIMORE, Md. 21205, U.S.A.

a Carbohydrate metabolism in pre-implantation embryos as related to glycolgen metabolism; culture of embryos. *Mus musculus (Rodentia), Homo sapiens (Primates)*
b Composition of ovarian and tubal secretions. Same species as a

c Hormonal control of ovulation. *Mus musculus (Rodentia)*
d Ultrastructure of pre-implantation embryos. *Mus musculus (Rodentia)*
e Oocyte maturation. Same species as a

STEITLER, D. A. Ph.D. — Dept. of Bot., Univ. of Minnesota, MINNEAPOLIS, Minn. 55455, U.S.A.


a Organization of placental blood vessels in relation to physiological exchange. *Ovis aries (Artiodactyla), Equus caballus (Perissodactyla)*
b Electron microscopy of placenta in relation to physiological exchange. *Ovis aries, Bos taurus (Artiodactyla), Equus caballus (Perissodactyla)*

STEVENSON, L. C. Ph.D. — The Jackson Lab., BAR HARBOR, Me. 04609, U.S.A.

a Histogenesis of testicular teratoma (strain 129). *Mus musculus (Rodentia)*
b Developmental genetics. *Mus musculus (Rodentia)*

STEVENSON, J. ROSS Ph.D., Prof. — Dept. of Biol. Sci., Kent State Univ., KENT, Ohio 44242, U.S.A.

a Study of control of epidermal chitin biosynthesis for the developing cuticle by chemical assays and radiotracers. *Orconectes sanborni, O. obscursus (Decapoda, Crustacea)*


a Turnover of proteins, and regulation of monoamine oxidase activity during central nervous system development. *Mus musculus (Rodentia)*

STOCK, A. Ph.D., Prof. — Dept. of Zool., Fac. of Sci., Univ. of New South Wales, ARNIMDALE, N.S.W. 2351, Australia


a Mechanisms of skeletal muscle differentiation, with special reference to DNA synthesis and cell division. *Gallus domesticus (Aves)*
b Mechanisms of hormone-dependent differentiation in mammary gland tissue in *vitro*, with special reference to DNA synthesis and cell division. *Mus musculus (Rodentia)*
STOCUM, D. L. Ph.D. — Dept. of Zool., Univ. of Illinois, URBANA, Ill. 61801, U.S.A.

a. Morphogenesis during regeneration. *Ambystoma maculatum*, *Triturus viridescens* (*Urodela*).
b. Control of ribonucleic acid synthesis by tissue interactions during regeneration. Same species as a.

STOLL, R. Dr. en Méd., Dr.ès Sci., Prof. — Lab. de Biol. et d’Histol., Univ. de Bordeaux II, Place de la Victoire, 33 BORDEAUX, France

a. Différenciation sexuelle. (*Aves*).
b. Physiologie des glandes endocrines embryonnaires. (*Aves*).
c. Tératologie. (*Aves*).

d. STONE, L. S. Ph.D., Prof. — Anat. Dept., Yale Univ., 333 Cedar St., NEW HAVEN, Conn. 06520, U.S.A.

e. STOUT, V. M. Ph.D. — Dept. of Zool., Univ. of Canterbury, Private Bag, CHRIST-CHURCH, New Zealand


STRAFFORD (MILLER), Mrs. B. F. Ph.D. — School of Anat., Univ. of Melbourne, PARKVILLE 3052, Vict., Australia

a. Developmental anatomy and pathology of the placenta. *Homo sapiens* (*Primates*).
b. Postnatal development of the lung. *Dasyuroides byrnei* (*Marsupialia*).

STRAUSS, F. M.D., Prof. — Dept. of Anat., Div. of Appl. and Topogr. Anat., Univ. of Bern, 26 Buehlsstr., CH-3012, BERN, Switzerland

a. Comparative implantation and placentation. (*Mammalia*).
b. Comparative anatomy of the female reproductive system. (*Mammalia*).
c. Skeletal chondrification in connection to teratogenesis. *Homo sapiens* (*Primates*).
d. Early differentiation of skeletal muscles. *Homo sapiens* (*Primates*).


b. Differentiation and growth of the pigment epithelium of the retina, especially DNA synthesis, cell division, and mechanisms of nuclear polyploidization. Same species as a. (with T. L. MARSHAK).
c. DNA synthesis and cell cycles during neural retina regeneration. *Triturus vulgaris*, *T. cristatus* (*Urodela*) (with V. I. MITASHOV and V. F. SINITSINA).

STRÖM, R. Fil.líc. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden

a. Larval development. (*Brzyozoa*).


STRUDEL, G. Dr.ès Sci. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France

a. Développement et tétarologie de la colonne vertébrale. (*Aves*).
b. Biochimie et ultrastructure du cartilage vertébral. (*Aves*).
c. Role inducteur de la chorée et du tube nerveux; chondrègènèse. (*Aves*).


a. Epithelial-mesenchymal interactions in limb development (histology, histochemistry, electron microscopy, transplantation). *Xenopus laevis*, *Rana temporaria* (*Anura*), *Triturus cristatus*, *T. vulgaris* (*Urodela*).

STURROCK, R. R. M.B., Ch.B. — Dept. of Anat., Univ. of Dundee, DUNDEE DD1 4HN, Scotland, U.K.

a. Measurements of the distance between neuropila nuclei in fibre tracts of the postnatal brain and its relation to the number of myelinated fibres present. *Mus musculus* (*Rodentia*)

STYCZYNSKA-JUREWICZ, Mrs. E. Ph.D. — Dept. of Bioenergetics and Bioproductivity, Nencki Inst. of Exper. Biol., ul. Pasteura 3, WARSZAWA 22, Poland

a. Effect of salinity on fecundity, permeability of egg capsule, and embryonic development. *Priacanthus acuta* (*Gastroctenidae*)

SUBTELNY, S. Ph.D., Prof. — Dept. of Biol., Rice Univ., HOUSTON, Tex 77001, U.S.A.

a. Germ cell migration. *Rana papiens* (*Anura*)
b. Expression of genes controlling enzymes in nuclear transplant hybrid embryos. *Rana papiens* (*Anura*)

SUBUBRO, Miss A. M. M.D. — Inst. de Anat. Gen. y Embriol., Fac. de Medicina, Paraguay 2155, BUENOS AIRES, Argentina

a. Electrophysiology of nervous tissue differentiation in vitro and in vivo. *Gallus domesticus* (*Aves*)

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Such (Razimbaud), Mrs. J. Dr. Biol. anim. — Lab. de Zool. Expér., Univ. de Bordeaux I, Av. des Facultés, 33 TALENCE, France.
a Recherches et expérimentales sur le développement embryonnaire de l'oeil composé. Carausius spec. (Phasmida).

SUCHESTON, Mrs. M. E. Ph.D. — Dept. of Anat., Ohio State Univ., 333 W. 10th Ave., COLUMBUS, Ohio 43210, U.S.A.
a Morphology and histology of the male and female adrenal gland from implantation to sexual maturity: histochemistry and electron microscopy of the cortical transient zone. Meriones unguiculatus (Rodentia).

a The passage and distribution of maternally administered Au-198 in the foetus. Mus musculus (Rodentia).

a Developmental physiology of the fetus. Bos taurus, Capra hircus (Artiodactyla).

a Transfer of fertilized eggs by non-surgical techniques. Bon taurus, Capra hircus (Artiodactyla).

SUGIMOTO, K. — Dept. of Embryol., Carnegie Inst. of Washington, 115 W. University Parkway, BALTIMORE, Md. 21210, U.S.A.

a Differentiation of neoblasts. Dugesia japonica (Turbellaria).
b Effect of x-irradiation on blastema. Same species as a.

a Physiological studies on fertilization and artificial parthenogenesis. Hemicentrotus pulcherrimus, Pseudocentrotus depressus (Echinodermata) (with M. ISHIKAWA).

SULLIVAN, D. T. Ph.D. — Dept. of Biol., Syracuse Univ., 130 College Place, SYRACUSE, N.Y. 13210, U.S.A.
a Biochemical and genetic control of enzyme appearance during differentiation. Drosophila melanogaster (Diptera).
b Biochemistry of pigment synthesis. Same species as a.

a Effects of paralysis and amniotic pressures on the skeletomuscular system of the embryo. Gallus spec. (Aves).
b Teratogenic effects of antimarial drugs. Same species as a.

SUSSEX, I. M. Ph.D. — Dept. of Biol., Yale Univ., NEW HAVEN, Conn. 06520, U.S.A.
a Experimental embryogenesis including uptake and internal transport of nutrients, RNA metabolism during preparation for dormancy and in germination. Phaseolus vulgaris (Papilionaceae).

SUSSMAN, A. S. Ph.D., Prof. — Dept. of Bot., Univ. of Michigan, ANN ARBOR, Mich. 48104, U.S.A.
a Developmental physiology. (Fungi).
b Physiology of spore germination. (Fungi).

SUSSMAN, M. Prof. — Dept. of Biol., Brandeis Univ., WALTHAM, Mass. 02154, U.S.A.

a Genetic and developmental studies. Dictyostelium spec. (Acrasiales) (with M. SUSSMAN).

a Endocrine function of the foetal pancreas; insulin blood levels in the foetus and in the mother. Rattus norvegicus (Rodentia) (with R. L. JACQUOT, J. M. FELIX and Mrs. M. T. SUTTER).

a Endocrine function of the foetal pancreas; insulin blood levels in the foetus and in the mother. Rattus norvegicus (Rodentia) (with R. L. JACQUOT, J. M. FELIX and B. C. J. SUTTER).

b Silk gland development and differentiation, esp. silk fibroin synthesis, fibroin message synthesis, and isolation of the fibroin gene. *Bombyx mori* (Lepidoptera) (with D. D. BROWN and L. P. GAGE)

SVAJGER, A. M.D., D.Sc. — Inst. of Histol. and Embryol., Univ. of Zagreb, P.O.Box 166, Salata 3, 41001 ZAGREB, Yugoslavia

a Early differentiation: transplantation, in vitro culture. *Rattus norvegicus* (Rodentia) (with Mrs. B. LEVAK and N. SKREB, Inst. of Biol.)

b Developmental capacities of tissues of the chorioallantoic membrane. *Gallus domesticus* (Aves) with Mrs. B. LEVAK and N. SKREB

c Chondogenesis in the external ear. *Rattus norvegicus* (Rodentia)

d Temporal sequence of appearance of collagen and elastin fibrils and basement membranes, their pattern organization and relation to morphogenetic events during ontogenesis. *Rattus norvegicus* (with Mrs. L. KOSTOVIĆ)

SWANEPOEL, J. H. D.Sc. — Dept. of Zool., Rand Afrikaans Univ., P.O.Box 524, JOHANNESBURG, S.Africa

a Embryonic development. *Barbus capensis* (Teleostei)


a Effects of gonadal hormones given shortly before or after birth and sex hormones implanted in brain of new-born animals on sex-typical morphology, function, and behaviour. *Mesocricetus auratus. Rattus norvegicus* (Rodentia)

SWANSON, R. F. Ph.D. — Dept. of Biol., Gilmer Hall, Univ. of Virginia, CHARLOTTESVILLE, Va. 22903, U.S.A.

a Control of mitochondrial protein synthesis during early embryonic development. *Xenopus laevis* (Anura)

SWARUP, K. D.Phil. — Dept. of Zool., Univ. of Gorakhpur, GORAKHPUR (U.P.), India

SWIFT, H. H. Prof. — Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 E. 57th St., CHICAGO, Ill. 60637, U.S.A.


a Fine structure and hormonal activity of intact and cultured embryonic adrenal cells of different species


a Developmental histology of some organs of fetus and newborn. *Homo sapiens* (Primates)

b Histological and histochemical features of the stroma of the uterine mucosa (normal changes due to age; malignancy). Same species as a

SZEKELY, C. M.D., Prof. — Dept. of Neuropathol., Res. Stat. of Tirgu-Mureș of the Acad. of the S.S.R., St. Gh.Marinescu 38, TIRGU-MUREȘ, Rumania


SZYBEK (LEWICKA), Mrs. Ch. — Tornblad-Inst. for Comp. Embryol., Biskopsgatan 7, S-223 62 LUND, Sweden

a Post-natal development of ovary: interactions between follicle and oocyte: in vitro culture and maturation of oocytes. *Mus musculus* (Rodentia)

b Fertilization in vitro: sperm capacitation. *Mus musculus* (Rodentia)

TABAN, Ch. H. Drès Sci., Dr.méd., Prof. — Inst d’Anat., Ecole de Méd., Rue de l’Ecole de Médecine 20, 1205 GENEVE, Switzerland

a Action of antisera on regeneration. *Triturus* spec. (Urodela)

tolerance of xenograft compared to homograft and related problems. *Ambystoma mexicanum* and other spp. (Urodela)

c Modification of wound healing in embryos and adults. *Mus musculus* (Rodentia), *Oryctolagus cuniculus* (Lagomorpha)

TADDEI, C. Dr. — Ist. di Istol. ed Embriol., Via Mezzoccanone 8, 80134 NAPOLI, Italy

TAGUCHI, S. Ph.D. — Div. of Biol., Natl. Inst. of Radiol. Sci., 9-1, 4-chome, Anagawa, CHIBA, 280 Japan

a Biochemical studies on effect of radiation on the embryo. *Oryzias latipes* (Teleostei), *Bufo vulgaris* (Anura)

TAHARA, Y. D.Sc. — Dept. of Biol., Osaka Kyôiku Univ., Tennoji-ku, OSAKA, 543 Japan

da Dynamic aspects of interaction between embryo and Myxovirus. *Aves*

d Development of primary and secondary sexual characters. (Echinodermata)


a Effects of ionizing irradiations on tissue differentiation and metabolism in embryos. *Melanoplus diff. differentialis* (Orthoptera)

b Induction and differentiation of striated muscle (electron microscopy). *Helix aspersa* (Pulmonata, Gastropoda), *Melanoplus diff. differentialis* (Orthoptera), Brachydanio rerio, B. albolineatus (Cyprinidae, Teleostei)

c Effect of chronic x-irradiation on the ultrastructure of bone marrow. *Canis familiaris* (Carnivora)
Effect of antibiotics on germ cell differentiation, especially organelle ultrastructure. *Melanoplus diff. differentialis* (Orthoptera)

TAKAGI N. D.Sc. — Chromosome Research Unit, Fac. of Sci., Hokkaido Univ., North 10, West 8, SAPPORO, 060 Japan

a Chromosome studies in pre- and post-implantation embryos. *Mus musculus, Cricetus auratus* (Rodentia)

TAKAHASHI, H. Dr. — Lab. of Freshwater Fish Cult., Hokkaido Univ., 3-1-1 Minato-cho, HAKODATE, Hokkaido, Japan

TAKAHASHI, K. M.Sc. — Lab. of Cell Sci., Inst. of Biophys. and Molecé Biol., Fac. of Sci., Univ. of Kyoto, Sakyo-ku, KYOTO, Japan

a Analysis of the factors affecting cell aggregation and cell contact. *Gallus gallus* (Aves) (with T. S. OKADA and H. FUJISAWA)

TAKANO, K. M.D., Prof. — Dept. of Anat., Kyoto Univ. Yoshida, Konoe-cho, Sakyo-ku, KYOTO, 606 Japan

a Strain differences in susceptibility to teratogenesis. *Mus musculus* (Rodentia)

b ABO incompatibility as a cause of spontaneous abortion. *Homo sapiens* (Primates)

TAKASAKI, Mrs. H. — Dept. of Biol., Osaka Kyōiku Univ., Tennoji-ku, OSAKA, 543 Japan

a Causality in epigenetic formation of organiser. (Amphibia)

b Cytodifferentiation during cleavage. (Amphibia)

c Nucleo-cytoplasmic interaction during early development. (Amphibia)

d Cell interactions in relation to cytodifferentiation. (Amphibia)

TAKATA, K. D.Sc. — Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa-ku, NAGOYA, Japan

TAKAYA, H. D.Sc., Prof. — Dept. of Biol., Fac. of Sci., Kōnan Univ. Okamoto, Motoyamacho, Higashinada-ku, KOBE, Japan


a Phylogenetic and ontogenetic studies on the cerebellum and inferior olive. (Pisces; Amphibia; Reptilia; Aves; Mammalia)

TAKEIJI, M. M.Sc. — Lab. of Cell Sci., Inst. of Biophys. and Molec. Biol., Fac. of Sci. Univ. of Kyoto, Sakyo-ku, KYOTO, Japan

a Contact mechanisms of cell to substrate. *Gallus gallus* (Aves)


TAKEUCHI, H. D.Sc. — Biol. Lab., Osaka Dental Coll., Saka, HIRAKATA, Osaka Pref., Japan

a Analysis of antigens of the testis. *Mus musculus* (Rodentia)

b Epithelial-mesenchymal interaction in *in vitro* differentiation of tooth germs. *Mus musculus* (Rodentia)

TAKEITA, S. N.D., Ph.D., Prof. — 1st Dept. of Surg., School of Med., Tokushima Univ., Kuramoto-cho, TOKUSHIMA-City, 770 Japan

a Functional development of the alimentary and biliary tracts in the earlier stages of the fetus. *Homo sapiens* (Primates)

b Development of the nerve-plexus of fetal intestine and gall-bladder (electron microscopy). *Homo sapiens* (Primates)

TAKEITA, T. M.Agric. — Dept. of Aquatic Biol., Fac. of Fish., Nagasaki Univ., 1-14 Bunkyo machi, NAGASAKI, 852 Japan

a Developmental morphology and physiology (artificial insemination and incubation of eggs in various conditions of temperature and salinity). *Neosalanx reganius* (Clupeidae), *Liza haematocheila*, *Nibea albiflora*, *Argyrosomus argentatus* (Percida, Teleostei)

b Formation of heart and gill in embryos and newly hatched larvae. (*Clupeina*; *Salmonina; Mugilina; Percina; Callionymina; Gobiina, Teleostei)


a Radiation effects on haematopoietic organs (immuno-chemical study). *Mus musculus* (Rodentia)

TAMARELLE (GARAUDY), Mrs. M. — Lab. de Zool. Expér., Univ. de Bordeaux I, Av. des Facultés, 33 TALENCE, France

a Développement embryonnaire. (*Collembola*)

TAMARIN, A. M.S.D., Prof. — Dept. of Oral Biol., School of Dent., Univ. of Washington, SEATTLE, Wash. 98105, U.S.A.

a Differentiation and development of branchial arches. (Rodentia)

TAMBOISE, E. Dr. en Méd., Prof. — Lab. d’Histol.-Embryol.B, Fac. de Méd., 45 rue des Sts.Pères, 75 PARIS Vle, France

TANABE, K. B.S. — Lab. of Embryol., Fac. of Sci., Osaka City Univ., 459 Sugimoto-cho, Sumiyoshi-ku, OSAKA, Japan

a Germ cell formation. *Xenopus laevis* (Anura)

TANAKA, K. M.A. — Inst. of Zool., Tokyo Kyōiku Univ., Otsuka 3-29-1, Bunkyo-ku, TOKYO, Japan
a Recognition of specificity in compound forms. Botryllus primigenus, Botrylloides violaceum (Asciidiacea) (with H. WATANABE)
b Differentiation of endostyle. Botryllus primigenus, Halocynthia roretzi (Asciidiacea)
TANAKA, O. M.D. — Dept. of Anat., Kyoto Univ., Konoe-cho, Yoshida, Sakyo-ku, KYOTO 606, Japan
a Epidemiology of skeletal anomalies in embryos and foetuses. Homo sapiens (Primates)
b Tests on drug teratogenicity. Macaca mulatta, M. fuscata (Primates)
TANIMURA, T. M.D. — Dept. of Anat., Kyoto Univ., Konoe-cho, Yoshida, Sakyo-ku, KYOTO 606, Japan
a Epidemiology and pathogenesis of malformations in embryos. Homo sapiens (Primates)
b Teratogenicity test of chemicals. Macaca fuscata, M. mulatta (Primates)
TARDENT, P. Dr.phil., Prof. — Zool.-Vergl. Anat. Inst., Univ. Zürich, Künstlergasse 16, CH-8006 ZÜRICH, Switzerland
a The mechanism of neural induction, especially the role of ecto- and mesodermal components and the nature of secondary nervous systems induced by organiser transplants (histology, histochemistry, electron microscopy, time lapse cinematography). Xenopus laevis (Anura)
b Epithelial-mesenchymal interactions in limb development (histology, histochemistry, electron microscopy, transplantation). Xenopus laevis (Anura)
TARKOWSKI, A. K. Ph.D., D.Sc. — Dept. of Embryol., Zool. Inst., Univ. of Warsaw, Krakowskie Przedmiescie 26/28, WARSZAWA 64, Poland
a Mechanisms of cell differentiation in early development. Mus musculus (Rodentia)
b Experimental chimerism. Mus musculus (Rodentia)
c Sexual differentiation and gametogenesis. Mus musculus (Rodentia)
TARTAR, V. Ph.D., Prof. — Dept. of Zool., Univ. of Washington Field Lab., R.1 Box 250, NAHCOTTA, Wash. 98637, U.S.A.
a Production of decorticated cells by micrurgical or chemical methods. Stentor coeruleus (Ciliata)
b Cytokinesis studied by micrurgy. Stentor coeruleus (Ciliata)
c Effects of single heat shocks. Stentor coeruleus (Ciliata)
d Mouthparts induction in the oral primordium. Stentor coeruleus (Ciliata)
e Bleaching and pigment regeneration. Stentor coeruleus (Ciliata)
f Size inheritance and regulation of number of body kinetics. Stentor coeruleus (Ciliata)
a Role of hormones, nerves, and RNA synthesis in limb regeneration. Notophthalmus viridescens (Urodela)
b Thyroid hormones and development. Notophthalmus viridescens (Urodela)
a Thyroid hormone-induced metamorphosis. Rana catesbeiana, Xenopus laevis (Anura)
b Effect of hormones on organ cultures. Rana spec., Xenopus laevis (Anura)
c Early metamorphic competence of larvae: biochemical analysis of the acquisition of response of very early stages of larval cells (Nieuwkoop-Faber stages 38-41) to thyroid hormones that resembles spontaneous metamorphic response at later stages. Xenopus laevis (Anura)
d Prevention by ovine prolactin of developmental changes induced by thyroid hormones studied at the level of nucleic acid synthesis in target tissues (liver, tail, skin). Rana catesbeiana (Anura), Diemictylus viridescens (Urodela)
e Induction of yolk proteins by oestrogen in male liver in vivo and in vitro. Same species as c
f Regulation of translation of messengers for egg yolk proteins. Same species as c
TAVERNE, M. — Zool. Lab., Univ. of Amsterdam, Plantage Doklaan 44, AMSTERDAM C, Netherlands
a Umbilical sphincter. Oryctolagus cuniculus (Lagomorpha)
b Placenta (Mammalia)
TAYLOR, A. C. Ph.D., Prof. — Dept. of Anat., Univ. of Texas Dental Branch, P.O.Box 20068, HOUSTON, Tex. 77025, U.S.A.
a Effects of macrophage migration inhibitors (MIF) on morphogenetic cell movements during early development. Gallus domesticus (Aves)
b Development of the attachment of epithelial cells to the tooth. Rattus spec. (Rodentia), Calithrix jacchus (Primates)
TAYLOR, Miss E. L. Ph.D. — Dept. of Histol. and Embryol., School of Dental Med., Univ. of Pennsylvania, 40th and Spruce Sts., PHILADELPHIA, Pa. 19104, U.S.A.
a Maintenance of differentiation in cultured heart cells. Gallus domesticus (Aves)
TCHELEBI (PAPILLON), Mrs. M. — Lab. d'Evol. des Etres Organisés, Fac. des Sci., 105 Bd. Raspail, 75 PARIS Vle, France
TEICHMAN, R. J. Ph.D. — Dept. of Anat., Univ. of Hawaii, 1960 East-West Rd., HONO-
LULU, Hawaii 96822, U.S.A.
a Sperm maturation, capacitatiion, egg-sperm interaction and fertlization. Herpetes au-
ropunctatus (Carnivora). (Rodentia; Lagomorpha)

TEITELMAN de PINCZUK, Mrs. G. N. Ph.D. — Inst. de Anat. Gen. y Embriol., Fac. de
Medicina, Paraguay 2155, BUENOS AIRES, Argentina
a Biochemical differentiation of nervous tissue in vitro and in vivo, especially
synergism of neurotransmitters. Gallus domesticus (Aves)

TEMIN, H. M. Ph.D., Prof. — McArdle Lab. for Canc. Res., Univ. of Wisconsin, 450
N.Randall Ave., MADISON, Wis. 53706, U.S.A.

TEMPEL, K. Dr.med.vet. — Inst. für Pharmakol., Toxicol. und Pharmazie der Tierärztl.
Fak., Univ. München, Veterinärstr. 13, 8 MÜNCHEN 22, W.Germany
a Investigations on functions of DNAxes in embryonic tissues. Gallus domesticus (Aves)
b Effect of ionizing radiations and biological alkylating agents on embryonic DNA and
DNAxes. Gallus domesticus (Aves)
c Influences of nuclease inhibitors (polyanions) on nucleic acid metabolism in the embryo.
Gallus domesticus (Aves)
d Phosphatases and lysosomes in embryonic tissues; behaviour during development and
under the influence of ionizing radiation and biological alkylating agents. Gallus domesticus
(Aves)

TEMPLE, D. — Lab d’Histol., Fac. de Méd., 2 rue Ecole de Médecine, 34 MONTPELLIER,
France

TENCER, Miss R. Dr.en Sci. — Lab. de Cytol. et Embryol. Moléc., Univ. libre de Bruxelles,
67, rue des Chevaux, 1640 RHODE-ST-GENESE, Belgium
a Metabolism during development. Paracentrotus spec., Arbacia spec. (Echinoidea), Ambysto-
ma spec., Pleurodeles spec. (Urodela), Bufo spec. Rana spec. (Anura)

TEPLITZ, Miss N. A. Cand.biol.sci. — Inst. of Developm. Biol., Acad. of Sci. of the
U.S.S.R., Vavilov St. 26, MOSCOW 117133, U.S.S.R.
a Restoration of regeneration capacity of limbs after x-irradiation (biochemistry). Ambysto-
ma mexicanum (Urodela) (with L. V. POLEZHAEV and S. J. TUCHKOVA)

TERAYAMA, H. Ph.D., Prof. — Zool. Inst., Univ. of Tokyo, Hongo 7-3, Bunkyo-ku,
TOKYO, 113 Japan
a Composition and biochemical activities of germ cell nuclei and early changes after
fertilization. Pseudocentrotus depressus (Echinoidea)
b Mechanism of homeostatic growth regulation in liver regeneration. Rattus norvegicus
(Rodentia)
c Ciliary regeneration and cell association in embryos. Pseudocentrotus depressus, Anthocida-
dris crassissipina (Echinoidea)

TERMAN, S. A. Ph.D. — Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA-City,
Iowa 52240, U.S.A.
a Control of gene activity, synthesis of nuclear proteins during early development. Arbacia
punctulata, Strongylocentrotus purpuratus (Echinoidea)
b Control of protein synthesis of the translation level; polyribosome-forming factors. Artemia
salina (Anostraca, Crustacea), Arbacia punctulata (Echinoidea)

TERNEBY, Miss U. K. Fil.llic. — Inst. of Zool., Univ. of Gothenburg, Fack, S-400 33
GOTHENBURG 33, Sweden
a Development of the hypothalamo-hypophyial connections. Oryctolagus cuniculus (Lago-
 morpha), Rattus spec. (Rodentia)
b Development of the hypophyial drainage. Oryctolagus cuniculus (Lagomorpha)

TESTA-BAPPENHEIM, I. Dr.med.A.O., Prof. — Ist. di Antropol. Criminol. dell’Univ.,
Corso G.Galleli 22, 10126 TORINO, Italy
a Experimental embryology. Triton alpestris, T. taeniatus (Urodela)
b Developmental genetics and pathology. Homo sapiens (Primates)

TEUCHERT, Mrs. G. Dr.ren.at. — Inst. für Flugmedizin der DFVLR, Kölner Str. 70, 532
BAD GODESBERG, W.Germany
a Embryology. (Bdelloidea, Rotatoria), (Macrocladidea, Gastrotricha)
b The influence of simulated weightlessness by rotation on the early development (polariza-
tion). Ascaris (Nematoda), (Anura) (with W. BRIEGLEB)
c The influence of simulated weightlessness (by submersion) on metamorphosis. (Anura)
(with W. BRIEGLEB)

TEULADE, P. Dr.es Sci. — Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11
Novembre 1918, 69 VILLEURBANNE, France
a Action des rayonnements sur le développement embryonnaire. Bombyx mori (Lepidoptera)

THEILER, K. Dr., Prof. — Anat. Inst. der Univ., Gloriadr. 19, 8006 ZÜRICH, Switzerland
a Developmental genetics of the vertebral column. Mus musculus (Rodentia)

THESSING, Miss C. W. M.D. — Lab. for Cell Biol. and Histol., State Univ., Rijnsburger-
weg 10, LEIDEN, Netherlands
a Development and function of ultimobranchial body in organ culture. Gallus domesticus
(Aves)
b Hormonal regulation of calcium metabolism and bone formation in embryos. Same species as a

c Function of chorionic-allantoic membrane. Same species as a

THIEBOLD, J. J. Dr.ès Sci., Prof. — Inst. de Zool, et d’Embryol. Exp., Univ. de Strasbourg, 12 rue de l’Université, 67 STRASBOURG, France

THIERY, M. M.D., Ph.D., Prof. — Dept. of Obstet. and Gynecol., Academic Hosp., Univ. of Gent, De Pintelaan, 9000 GENT, Belgium

a Intra-uterine hypoxia (determination of blood lactate/pyruvate balance and acid/base balance). Homo sapiens (Primates)

b Longitudinal study of twins and correlation with genotype as determined by placental membrane morphology, placental zymograms, and extensive bloodtyping. Same species as a

c Histochemistry of placenta. Same species as a

d Enzyme histochemistry of female genital tract. (Mammalia)

THOMAS, C. — Lab. de Cytol. et Embryol. Moléc., Univ. libre de Bruxelles, 67, rue des Chevaux, 1640 RHODE-ST-GENESE, Belgium

a Biochemistry and electron microscopy of RNA in early stages of oogenesis. Xenopus laevis (Anura)


a The development of the lympho-myeloid complex. Rattus spec., Mus musculus, Cavia cobaya (Rodentia), Macaca mulatta, Homo sapiens (Primates)

b The transplantation of foetal lympho-myeloid cells. Mus musculus (Rodentia)

c The effects of irradiation on the developing lympho-myeloid tissues. Mus musculus (Rodentia)

THOMAS, Miss N. B.A. — Anat. Dept., Med. School, University Walk, BRISTOL BS8 1TD, England

a RNA in induced and uninduced ectoderm of late gastrulae (acylamide gel electrophoresis). Xenopus laevis (Anura)

THOMAS, R. J. Ph.D. — Dept. of Anat., Creighton Univ., 657 North 27th St., OMAHA, Neb. 68131, U.S.A.

a Epiboly and cell differentiation (transmission and scanning electron microscopy, light microscopy). Brachydanyo rerio (Teleostei)

THOMMERS, R. C. Ph.D., Prof. — Dept. of Biol. Sci., De Paul Univ., 1036 W. Belden Ave., CHICAGO, Ill. 60614, U.S.A.

a Hormonal control of yolk sac membrane metabolism. Gallus domesticus (Aves)


a The inhibitory effects of tissue extracts on homologous organ development, particularly the effect of whole eye extracts and extracts of eye components on the development of the lens in vitro. Gallus domesticus (Aves)


a Fertilization in vitro and in vivo. (Mammalia)

THÖRIG, G. E. W. Drs. — Genet. Inst., Univ. of Utrecht, Opaalweg 20, UTRECHT, Netherlands

a Isozymes and morphological variations. Drosophila melanogaster (Diptera)


a Influence on regeneration of ingrowth of brachial nerves into aneurogenic fore limbs grafted orthotopically to normal hosts. Ambystoma maculatum (Urodela)

b Recuperation of regeneration in nerve-dependent, formerly aneurogenic limbs after prolonged denervation. Same species as a

c Endocrine influence on regeneration. Ambystoma spec., Notophthalmus viridescens (Urodela), Xenopus spec. (Anura)


a Onset of melanophore-stimulating activity by the pars distalis and pars intermedia. Ambystoma tigrinum, Hyla regilla (Amphibia)

b Development of hypothalamic and pituitary control of the adrenal cortex: (expiration, transplantation and histochemistry). Ambystoma tigrinum (Urodela), Xenopus laevis, Hyla regilla (Anura)


a Kinetics of spermatogenesis, especially with regard to the establishment of the wave pattern of the seminiferous epithelium. Mustela vison (Carnivora)


TIBBITS, F. D. Ph.D., Prof. — Dept. of Biol., Univ. of Nevada, RENO, Nev. 89507, U.S.A.

TIEDEMANN, H. Dr.med., Dr.rer.nat., Prof. — Inst. für Biochem. und Molek. Biol., Fachbereich I (Vorklinik), Freie Univ. Berlin, Arnimallee 22, 1 BERLIN 33, W.Germany

- Morphogenetic factors, characterization and mechanism of action. (Amphibia) (with Mrs. H. TIEDEMANN)
- RNA and protein metabolism in development. (Amphibia), Gallus domesticus (Aves)

TIEDEMANN (WAECHTER), Mrs. H. Dr.rer.nat. — Inst. für Biochem. und Molek. Biol., Fachbereich I (Vorklinik), Freie Univ. Berlin, Arnimallee 22, 1 BERLIN 33, W.Germany

- Morphogenetic factors, characterization and mechanism of action. (Amphibia) (with H. TIEDEMANN)

TIMASKHEVICH, Mrs. T. B. Cand.med.sci. — Inst. of Human Morphol., Acad. of Med. Sci. of the U.S.S.R., Balticyskaya St. 8, MOSCOW 125315, U.S.S.R.

- Regeneration and cell division in the stomach. Rattus norvegicus, Mus musculus (Rodentia)
- Quantitative evaluation of restoration of resected stomach. Same species as a

TIMMERMANS, Miss L. P. M. Ph.D. — Zool. Lab., State Univ. of Utrecht, Janskerkhof 3, UTRECHT, Netherlands

- Cytochemistry and physiology of shell secretion. Lymnaea stagnalis, Pomacea bridgeli diffusa (Gastropoda), Anodonta spec. (Lamellibranchia)
- Germinal localization in eggs. Dentalium spec. (Scaphopoda)

TINONZI MASSARI, Mrs. S. Ph.D. — Dept. of Histol. and Embryol., Univ. of Pavia, Piazza Botta 10, 27100 PAVIA, Italy

- The differentiation of skin. Salmo irideus, S. fario (Teleostei)


- Role of tissue antigens in eye development. Gallus domesticus (Aves)

TOBIN, C. E. Ph.D., Prof. — Dept. of Human Biol., Univ. of Colorado Dent. Sch., 4200 E. 9th Ave., DENVER, Colo. 80220, U.S.A.

- A blood supply and mineralization of fetal teeth. Homo sapiens (Primates)

TOERIEN, M. J. Ph.D., D.Sc., Prof. — Dept. of Anat., Univ. of the O.F.S., P.O.Box 339, BLOEMFONTEIN, S.Africa

- Morphological and experimental studies on cranial morphogenesis (by means of extirpation, heteroplastic and orthotopic transplants, the contributions and interrelationship of the visceral, axial, and capsular skeleton are studied). Ambystoma spec., Triturus spec. (Urodela), Xenopus spec. (Anura), Chelydra serpentina (Chelonida), Anas boschas, Spheniscus demersus, Gallus domesticus (Aves), Oryctolagus cuniculus (Lagomorpha)
- Microsurgical induction of malformations of the central nervous system, sense organs, and skull. Gallus domesticus (Aves)

TOIT, C. A. du Ph.D., Prof. — Zool. Inst., Fac. of Sci., Univ. of Stellenbosch, STELLENBOSCH, S.Africa

- Cell interaction. Same species as a

TOIVONEN, S. I. Ph.D., M.D., Prof. — Lab. of Exper. Embryol., Dept. of Zool., Univ. of HELSINKI, Arkadiankatu 7, HELSINKI 10, Finland

- The specific action of heterogeneous inductors. Triturus spec. (Urodela)
- The mechanism of primary induction. Same species as a (with L. O. SAXEN, Dept. of Pathol.)

TOKIN, B. P. Dr.Biol.Sc., Prof. — Dept. of Embryol., Leningrad State Univ., Mendeleevsky St. 5, LENINGRAD V-164, U.S.S.R.

- Regeneration, asexual reproduction, and somatic embryogenesis. Dugesia tigrina (Turbellaria)

- Morphogenetic processes in starving animals. Dugesia tigrina (Turbellaria)

TOKUNAGA, Miss C. Ph.D. — Dept. of Zool., Univ. of California, BERKELEY, Calif. 94720, U.S.A.

TOKUYASU, K. Ph.D. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109, LA Jolla, Calif. 92037, U.S.A.

- Spermatogenesis in relation to genetics. Drosophila melanogaster (Diptera)
- Meiosis: structure of synaptomemal complex. Lilium longiflorum (Liliaceae)


- Origin and function in development of inclusions in eggs. Ambystoma mexicanum (Urodela), Xenopus laevis (Anura)
- Effects of mutant genes on the development of behavior. Ambystoma mexicanum (Urodela)
- Independently mutable sensitivities to thyroxine of metamorphic processes. Same species as b

TONDURY, G. Dr. — Anat. Inst. der Univ., Gloriastr. 19, 8006 ZÜRICH, Switzerland

- Action of different viruses on embryos. pathogenesis, and way of infection. (Vertebrata)
- Development of the lymphatic system. (Vertebrata)

TONERY, M. I. Fil.kand. — Wenner-Gren Inst., Norrtullsgatan 16 S-113 45 STOCKHOLM, Sweden

- Metabolism of tryptophane and 5-hydroxytryptamine (serotonin). (Echinoidea)
- Embryological development of collagen. (Echinoidea)
a Tooth development and eruption
b Effect of severe undernutrition on the development and growth of teeth and jaws (including rehabilitation). Sus scrofa (Artiodactyla)
c Protein calory deficiency and rehabilitation relative to the development and growth of teeth and jaws. Sus scrofa (Artiodactyla)

TONNEYCK (MÜLLER), Mrs. I. — Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands
a Experimental studies on the morphogenesis of the skull. Gallus domesticus (Aves)

TÖRTÉN, L. Dr. — Dept. of Biochem., Nippon Med. School, 1-1-5 Sendagi, Bunkyo-ku, TOKYO Japan
a Genetic control of hemoglobin switch during metamorphosis. Rana catesbeiana (Anura) (with R. SHUKUYA)

TÖRÖ, I. M.D., Prof. — Inst. of Histol. and Embryol., Med. Univ., Tüzoltó u. 58, BUDAPEST IX, Hungary
a Experimental and physiological embryology; teratogenesis. Pleurodeles waltlilii, Ambystoma mexicanum (Urodela), Gallus domesticus (Aves), Rattus rattus (Rodentia)

a Developmental pathology and teratogenesis (electron microscopy). Rattus rattus (Rodentia)
b Placental ultrastructure. Same species as a

a Regeneration and somatic embryogenesis with special reference to the morphogenetic role of the nervous system. Dugesia (= Euplanaria) lugubris (Turbellaria)
b Nucleo-histone changes during morphogenetic processes of regeneration. Same species as a
c Nucleo-histone changes during embryonic development and regeneration. Triturus cristatus (Urodela), Xenopus laevis (Anura)

TORRÉS (WINTENBERGER), Mrs. S. Dr.és Sci.Nat. — Station Centr. de Physiol. Anim., Inst. Natl. de la Recherche Agronom., C.N.R.S., 78 JOUY-en-JOSAS, France
a La mortalité embryonnaire précocé; évolution des oeufs aux premiers stades, dans les conditions normales et avec variation de l’équilibre endocrinien de la mère. Ovis aries (Artiodactyla)
b La mortalité embryonnaire. Sus scrofa (Artiodactyla)
c Fertilization and development of superovulated eggs. Ovis aries (Artiodactyla)
d Activité respiratoire des oeufs en liaison avec la mortalité embryonnaire. Ovis aries (Artiodactyla)
e L’activité respiratoire des blastocystes âgés de 5 jours. Oryctolagus cuniculus (Lagomorpha)

TOTO, P. D. D.D.S., Prof. — Dept. of Oral Pathol., Sch. of Dent., Loyola Univ., 1757 W.Harrison St., CHICAGO, Ill. 60612, U.S.A.

a Development of fetal lung and changes at birth (experimental). Rattus rattus (Rodentia), Ovis aries (Artiodactyla)
b Structure and functions of fetal larynx (experimental). Rattus rattus (Rodentia), Ovis aries (Artiodactyla)

TRAPMUSCH, H. A. L. Ph.D. — Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands
a Mechanics of the morphogenetic field during regeneration. Ambystoma mexicanum (Urodela)
b Compatibility of xenoplastic blastemata, used for the study of regeneration. (Anura, Urodela)
c Regeneration from extremities, situated in heterotopic positions. Xenopus laevis (Anura)
d Analyses of fracture-repair. Same species as a (with H. J. PRINS)
e Embryonic constitution of the dermis and its behaviour during regeneration. Same species as a
f Dedifferentiation and differentiation in blastemata. Dugesia spp. (Turbellaria)

TRASLER, Mrs. D. G. Ph.D. — Dept. of Biol., McGill Univ., MONTREAL 110, Que., Canada
a Mode of inheritance of, and elements of face shape that predispose an embryo to cleft lip. Mus musculus (Rodentia)

TRAURIG, H. H. Dr., Prof. — Dept. of Anat., Med. Center, Univ. of Kentucky, LEXINGTON, Ky. 40506, U.S.A.
a Analysis of the physico-chemical properties of DNA in differentiating cells. Triturus viridescens (Urodela), Gallus domesticus (Aves), Mus musculus, Rattus rattus (Rodentia), Homo sapiens (Primates) (with S. P. MODAK)
b The postnatal development of activity of several acid hydrolase enzymes in the brain. *Rattus norvegicus* (Rodentia) (with J. N. ALLEN)


a Development of the fibrous architecture of the orthogonal collagen lamellae in the corneal stroma. *Gallus domesticus* (Aves)

b Characterization of the molecular species of collagen in developing connective tissues. *Gallus domesticus* (Aves)

c Synthesis and degradation of hyaluronic acid in the developing cornea. *Gallus domesticus* (Aves)


a Genetic control of hair differentiation and enzyme differentiation. *Mus musculus* (Rodentia)

TRINKAUS, J. P. Ph.D., Prof. — Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, Conn. 06520, U.S.A.

a Cell contacts, cell movements, and mechanisms of morphogenetic movements with techniques of cell culture, cinemicrography, electron microscopy, cell dissociation and reaggregation, electrophysiology and chemistry of the cell surface, and microsurgery. *Fundulus heteroclitus* (Teleostei), *Xenopus laevis* (Anura), *Gallus domesticus* (Aves)

b Mechanism of epiboly (ultrastructure, cytochemistry, time-lapse cinematography). *Fundulus heteroclitus* (Teleostei) (with T. BETCHAKU)

TRIONE, E. J. Dr., Prof. — Dept. of Bot. and Plant Pathol., Oregon State Univ., CORVALLIS, Ore. 97331, U.S.A.

a Biochemical mechanisms of flowering. (Angiospermae)

b Biochemical mechanism of light-induced sporulation. (Fungi)

TRIPPLETT, E. L. Ph.D., Prof. — Dept. of Biol. Sci., Univ. of California, SANTA BARBARA, Calif. 93106, U.S.A.

a Tyrosine oxidase synthesis during development. *Rana pipiens* (Anura)

TRÖSCH, W. — Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, W.Germany

a Measurements of inorganic ions and their fluxes in cell nuclei during development. *Chironomus thummi* (Diptera)


b Antigenic studies of lens regeneration. *Xenopus laevis* (Anura) (with J. C. CAMPBELL)


a The analysis of skeletal variation in animals selected for large or small size and controls. *Mus musculus* (Rodentia)

TSAFIRI, A. M.Sc. — Dept. of Biodynamics, Weizmann Inst. of Sci., P.O.B. 26, REHOVOT, Israel

a Nucleic acid metabolism of ovum. *Rattus norvegicus* (Rodentia)

b Maturation and hormonal requirements of follicle enclosed ova in vitro. *Rattus norvegicus* (Rodentia)

TSUKAHARA, J. M.Sc. — Marine Biol. Station, Nagoya Univ., Sugashima, TOBA-shi, Mie-ken, 517 Japan

a Electron microscopy and biochemistry of oogenesis. *Hemicentrotus pulcherimus*, *Mespilina globulus* (Echinoidae)


a Restoration of regeneration capacity of limbs after x-irradiation. *Ambystoma mexicanum* (Urodela) (with L. V. POLEZHAEV and N. A. TEPLITZ)

TUCHMANN-DUPLESSIS, H. Prof. — Lab. d’Histol.-Embryol. A, Fac. de Méd., 45 rue des Sts.Pères, 75 PARIS Vl.e, France

a Anencéphalie. *Homo sapiens* (Primates)

b Tétratogénèse par sulfamides hypoglycémiants, antimitabolites. *Rattus spec.* (Rodentia) (avec L. MERCIER)

c Influence des hormones sur le développement foetal. *Rattus spec.* (Rodentia)

d Influence des alcaloïdes du Rauwolfia, de la résérpine et de la désépirdine, sur le développement. Same species as b (avec L. MERCIER)

e Influence des neurolepïques sur la fertilité et le développement foetal. *Rattus spec.*, *Mus spec.* (Rodentia), *Oryctolagus cuniculus* (Lagomorpha)

f Diabète expérimental et grossesse. (Mammalia)

g Influence des antimitotiques sur la gestation. (Rodentia) (avec L. MERCIER)

TUCKER, J. S. Ph.D., Prof. — Pacific Marine Station, Univ. of the Pacific, DILLON BEACH, Calif. 94929, U.S.A.

a Gametogenesis and spawning by gross observation, histological and histochemical methods. *Chone mollis*, *Cirriformia spirabrancha*, *Hemipodus borealis*, *Nephtys caecoides*, *Axiothella...
rubrocincta (Polychaeta), Phoronopsis viridis (Phoronida), Macoma secta, M. nasuta (Lamellibranchia)

TUFT, P. H. Ph.D. — Dept. of Zool., Univ. of Edinburgh, West Mains Rd., EDINBURGH EH9 3JN, Scotland, U.K.

TU MANISHVILI, G. D. Dr., Prof. — Dept. of Biophys., Inst. of Exper. Morphol., Acad. of Sci. of the Georgian SSR, 51 Kamo St., TBILISI 2, U.S.S.R.

a Role of chemical intercellular interactions in regulation of the rate of cell multiplication and intracellular synthesis studied in cell cultures and in vivo. Gallus domesticus (Aves), Rattus norvegicus, Mus musculus (Rodentia)

b Participation of intracellular substances in gastrulation. Misgurnus fossilis (Teleostei)

c Participation of nuclear and cytoplasmic substances in control of state of DNA in chromatin. Gallus domesticus (Aves), Rattus norvegicus (Rodentia)

TUBE, T. C. Dr., Prof. — Inst. of Zool., Acad. Sinica, PEKING, Haiti, People's Republ. of China

TUPPER, J. T. Ph.D. — Dept. of Biol., Syracuse Univ., College Place 130, SYRACUSE, N.Y. 13210, U.S.A.

a The role of intercellular communication and membrane permeability in early embryonic differentiation


cytology of neonatal liver; differentiation of intercellular junctions, characters of microbodies; histochemical differentiation. Mus musculus (Rodentia) (with R. POURHADI and P. MALET)


a In vitro differentiation of imaginal discis. Drosophila melanogaster (Diptera)

TWEDDELL, K. S. Ph.D., Prof. — Dept. of Biol., Univ. of Notre Dame, NOTRE DAME, Ind. 46556, U.S.A.

a Oocyte development and incorporation of radioactive precursors. Pectinaria gouldii (Polychaeta)

b Cell source and movement during hydranth regeneration. Tubularia crocea (Hydrozoa)

c Renal tumor induction by subcellular fractions in embryonic and larval stages. Rana pipiens (Anura)

TYLER, C. Ph.D., D.Sc., Prof. — Dept. of Physiol. & Biochem., The Univ., Whiteknights, READING RG6 2AJ, England

a Structure and properties of the egg shell. (Aves)

TYNDALE-BISCOE, C. H. Ph.D. — Dept. of Zool., School of Gen. Studies, Australian Nat. Univ., P.O.Box 4, CANBERRA, A.C.T. 2600, Australia

a Early development, including fine structure. Antechinus stuarti (Marsupialia)

b Fine structure of the blastocyst. Macropus eugeni (Marsupialia), Orctogagus cuniculus (Lagomorpha)

c Factors involved in resumption of development by blastocysts in diapause. Macropus eugeni (Marsupialia)

TYSZKIEWICZ, Mrs. K. M.Sc. — Zool. Dept., Jagiellonian Univ., ul.Krupnicza 50, KRAKÓW, Poland

a Embryogenesis of nervous system. Tetrodontophora bianlanesis (CollemboIa)

UBBELS, Miss G. A. Ph.D. — Hubrechtt Lab. (Intern. Embryol. Inst.), Uppsalalaan 1, Universiteitcentrum "De Uithof", UTRECHT, Netherlands

cytological heterogeneity of the egg, cleavage stages and early embryo. Ambystoma mexicanum, Xenopus laevis (Amphibia)

cytology of the origin of dorso-ventral polarity of the egg. Same species as a (with P. D. NIEUWKOOP)

UCHIDA, T. A. Dr.Agr. — Zool. Lab., Fac. of Agric., Kyushu Univ., FUKUOKA, Japan

a Reproduction and embryology. Pipistrellus abramus, Miniopterus schreibersi (Chiroptera)

UDEMURA, I. — Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2-1-1 chome, Fukazawa-machi, Setagaya-ku, TOKYO, 158 Japan

ea Electron microscopy of the development of primary mesenchyme cells. Hemicentrotus pulcherrimus (Echinidea)

ULBERG, L. C. Ph.D., Prof. — Dept. of Anim. Sci., North Carolina State Univ., P.O.Box 5127, RALEIGH, N.C. 27607, U.S.A.

ULLMANN, Miss S. L. Ph.D. — Dept. of Zool. The Univ., GLASGOW W.2, Scotland, U.K.

ULRICH, H. Dr.phil., Prof. — Dept. of Zool., Swiss Fed. Inst. of Technol., Universitätstr. 2, 8006 ZÜRICH, Switzerland

a Action of x-rays on eggs and embryos. Drosophila melanogaster (Diptera)

b Morphology, physiology, and cytology of paedoogenetic-bisexual reproduction cycle. Heteropeza pygmaea (= Oligarches paradoxus), Miastor metraloas (Cecidomyiidae, Diptera)

c Time-lapse cinemicrography of embryonic development and chromosomes elimination in early cleavage. Heteropeza pygmaea (Cecidomyiidae, Diptera)

a Fine structure of gametogenesis, fertilization and early development. *Bryopsis hypnoides* (Chlorophyceae)

URBANI, E. Prof. — Ist. di Istol. ed Embriol., Univ. di Roma, Città Universitaria, 00185 ROMA, Italy


a Biochemistry of differentiation. *Drosophila melanogaster* (Diptera), *Mus musculus* (Rodentia)

b Organization of imaginal discs. *Drosophila melanogaster* (Diptera)


a Collagenogenesis in the umbilical cord. *Homo sapiens* (Primates)

VACEK, Z. MUDr., D.Sc., Prof. — Inst. of Embryol., Charles Univ., Albertov 4, PRAGUE 2, Czechoslovakia

electron microscopy and histochemistry of the placenta (comparative studies on the sub-microscopic structure, enzyme histochemistry and transport mechanism). *Homo sapiens* (Primates), *Rodentia; Carnivora; Insectivora; Chiroptera*

b Role of primitive streak and tail region in early differentiation of the body (submicroscopic and cytochemical studies in normal and experimental conditions). *Rana esculenta* (Anura), *Gallus domesticus* (Aves), *Mus rattus* (Rodentia)


a Control of enzyme synthesis during larval development, differentiation of the digestive tract. *Dendraster excentricus, Strongylocentrotus purpuratus* (Echinoidea)

b Biochemistry of fertilization with emphasis on the role of beta-1,3-glucanohydrolase and other enzymes. (Echinoidea)

c Mechanisms involved in the physical interactions of blastomeres during cleavage. (Echinoidea)

VAHS, W. Dr.phil., Prof. — Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, W. Germany

a Quantitative cytochemistry of nucleic acids and proteins during induction and differentiation. (Teleostei, Urodela; Aves)

b Phase specific gene activities in the eyecup-lens-system of the developing embryo, as revealed by quantitative cytochemical DNA determinations. *Salmo irideus* (Teleostei), (Urodela; Aves)

c Ultrastructure of embryonic cells undergoing induction and differentiation. (Urodela)

VAKAET, L. C. A. M.D., Prof. — Lab. of Anat. and Embryol., State Univ. Center, Groenenborgerlaan 171, 2020 ANTWERPEN, Belgium

a Early development. *Gallus domesticus, Coturnix japonica* (Aves)

b Fetal and neonatal endocrinology. *Mus musculus albinus* (Rodentia)

c In v i t r o culture of blastoderms. normal and after experimental interventions; histochemistry: enzymes and mucopolysaccharides. *Coturnix japonica, Gallus domesticus* (Aves)

d Autoradiography of oogenesis. *Mus musculus* (Rodentia)

VALDEZ de MORENO, Mrs. C. L. — Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMAN, Argentina

a Anaerobiosis in oocytes. *Bajo arenarum* (Anura)

VANABLE, J. W., Jr. Ph.D. — Dept. of Biol. Sci., Purdue Univ., LAFAYETTE, Ind. 47907, U.S.A.

a The possibility of selectivity in neuromuscular associations: 1. extrinsic ocular muscles. * Xenopus laevis* (Anura); 2. muscles of coxa and leg. *Periplaneta americana* (Blattariae)

VAN ALTERN, P. J. Ph.D., Prof. — Dept. of Anat., Coll. of Med., Univ. of Illinois, 1853 W.Polk St., P.O.Box 6998, CHICAGO, Ill. 60680, U.S.A.

a Ontogeny of the immunological mechanism. *Gallus domesticus* (Aves)

b Development of lymphocyte competence to respond to mitogens in v i t r o. *Gallus domesticus* (Aves), *Rattus norvegicus* (Rodentia)

c Development of antigenic components in the brain. *Mesocricetus auratus* (Rodentia)

d Isotope studies of blood cell formation, especially lymphocytopoiesis. *Gallus domesticus* (Aves)

VANDEBROEK, G. D.Sc., Prof. — Lab. d’Embryol., Inst. de Zool., Univ. de Louvain, 59 rue de Namur, LOUVAIN, Belgium

a Ontogeny of the immunological mechanism. *Gallus domesticus* (Aves)

VAN DETH, J. H. M. G. M.D. — Dept. of Anat. and Histol., Univ. of Adelaide, ADELAIDE, S.Austr. 5000, Australia

a Teratogenesis by hormones. *Gallus domesticus* (Aves), *Rattus norvegicus* (Rodentia)

b Hormonal influences on sex determination. *Gallus domesticus* (Aves)

VAN GANSEN (RASMONT), Mrs. P. Prof. — Lab. de Cytol. et Embryol. Moléc., Univ. libre de Bruxelles, 67, rue des Chevaux, 1640 RHODE-ST-GENÈSE, Belgium

a Ultrastructure of young ovaries at metamorphosis. *Xenopus laevis* (Anura)

b Development of germ cells from oogonia up till mature oocytes (electron microscopy), especially nucleolar structures at the beginning of meiosis. *Xenopus laevis* (Anura)
VANNINI, E. Dr., Prof. — Inst. of Zool., Fac. of Sci., Univ. of Bologna, Via S.Giacomo 9, 40126 BOLOGNA, Italy
a Experimental analysis of the development of the gonad and Bidder’s organ. Bufo spec.  
(Anura)
b Inhibition by antibiotics of testosterone-induced sex-reversal in tadpoles. Rana dalmatina  
(Anura)
c General study of the problem of the “sex gradient” in various hermaphroditic animals.  
(Hydroidea: Trielididae. Turbellaria; Serpulidae. Polychaeta)

VANSTONE, J. M. Ph.D., Prof. — Dept. of Biol., Trinity Coll., HARTFORD, Conn.  
06106, U.S.A.
a The influence of thyroxine upon the regenerative capacity of the tadpole hindlimb. Rana  
sylvatica (Anura)

VANZULLI, Mrs. A. M.D. — Sect. of Exper. Neurol., Inst. of Neurol., Hosp. de Clinicas,  
Piso 2, MONTEVIDEO, Uruguay
a Sensory evoked potentials in adults, fetus, and newborn. Homo sapiens (Primates)

ALLAHABAD-1, India
a Mechanism of transport of substances across the chorio-amaion. Rattus norvegicus  
(Rodentia). Oryctolagus cuniculus (Lagomorpha)
b Role of endometrium and extraplacental membranes in feto-maternal exchange processes.  
Homo sapiens (Primates) (with R. BAVEJA)
c Histochernistry and cytochemistry of the decidua parietalis and capsularis. Same species  
as b
d Chromosomal abnormalities in abortions and congenital anomalies. Same species as b

VARON, S. S. M.D., Prof. — Dept. of Biol., Univ. of California, San Diego, P.O.Box 109,  
LA JOLLA, Calif. 92037, U.S.A.
a In vitro differentiation of nerve tissue. Gallus domesticus (Aves) and others
b Growth- and differentiation-promoting agents from the submaxillary gland. Mus musculus  
(Rodentia)

SANNOIS, France
a Relationship between the somites and the primordia of the forelimbs. Testudo spec.  
(Chelonia), Lacerta spec. (Lacertilia)
b RNA, DNA, and protein synthesis of epidermal and mesodermal cells in the limb buds.  
(Chelonia), Anguis fragilis, Lacerta viridis (Lacertilia) (with A. RAYNAUD)
c Effects of x-rays on embryonic development. Lacerta viridis (Lacertilia) (with Cl. PIEAU)
d Effects of metabolic inhibitors on embryonic development. (Reptilia)

Vavilov St. 26, MOSCOW 117133, U.S.S.R.
a Dynamics of meiosis and mitosis in eggs. Ostrea gigas (Lamellibranchia), Strongy-  
locentrotus drobachiensis, S. intermedius (Echinoidea)
b Production of diploid gynogenesis by means of heat treatment of oocytes at the first  
maturational division and of chemical treatment (with nitrogen mustard) of sperm. Acipenser  
goldenstadii, A. stellatus (Chondrostei)

VALIGN, J. E. Ph.D. — Div. of Neurosci., City of Hope Med. Center, 1500 E. Duarte  
Road, DUAUTE, Calif. 91010, U.S.A.
a Development of neuroglial cells in the central nervous system (electron microscopy and  
antangiography). Rattus domesticus (Rodentia)
b Electron microscopy of spinal cord development. Rattus domesticus, Mus musculus (Rodentia)

VENEZIANO, P. P. Ph.D., Prof. — Dept. of Biol., Wilbur Wright Coll., 3400 N.Austin  
Ave., CHICAGO, Ill. 60634, U.S.A.
— Dept. of Histol. Loyola Dental School, CHICAGO, Ill., U.S.A.
a The effect of artificial sweeteners on growth and development. Gallus domesticus (Aves)
b The effect of antipituitary sera on development. Same species as a
c The effect of low intensity magnetic fields on the developing nervous system of 24, 36, and  
48 hour blastoderms. Same species as a

1900 Coffey Rd., COLUMBUS, Ohio 43210, U.S.A.
a Morphogenesis and physiology of ultimobranchial gland. pineal gland, and blood (Aves)
b Experimental morphology of pineal gland. (Bovidae, Artiodactyla)

VERBICKY, M. Sh. Cand.med.sci. — Inst. of Human Morphol., Acad. of Med. Sci. of the  
U.S.S.R., Baltiyskaya St. 8, MOSCOW 125315, U.S.S.R.
a Immunological relationships between mother and foetus. Rattus norvegicus (Rodentia),  
Papio hamadryas, Macaca mulatta, Homo sapiens (Primates)

Humoral interactions between analogous organs (reticulo-endothelial and leucopoietic  
system) of mother and foetus. Rattus norvegicus (Rodentia), Macaca mulatta (Primates)

VERDONK, N. H. Ph.D. — Zool. Lab., State Univ. of Utrecht, Janskerkhof 3, UTRECHT,  
Netherlands

a Cell-lineage and head-pattern in normal and Li-treated embryos. Lymnaea stagnalis (Gastropoda)
b Determination of bilateral symmetry in the head region. Same species as a
c Germinal localization in eggs. Dentalium spec. (Scaphopoda); Patella spec. (Gastropoda)
d Development of isolated blastomeres. Bithynia tentaculata (Gastropoda)

VERHOFSTAD, A. J. Med.drs. — Dept. of Anat. and Embryol., Univ. of Nijmegen, Geert Grooteplein N. 21, NJMEGEN, Netherlands

a Differentiation of epinephrine- and nor-epinephrine-containing cells in the adrenal medulla. (histochemistry). Mus rattus (Rodentia)

VERNET, G. Dr.Biol. — Lab. de Biol. Cell., Fac. des Sci., B.P. 347, 51 REIMS, France

a Synthesis of porphyrins during development. Lineus viridis (Nemertea)
b Synthesis of porphyrins during anterior regeneration. Lineus ruber, L. lacteus (Nemertea)

VERNET (CORNUBERT), Mrs. G. M. Dr.es Sci., Prof. — Lab. de Physiol. des Invertebrés. Univ. des Sci. et Techn. du Languedoc, 34 MONTPELLIER, France

a Regeneration, development and growth. Pachygrapsus marmoratus (Decapoda, Crustacea)

VERRUISO, A. C. Ph.D. — Dept. of Anat., Div. of Biol. Sci., Univ. of Chicago, 1025 East 57th St., CHICAGO, Ill. 60637, U.S.A.

— American Dental Assoc., 211 E. Chicago Ave., CHICAGO, Ill. 60611, U.S.A.

a Cellular events during fusion of the palatal processes, especially the factor(s) causing epithelial breakdown. (Mammalia)
b A cytoplasmic factor affecting cleft palate production: biochemistry of a strain difference, perhaps due to a mitochondrial mutant. Mus musculus (Rodentia)

VERWOERD, C. D. A. M.D. — Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands

a Early differentiation of the endoderm. Mus musculus (Rodentia) (with C. G. van OSS-TROM and A. A. SCHOUTEN)

VIANEY-LIAUD, M. D.E.A. — Lab. d’Evol., Fac. des Sci., 105 Bd. Raspail, 75 PARIS Vie, France

VIJVERBERG, A. J. Drs. — Zool. Lab., Univ. of Leiden, Kaiserstr. 63, LEIDEN, Netherlands

a Proliferation (mitoses) and DNA synthesis in imaginal discs (autoradiography). Calliphora erythrocephala. (Diptera)
b Influence of X-irradiation and hormones (ecdysteron) on morphogenesis of imaginal discs. Calliphora erythrocephala (Diptera)

VILIMKOVA (HABROVA), Mrs. V. RNDr. — Dept. of Exper. Zool., Charles Univ., Viničná 7, PRAHA 2, Czechoslovakia

a Nucleic acids and subcellular particles in oogenesis and early development. (Amphibia) (with J. NEDVIDEK)

VILLA, Miss L. D.Sc. — Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO, Italy

a Ultrastructural morphology of oocytes. Chaetopterus (Polychaeta)
b Electron microscopy of egg development. Sterneaspis spec. (Polychaeta)

VINCENT, W. S. Ph.D., Prof. — Dept. of Biol. Sci., Univ. of Delaware, NEWARK, Del. 19711, U.S.A.

a Control of ribosome formation in early oocytes: nucleolar chemistry of oocytes. Mytilus edulis, Spisula solidissima (Lamellibranchia), Asterias forbesii (Asteroidea), Arbacia punctulata (Echinoidea)
b Analysis of ribosomal gene amplification in oocyte development with respect to uni- and multinucleolate forms. Mytilus edulis, Spisula solidissima (Lamellibranchia), Asterias forbesii (Asteroidea), Arbacia punctulata (Echinoidea), Roccus saxatilis, Fundulus heteroclitus (Teleostei)

VISCUSO, Miss R. Dr. — Ist. di Zool., Univ. di Catania, Via Androne 81, 95124 CATANIA, Italy

a Physiological and experimental embryology of the earliest developmental stages. Euyreprocnenmis plorans (Orthoptera)

VISSCHER (NEU Mann), Mrs. S. Ph.D., Prof. — Dept. of Zool-Entomol., Montana State Univ., BOZEMAN, Mont. 59715, U.S.A.

a Maternal environmental inter-relationships with embryonic developmental rate. Aulocara eliotii (Orthoptera)
b Embryonic neuroendocrine functions. Aulocara eliotii (Orthoptera)

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VITTORELLI, Miss M. L. Dr.Biol.Sc. — Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

a Fusion of blastomeres. Paracentrotus lividus (Echinoidea)

VIVIEN, J. H. Dr.és Sci., Prof. — Lab.de Zool. et d’Embryol. Exp., Univ. de Strasbourg, 12 rue de l’Université, 67 STRASBOURG, France

VOGE, Mrs. M. Ph.D., Prof. — Dept. of Med. Microbiol. and Immunol., Sch. of Med., Univ. of California, LOS ANGELES, Calif. 90024, U.S.A.

VOLLMAR, H. Dr.remnat. — Biol. Inst. I (Zool.) der Univ., Katharinenstr. 20, 78 FREIBURG, W.Germany

a Embryonic determination. Acheta domesticus (Orthoptera)
b Morphogenetic movements during early embryogenesis. Same species as a

VOLLRATH, L. Priv.Doz., Dr.med. — Dept. Anat., King’s College, Univ. of London, Strand, LONDON WC2R 2LS, England

a Development of the intestine, especially differentiation of cell organelles (histology, histochemistry, electron microscopy). Rattus norvegicus (Rodentia)

VOLPE, E. P. Ph.D., Prof. — Dept. of Biol., Tulane Univ., NEW ORLEANS, La. 70118, U.S.A.

cb VIVIEN, c b VOLPE, c b VREEZEN, a VOLLRATH, a VOLTS, a VRIES, a WADA.

d Role of the thymus in the development and maintenance of immunity. Same species as a

VOORHEES, F. R. Ph.D. — Dept. of Biol., Knox College, GALESBURG, Ill. 61401, U.S.A.

a Development of the reproductive system. Aedes stimulans and other spp. (Diptera)

VREEZEN, Miss W. J. Drs. — Dept. of Genet., Univ. of Leiden, Kaisersr. 63, LEIDEN, Netherlands

a Selection on asymmetrical development of bristle patterns. Drosophila melanogaster (Diptera)

VRIES, O. M. H. de Drs. — Lab. of Bot., Rijksuniversiteit Groningen, Kerklaan 30, Postbus 14, HAREN (Gr.), Netherlands

a Biochemistry of wall formation, using extracts and protoplasts. Schizopyllum commune Basidiomyctecae, Fungi

VYAZOV, O. E. Dr.med.sci., Prof. — Lab. of Embryol., Inst. of Human Morphol., Acad. of Med. Sci. of the U.S.S.R., Baltiyskaya St. 8, MOSCOW 125315, U.S.S.R.

a Development of tissue antigens during eye lens, retina, and kidney development. Gallus domesticus (Aves), Mus musculus (Rodentia)
b Humoral interconnections between analogous organs (brain, lung, reticulo-endothelial and leucopoietic system) of mother & foetus. Rattus norvegicus (Rodentia)

a Selection and biochemical analysis of auxotrophic mutants. Drosophila melanogaster (Diptera)

WADA, S. Dr.remnat. — Zool. Inst., Univ. Düsseldorf, Mettmanner Str. 16-18, 4 DÜSSELDORF, W.Germany

a Morphogenesis of the compound eyes. (Arthropoda)

a Study of certain features of developing embryos by electron microscopy. (Diptera; Amphibia) (with J. JACOB and M. M. PERRY)
b Development of imaginal buds. Drosophila spec. (Diptera) (with E. ROBERTSON)
c Ultrastructural changes during growth. Microstaria thomastiana (Desmiidaeae) (with G. SELMAN)
d Electron microscopy of mutants. Same species as b (with M. M. PERRY)
e Computer simulation of biological patterns (with R. COWE)

WADLEY, G. W. B.S. — Lab. of Radiat. Ecol., Coll. of Fish., Univ. of Washington, 108 Fisheries Center, SEATTLE, Wash. 98105, U.S.A.
a Effects of ionizing irradiation on different stages of embryos developing at different temperatures. Oncorhynchus tshawytscha, Salmo gairdnerii (Teleostei)

WAELSCH, Mrs. S. GLUECKSOHN Ph.D., Prof. — Dept. of Genet., Albert Einstein Coll. of Med., Yeshiva Univ., Eastchester Rd. & Morris Park Ave., NEW YORK, Bronx, N.Y. 10461, U.S.A.
a Developmental physiology. Mus musculus (Rodentia)
b Developmental genetics. Mus musculus (Rodentia)
c Developmental pathology. Mus musculus (Rodentia)

a. Morphogenetic changes due to various bacterial types used as food during the subcultures. *Acanthamoeba* spec. (Rhizopoda)
b. Encystment pattern. *Colpoda* spec. (Ciliata)

WAINWRIGHT, Mrs. L. K., Ph.D., Prof. — Biochem. Dept., Med. School, Dalhousie Univ., Sir Charles Tupper Bldg., HALIFAX, N.S., Canada

a. Regulation of hemoglobin synthesis in blood islands of blastodiscs: 1. role of mitochondrial protein synthesis; 2. role of egg yolk lipids. *Gallus domesticus* (Aves)
b. Hemoglobin synthesis in cell aggregates formed from dissociated blastodiscs. *Gallus domesticus* (Aves)
c. Effects of pesticides and organic mercurials on the “model” system of explanted blastodiscs. *Gallus domesticus* (Aves)

WAINWRIGHT, S. D. Ph.D., Prof. — Biochem. Dept., Med. School, Dalhousie Univ., Sir Charles Tupper Bldg., HALIFAX, N.S., Canada

a. Regulation of hemoglobin synthesis in blood islands of blastodiscs: 1. role of mitochondrial protein synthesis; 2. role of egg yolk lipids; 3. regulation by transfer RNA; 4. methylation of transfer RNA. *Gallus domesticus* (Aves)
b. Hemoglobin synthesis in cell aggregates formed from dissociated blastodiscs. *Gallus domesticus* (Aves)
c. Effects of pesticides and organic mercurials on the “model” system of explanted blastodiscs. *Gallus domesticus* (Aves)

WAKAHARA, M. M.Sc. — Zool. Inst., Fac. of Sci., Hokkaido Univ., North 10, West 8, SAPPORO, 060 Japan

a. Morphogenesis of the pineal and subcommissural organs. *Xenopus laevis* (Anura)


a. Localization of protein synthesis during the first cleavages by electron microscope autoradiography. *Lymnaea stagnalis* (Gastropoda)
b. Electron microscopy of chemical breakdown of proteins in correlation with cytological structure of degenerating yolk granules. Same species as a

WALKER, B. B., M.D., Ph.D., Prof. — Dept. of Anat., Michigan State Univ., Giltner Hall, EAST LANSING, Mich. 48823, U.S.A.

a. Teratology, experiments on cleft palate, the action of different chemicals. *Oryctolagus cuniculus* (Lagomorpha), Mus musculus (Rodentia)

WALKER, D. G., Ph.D., D.Sc., Prof. — Dept. of Biochem., Univ. of Birmingham, Edgbaston, BIRMINGHAM B15 2TJ, England

a. Development of enzymes and enzyme systems in foetal and neonatal animals, with special reference to carbohydrate metabolism. *Rattus* spec. (Rodentia) and other spp. (Mammalia)

WALLACE, H. Ph.D. — Dept. of Genet., Univ. of Birmingham, Edgbaston, P.O.Box 363, BIRMINGHAM 15, England

a. Nucleolar metabolism during development and gametogenesis. *Xenopus laevis* (Anura)
b. Limb regeneration. *Ambystoma* spec. (Urodela)
c. Developmental physiology. (Ascidiacea)


a. Comparative biochemistry of yolk protein synthesis, transport and composition. (Crustacea; Pisces; Amphibia; Aves)

WALLS, J. B. M.B., Ch.B. — Dept. of Anat., School of Med., Thoresby Place, LEEDS LS2 9NL, England

a. Correlation of mitotic activity with development and maintenance of epithelium, especially cellular orientation in stratified squamous epithelia. (Rodentia)


WARREN, Ch. O. Ph.D., Prof. — Dept. of Biol., Southwestern at Memphis, 2000 North Parkway, MEMPHIS, Tenn. 38112, U.S.A.

a. Regulatory role of mitochondria during growth and development. *Achlya ambisexualis* (Lepidoptera)
b. Hormonal regulation of sexual reproduction. Same species as a

WARTENBERG, H. Dr.med., Prof. — Anat. Inst. der Univ., Pestalozzistr. 20, CH-4056 BASEL, Switzerland

a. Electron microscopy of developmental stages of gonads including male and female germ cells. *Homo sapiens* (Primates)
b. Fine structure of postnatal development of circumventricular organs (area postrema, subfornical organ, pineal organ) of the brain. *Felis domestica* (Carnivora), *Macaca mulatta* (Primates)

WARTIOVAARA, J. J. M.D. — Lab. of Exper. Embryol., III. Dept. of Pathol., Univ. of Helsinki, Haartmaninkatu 3, HELSINKI 29, Finland

a. RNA synthesis during development. *Strongylocentrotus purpuratus* (Echinoidea)
c Freeze-etching electron microscopy of ribosome membrane association in BHK (baby hamster kidney) cell line. (Rodentia)

WASSERMAN de CUNIO, Mrs. R. Biochem. — Inst. de Biol. Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina

a Ovulid factors involved in fertilization. *Bufo arenarum* (Anura)

WATANABE, H. Ph.D. — Inst. of Zool., Fac. of Sci., Tokyo Kyöiku Univ., Otsuka 3-29-1, Bunkyo-ku, TOKYO, Japan

a Recognition of specificity in compound forms. *Botryllus primigenus*, *Botrylloides violaceum*, *Clavelina concrescens* (Ascidiae) (with K. TANAKA)


WATANABE, K. Ph.D., Prof. — Dept. of Biol., Sch. of Dent., Tsurumi Women’s Univ., 84 Tsurumi-cho, Tsurumi-ku, YOKOHAMA, Japan


e Electron microscopy of metamorphosis. (Ascidiae), *Rana japonica*, *R. catesbeiana*, *Bufo vulgaris* (Anura)

WATANABE, K. M.Sc. — Res. Inst. for Infectious Diseases, Univ. of Osaka, Senri, OSAKA, Japan

a Cell differentiation and virus infection. *Gallus gallus* (Aves)

WATANABE, T. Dr. — Dept. of Biol., Fac. of Sci., Kônan Univ., Okamoto, Motoyama-cho, Higashinada-ku, KOBÉ, Japan


a Development of structure and function of the thyroid, hypophysis and neuro-secretory system. (higher Vertebrata)

b Function of the thyroid gland. *Eptatretus stouti* (Mxyinoidea, Cyclostomata)

c Limb regeneration and prolactin. *Diemyctylus viridescens* (Urodela)

WATSON (BRYANT), Mrs. M. B.S. — Dept. of Zool., Div. of Biol. Sci., Univ. of Georgia, Barrow Hall, ATHENS, Ga. 30601, U.S.A.

a Cytochemistry and ultrastructure of spermiogenesis, esp. aggregation of ribosomes and their envelopment into a solid membrane bound group which is later discarded along with cytoplasmic debris. *Rehnia spinosa* (Orthoptera)

b Cytochemistry, autoradiography, and ultrastructure of oogenesis. *Rhynchosciara* spec. (Diptera)

c Ultrastructure of the dormant and post-dormant root tip. *Allium cepa* (Liliaceae)

WATTERSON, R. L. Ph.D., Prof. — Dept. of Zool., Univ. of Illinois, URBANA, Ill. 61801, U.S.A.

a Effects of hypophysectomy on development of musculus complexus, long bones, and fat bodies. *Gallus domesticus*, *Anas boschas* (Aves)

b Correction of defects in pituitaryless embryos with anterior pituitary grafts and injections of trophic hormones. Same species as a

c Sources and mechanisms of development of lumbosacral level of neural tube with emphasis on development of myeloschisis. *Gallus domesticus* (Aves)

d Effects of aminoguanidine sulfate on development of liver, mesonephros, metanephros, and heart in vivo and in vitro. Same species as c


a Origin of cells in healing wounds

b Relation of regeneration to reactions of immunity

c Nature of wound healing in relation to components involved and responsible (muco-polysaccharides and collagen)

d Manganese in relation to wound healing

WAYMOUTH, Miss C. Ph.D. — The Jackson Lab., BAR HARBOR, Me. 04609, U.S.A.


WEAKLY (SHAW), Mrs. B. Ph.D. — Dept. of Anat., Univ. of Dundee, DUNDEE DD1 4HN, Scotland, U.K.

a Cytochemical and autoradiographic investigations of developing germ cells on the electron microscopic level. *Mesocricetus auratus* (Rodentia)

WEBER, R. Ph.D., Prof. — Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlstr. 8, CH-3012 BERN, Switzerland

a Mechanisms of tissue involution during metamorphosis. *Xenopus laevis* (Anura)

b Thyroxine and RNA synthesis in tadpole tissues. *Xenopus laevis* (Anura) (with G. RYF-FEL and U. SCHIBLER)

c Effects of inhibitors of protein synthesis on metamorphosis. *Xenopus laevis* (Anura) (with H. KLEINLOGEL)

d Comparative biochemistry and ultrastructure of mitochondria in embryonic systems. *Xenopus laevis* (Anura) (with A. KISTLER)
M.-DNA in relation to biogenesis of mitochondria in liver. *Mus musculus* (Rodentia)


a Regeneration, regulation, and pattern formation. *Hydra* spec. (Hydrozoa)
b Morphogenesis and pattern formation in limbs. *Blattella* spec. (Blattariae)

WECHSLER, W. Dr.med., Prof. — Max-Planck-Inst. für Hirnforsch., Abt. für Allgem. Neurol., Ostmerheimer Str. 200, 5 KÖLN 91 (Merheim), W.Germany

a Development, especially of the nervous system. *Mus musculus*, *Rattus* spec. (Rodentia)
b Experimental induction of tumors and malformations during development. Same species as a

WEGENER, G. Dr.rer.nat. — Zool. Inst. der Univ., Berlinerstr. 15, 6900 HEIDELBERG, W.Germany

a Protein synthesis during cleavage, germ band, and organogenesis. *Acheta domestica* (Orthoptera)
b Organisation of energy metabolism and selective synthesis of cytoplasmic proteins in the life cycle. *Physarum polycephalum* (Eumycetozoa)

WęGLARSKA, Miss B. D.Sc. — Zool. Dept., Jagiellonian Univ., ul.Krupnicza 50, KRA-KÓW, Poland

a Histochemical studies on development. *Melasoma populii* (Coleoptera)

WEGMANN, R. Dr.en Méd., Dr.és Sci., Prof. — Inst. d'Histochem. Méd., Fac. de Méd., Univ. de Paris, 45 rue des Saints Péres, 75 PARIS-6e, France

a Enzymology and metabolic pathways of morphogenesis. (Mammalia)
b Development of the ovary. (Mammalia)
c Maturation of the ovum. (Mammalia)

WEGNEZ, M. Lic.és Sci. — Lab. de Biochim., Univ. de Liège, 17 Place Delcour, B-4000 LIEGE, Belgium

a Mécanismes biochimiques de l'oogenése. *Xenopus laevis* (Anura)


a Ultrastructure of developing retina and correlation with function as indicated by electro-retinography. *Rana* spec. (Anura), *Gallus domesticus* (Aves), *Rattus norvegicus*, *Citellus spec.* (Rodentia)
b Ultrastructure of ocular structures other than retina and correlation with functional awakening. Same species as a

c Ultrastructural aspects of neuro-ophthalmic development; formation of optic nerve, chiasm, lateral geniculate bodies, optic radiations and occipital cortex (where appropriate). Same species as a


a Resorption of all foetuses except two during 5th to 10th week of gestation. *Lagostomus maximus* (Chinchillidae, Rodentia)

WEIRICH, G. Dr.rer.nat. — Zoecon Corp., 975 California Ave., PALO ALTO, Calif. 94304, U.S.A.

a Dynamics of uptake and elimination of juvenile hormone after topical application, a comparative study. *Pyrrhocoris apterus* (Heteroptera), *Dermestes maculatus* (Coleoptera), *Musca domestica* (Diptera), *Galleria mellonella*, *Manduca sexta* (Lepidoptera)
b Distribution and metabolism of juvenile hormone after different modes of application: localization and specificity of some of the enzymes involved. Same species as a

WEIS (SHULMAN), Mrs. J. S. Ph.D., Prof. — Dept. of Zool., Rutgers Univ., 195 University Ave., NEWARK, N.J. 07102, U.S.A.

b Experimental modification of regenerative response in limbs and fins. Same species as a

WEIS, P. D.D., Prof. — Dept. of Anat., Coll. of Med. and Dent., 100 Bergen St., NEWARK, N.J. 07103, U.S.A.

a Development of the nervous system in the presence of certain insecticides. *Brachydanio rerio* (Teleostei)

WEISHEIT (SCHULTZ), Mrs. P. Ph.D., Prof. — Biol. Dept., Univ. of Colorado, 1100 E. 14th St., DENVER, Colo. 80202, U.S.A.


a Biophysics of cell interactions


a Teratoma cells in vitro. (Mammalia)
b Social behavior of cells in vitro. (Aves; Mammalia)
Effects of graded sublethal doses of X-rays on several different stages of the embryo. 

Oncorhynchus kisutch, O. tshawytscha, Salmo gairdnerii (Teleostei)

Experimental embryology. Salmo gairdnerii, Oncorhynchus kisutch, O. tshawytscha (Teleostei)

effects of low, acute doses of X-rays on early development. Oncorhynchus spec., Salmo spec. (Teleostei)

d Effects of ionizing irradiation on different stages of embryos developing at different temperatures. 

Oncorhynchus tshawytscha, Salmo gairdnerii (Teleostei)

WELLÄUER, P. Lic.phil.nat. — Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlisstr. 8, CH-3012 BERN, Switzerland

M-DNA in relation to biogenesis of mitochondria in liver. Mus musculus (Rodentia) (with R. WEBER)

WELLS, L. J. Ph.D., Prof. — Dept. of Anat., Sch. of Med., Univ. of Minnesota, MINNEAPOLIS, Minn. 55455, U.S.A.

WENDER, M. B. M.D., Prof. — Inst. of Neurol. and Sensory Organs, Med. Acad., Przybyszewskiego St. 49, POZNAN, Poland

a The chemical composition and enzyme activity of developing nervous tissue with special reference to the period of myelination. (Mammalia)

b The influence of ionizing radiation on the developing nervous system. (Mammalia)

c Histoenzymatic architectonics of the developing nervous system. (Mammalia)

WENGERT, B. S. Ph.D., Prof. — Dept. of Anat., Coll. of Med., Univ. of Saskatchewan, SASKATOON, Sask., Canada

a Appearance of specific brain antigens during development (microcomplement fixation). Gallus domesticus (Aves)

b Morphology and biochemistry of the mode of action of the crooked neck dwarf gene. Same species as a

WENGERT, Mrs. E. L. Ph.D. — Dept. of Anat., Coll. of Med., Univ. of Saskatchewan, SASKATOON, Sask., Canada

a Development and differentiation of the optic tectum and optic nuclei after early surgical removal of portions of the optic cup. Gallus domesticus (Aves)

b Development of olfactory system in the embryo. Same species as a

c Tissue culture of the early neural tube and brain. Same species as a


a Mechanism of testicular descent (histology, biochemistry, tissue culture). (Mammalia)

b Development of heart anomalies, especially hypoplasia of right and left heart. (Mammalia)

WENT, D. F. — Zool. Inst. I. Univ. Würzburg, Röntgenring 10, 87 WÜRZBURG, W. Germany

a Oogenesis in vitro. Pimpla turionellae (Ichneumonidae, Hymenoptera)

WERNER, Y. L. Ph.D. — Dept. of Zool., Hebrew Univ. of Jerusalem, JERUSALEM, Israel

a Normal development, embryonic and postnatal, of the vertebral column. (Gekkoidea, Lacertilia)

b Tail regeneration, especially skeleton and skin; bifurcate tails. (Lacertilia)

c Temperature effects during embryogenesis on the number of vertebrae. Hemidactylus turcicus, Stenodactylus stenodactylus (Gekkoidea, Lacertilia)

d Temperature dependence of the duration of embryonic development. (Gekkoidea, Lacertilia)

WESSEL (HARDERS), Mrs. M. B.S. — Dept. of Zool.-Entomol., Montana State Univ., BOZEMAN, Mont. 59715, U.S.A.

a Maternal influences on constituents in the egg from a panoistic ovary. Aulocara elliottii (Acridae, Orthoptera)


WESSELLS, J. G. H. Dr., Prof. — Lab. of Bot., Rijksuniversiteit Groningen, Kerklaan 30, Postbus 14, HAREN (Gr.), Netherlands

a Biochemistry and ultrastructure of sexual morphogenesis, especially in relation to enzyme regulation. Schizopyllum commune, (Basidiomycetaceae, Fungi)

Biochemistry and ultrastructure of hyphae, synthesis and degradation of wall constituents. (Fungi)

WESTERGAARD, O. Ph.D. — Dept. of Biochem. B, Univ. of Copenhagen, 30 Juliane Maries Vej, 2100 COPENHAGEN Ø, Denmark

a DNA-polymerase activity in correlation to cell cycle and to circumstances where DNA is damaged (UV, X-ray or treatment with chemicals). Tetrahymena pyriformis (Ciliata)


a Histological and ultrastructural aspects of regenerating nerve fibres, particularly in the olfactory system. Carassius carassius (Teleostei)
WESTON, J. A. Ph.D. — Dept. of Biol., Univ. of Oregon, EUGENE, Ore. 97403, U.S.A. •
  a The migration and differentiation of neural crest cells. Gallus domesticus (Aves), Mus musculus (Rodentia)
  b The cell surface as an effector of cell specificity. Gallus domesticus (Aves)
  c The action of morphogenetic agents on embryonic cell behavior in vivo and in vitro. Gallus domesticus (Aves)

WEYGOLDT, P. Dr. — Biol. Inst. I (Zool.) der Univ., Katharinenstr. 20, 78 FREIBURG, W.Germany
  a General and comparative embryology. (Pseudoscorpionidea and other Arachnida)
  b Embryology. Tarantula marginemaculata (Amblypygidae, Arachnida)
  c Embryology. Euphiomedes producta (Ostracoda, Crustacea)

WHALEY, W. G. Ph.D., Prof. — Cell Res. Inst., B.L.220, Univ. of Texas, AUSTIN, Tex. 78712, U.S.A.


  a Effects of hydrocortisone on embryonic tissue cells grown in vitro. Gallus gallus (Aves)
  b Dissociation of embryonic tissues and viability of cultured cells. Same species as a

WHITELEY, A. H. Ph.D., Prof. — Dept. of Zool., Univ. of Washington, SEATTLE, Wash. 98105, U.S.A.

WHITT, G. S. Ph.D. — Dept. of Zool., Univ. of Illinois, URBANA, Ill. 61801, U.S.A.
  a Developmental genetics: 1. expression of differential gene function during early embryogenesis and cytodifferentiation with an emphasis on those genes responsible for isozymes; 2. correlation of lactate dehydrogenase gene homology with the specificity of the gene activating mechanisms during development; 3. genetic, physical, and chemical analysis of the lactate dehydrogenase isozymes unique to the differentiated nervous system; 4. biochemical genetics of isozymes, especially lactate dehydrogenase; 5. asynchronous allele activation during embryogenesis of interspecific and intergeneric hybrids. Micropterus dolomieu, M. salmoides and other spp. (Centrarchidae, Teleostei)
  b Epigenetic and genetic control of protein synthesis during cytodifferentiation with emphasis on the post-translational control of gene product (especially lactate dehydrogenase isozymes), assembly and function. (Teleostei and other Vertebrata)

WHITTAKER, J. R. Ph.D. — The Wistar Inst. of Anat. and Biol., 36th St. at Spruce, PHILADELPHIA, Pa. 19104, U.S.A. •
  a Melanin biosynthesis and cell regulatory mechanisms in differentiating pigment cells. Ciona intestinalis (Asciidae), Gallus domesticus (Aves)
  b Localization and segregation of cytoplasmic information concerned with specific enzyme differentiations in embryonic development: acetylcholinesterase, tyrosinase, alkaline phosphatase. Ciona intestinalis, Styela partita, Molgula manhattensis (Asciidae)

WHITTEN, W. K. D.Sc, B.V.Sc. — The Jackson Lab., BAR HARBOR, Me. 04609, U.S.A.
  a Preimplantation stages of development in vivo and in vitro. Mus musculus (Rodentia)

WHITTINGHAM, D. G. Ph.D. — Marshall Lab., Dept. of Physiol., Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3EG, England
  a Nutrient requirements for growth and development of eggs in vitro. Mus musculus, Mesocricetus auratus (Rodentia), Mustela putorius furo (Carnivora), Ovis aries (Artiodactyla)
  b Storage of embryos at low temperature. Mus musculus (Rodentia)

WIDERSTEN, B. Fillic. — Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden
  a Larval development. (Scaphoza)

  a Changes in endoplasmic reticulum membrane enzymes during development and aging. Rattus norvegicus (Rodentia)

  a Effect of penicillin and streptomycin on early development. Gallus domesticus (Aves)
  b Neural induction and pattern formation of rhombencephalic and anterior spinal cord region. Same species as a

WIEST, Miss L. Dr.phil. — Inst. für Krebsforsch., Univ. Wien, Borschkegasse 8a, Postfach 72, A-1090 WIEN, Austria
  a Endocrine control in liver regeneration. Rattus norvegicus, Mus musculus (Rodentia)

WIGGLESWORTH, Sir V. B. Dr., Prof.(Emer.) — Dept. of Zool., Univ. of Cambridge, Downing St., CAMBRIDGE, England •
  a Mode of action of growth hormonés. Rhodnius prolirus (Triatomidae, Hemiptera)
MECHANISMS

Establishment

Ph.D., Development

Regulation

Organogenesis

Role

The

Electrophoresis

Adaptive

Larval

Morphogenesis

Regulation

WILD, A. G. de M.D., Ph.D., Prof. — Dept. of Anat. and Embryol., State Univ. of Groningen, Oostersingel 69, GRONINGEN, Netherlands

a Development of computer programs for the reconstruction, by incremental plotter, of embryonic organ structure

b Morphogenesis of the palatal and nose regions, studied by means of reconstructions. Mus musculus, Rattus norvegicus (Rodentia). Homo sapiens (Primates)


a Organogenesis in vitro (limb bud, cranial neural crest). Ambystoma maculatum (Urodela)

b Cellular differentiation (pigment cell; ectomesenchyme): 1. causal biochemistry of cellular differentiation; 2. differentiation of cytoplasmic fragments. Same species as a

c Morphology and causal biochemistry of striated muscle differentiation. Same species as a
d Electrophoresis of molecular constituents of specific embryonic anlagen and cell types: fraction recovery and tissue culture of embryonic cells in the presence of selected fractions. Same species as a
e Cytochimeras in tissue culture from disaggregated cells of embryos of different classes. Gallus spec. (Aves), Mus spec. (Rodentia)
f Role of probabilistic processes in cellular differentiation. Same species as e
g Ontogeny of proteins and amino acids. Fundulus heteroclitus (Teleostei)
h The energy pathways of differentiating systems. (Vertebrata)
i Informational macromolecules in early development and differentiation. (Echinodermata. Vertebrata)

j The molecular basis of major and minor symmetry in embryogenesis. (Vertebrata)

WILDE, J. de Ph.D., Prof. — Lab. of Entomol., Agric. Univ., Binnenhaven 7, P.O.B. 62, WAGENINGEN, Netherlands


a Regulation of levels of specific proteins (lactate dehydrogenase isoenzymes) during functional development of mammary gland, and in mammary tumor. Rattus spec. (Rodentia)

WILLIAMS, L. G. A.B. — Pacif. Marine Station, Univ. of the Pacific, DILLON BEACH, Calif. 94929, U.S.A.

a Larval development and functional morphology (photomicrography, histology). Hermisenda crassicornis, Aeolidia papillosa, Phidiana pugnax, Cadlina limbaughi, Anisodoris nobilis, Triphora carpenieri (Nudibranchiata), Phyllaplysia taylori (Tectibranchiata, Opisthobranchiata, Gastropoda)

WILLIAMS, N. E. Ph.D., Prof. — Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA-CITY, Iowa 52240, U.S.A.

a Electron microscopy of developing oral apparatus. Tetrahymena spec. (Ciliata)
b Regulation of protein synthesis in development. Tetrahymena spec. (Ciliata)


a Adaptive morphogenesis in the yolk-sac membrane. Gallus domesticus (Aves)
b The freemartin. (Mammalia)

WILLIS (HORWITZ), Mrs. J. Ph.D., Prof. — Dept. of Entomol., Univ. of Illinois, URBANA, Ill. 61801, U.S.A.

a Influence of juvenile hormone on cuticular proteins and morphology. Hyalophora cecropia (Lepidoptera), Oncopeltus fasciatus (Hemiptera)


a Establishment of implantation and early pregnancy. Mus musculus (Rodentia)
b Experimental developmental morphology. Mus musculus (Rodentia)


a Mechanism of origin of hemoglobin-synthesizing machinery during development. Gallus domesticus (Aves)
b Activation of protein and RNA synthesis in cleaving eggs. Strongylocentrotus purpuratus (Echinidea)
c RNA synthesis during development. Same species as b
Morphogenesis and comparative physiology of placenta and fetal membranes. (Elastombranichi, Chiroptera)

WINGSTRAND, K. G. Dr.phil., Prof. — Inst. of Comp. Anat., Universitetssparken 15, DK-2100 COPENHAGEN Ø, Denmark

WINTER, Miss H. Dr.reer.nat. — Zool. Inst. der Univ., Berlinerstr. 15, 6900 HEIDELBERG, W.Germany

RNA synthesis and transport during oogenesis in the meristic-telotrophic ovary. Dysdercus intermedius (Hemiptera)

WISCHNITZER, S., Ph. D. — Prof. — Dept. of Biol., Yeshiva Univ., 186th St. and Amsterdam Ave., NEW YORK, N.Y. 10033, U.S.A.

Electron microscopy of oogenesis. Triturus viridescens (Urodela), Mus albicans (Rodentia), Saimiri sciureus, Homo sapiens (Primates)

WITSCHI, E. Ph.D., M.D. — Prof. — Rockefeller Univ., NEW YORK, N.Y. 10021, U.S.A.


WOELLWARTH, C. von Dr.phil. — Heiligenberg Inst., 7799 HEILIGENBERG, Baden, W.Germany

a Autonome Musterbildung in der Medullarplatte. (Amphibia)
b Determination der Kopforgane. (Amphibia)
c Entstehung von Situs inversus durch Defekte und verschiedene äussere Einflüsse. (Urodela)

WOERDEMAN, M. W. M.D., Prof. (Emer.) — Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands

a Lens development. (Aves; Mammalia)


Embryology. Daphnia magna (Cladocera, Crustacea)

WOLBERT, P. Dr.reer.nat. — Zool. Inst. I, Univ. Würzburg, Röntgenring 10, 87 WÜRZBURG, W.Germany

Hormone dynamics in the pupa during normal development and after wounding or X-raying. Galleria mellonella (Lepidoptera)

WOLF, R. Dr. — Heiligenberg Inst., 7799 HEILIGENBERG, W.Germany

— Zool. Inst. der Univ., Röntgenring 10, 87 WÜRZBURG, W.Germany

Correlation between kinematics and specific ultrastructures during early embryogenesis, including experiments by physical noxes (time lapse microcinematography, electron microscopy). Wachtiella persicae (Cecidomyiidae), Chironomus thummi (Chironomidae, Diptera)

WOLFE, J. S. Ph.D. — Dept. of Biol., Wesleyan Univ., MIDDLETOWN, Conn. 06457, U.S.A.

a The effect of karyomere formation in early cleavage in later development. (Echinoidae)
b Morphogenetic considerations of the oral apparatus. Tetrahyema pyriformis (Ciliata)

WOLFF (HENNIG), Mrs. Em. Dr.és Sci. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France

Organ culture of cancer tumors taken directly from the patient: growth factors for long term culture; culture on extracts of chick mesonephros and yeast; fractionation of dialysates of liver extracts. Homo sapiens (Primates)

WOLFF, E. C. Dr.és Sci. — Prof. — Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94 NOGENT-sur-MARNE, France

a Culture in vitro de longue durée de tumeurs malignes en presence et en l’absence d’organes embryonnaires. Homo sapiens (Primates) (avec Em. WOLFF)
b La différenciation et l’intersexualité in vitro et in vivo des gonades embryonnaires par les méthodes des antihormones. (Aves)

WOLK, M. M.Sc. — Dept. of Zool., Hebrew Univ. of Jerusalem. JERUSALEM, Israel

Separation of epiblast from hypoblast by inserted membranes in an attempt to detect possible inductive influences. Gallus domesticus (Aves)


Cellular basis of morphogenesis and pattern formation: 1. Regeneration. Hydra spec. (Hydrozoa); 2. Morphogenesis. Gallus domesticus (Aves); 3. Limb development and regeneration. (Amphibia)

WOLSKY, A. Dr.phil., Prof. — Dept. of Biol., Marymount Coll., TARRYTOWN, N.Y. 10591, U.S.A.

Effect of anti-metabolites, antibiotics (especially actinomycin) and nucleic acids on development and regeneration. Paracentrotus lividus, Arbacia punctulata (Echinoidae), Triturus viridescens, Rana pipiens (Amphibia)

a Re-investigation of the influence of neurogenesis on the development of the compound eye. Bombyx mori (Lepidoptera)
b Lens regeneration in embryonic stages under normal conditions and under the influence of chemical inhibitors. Ambystoma punctatum (Urodela)
Influence Hypophysectomy 
Diaplacentare
Dr. habil., Preimplantation X-ray Stoffwechsel Temperature Genetic Teratology.
E. Histochemistry Ontogenesis Apis Regulation M.Sc. Pathological The
WOOLLAM, WOYKE, WOODS. WOLTZ, WRENN, WR6BLEWSKA, WU, WR6BLEWSKI, a vitro 94305, mellifera 8a, pupal Coll.
LOTTESVILLE, HORAK) gallus weg, 53, 2, Marksa (Diptera)
(Warszawa) musculus (Rodentia)
— G.-J. 8006, (Hymenoptera)
W. deutschen (Aves) Steroide, teratogene Substanzen). Xenopus laevis, Bufo bufo (Anura), Gallus gallus (Aves)
— G. J. (Schilddrusen- hormon, Steroide, teratogene Substanzen). Xenopus laevis, Bufo bufo (Anura), Gallus gallus (Aves)
— W. (Landwirtsch. Zool. und Bienenk.)
— W. (Schilddrusen-hormon, Steroide, teratogene Substanzen). Xenopus laevis, Bufo bufo (Anura), Gallus gallus (Aves)
b Pathologische abnormitäten in development, caused by herbicides. Apis mellifera (Hymenoptera)
WYATT, G. R. Ph.D., Prof. — Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, Conn. 06520, U.S.A. 196
a Protein synthesis, RNA and ribosomes: changes during hormone action and metamorphosis. 
_Hyalophora cecropia, Manduca sexta (Lepidoptera)_
b Protein synthesis and transport in oogenesis: regulation by hormones. _Hyalophora cecropia_ (Lepidoptera) and other spp. (Insecta) 


WYSOCKA, Miss B. B.Sc. — Dept. of Histol. and Embryol., Acad. of Med., ul. Narutowicza 60, ŁODŹ, Poland
a Comparative histochemistry and biochemistry of amounts and distribution of some inorganic salts in spodograms of lungs and of livers in relation to the level of Na, K, and Ca in blood plasma during embryogenesis. _Xenopus laevis_ (Anura), _Rattus norvegicus, Cavia porcellus_ (Rodentia)

WYTTEBNACH, Ch. R. Ph.D. — Dept. of Physiol. and Cell Biol., Univ. of Kansas, LAWRENCE, Kansas 66044, U.S.A.
a Mechanics and physiological regulation of annulated and unannulated growth in pedicels and stolons (microlaser beam irradiation, metabolic inhibitors. electron microscopy). _Campanularia flexuosa_ and other spp. (Hydrozoa)

XAVIER MORATO, M. J. Prof. — Inst. de Histol. e Embriol., Fac. de Med., Av. Prof. Egas Moniz. LISBOA 4, Portugal
a Histogenesis of the area postrema. _Felis catus_ (Carnivora)
b Histogenesis of the neurohypophysis, at microscopical level. _Felis catus_ (Carnivora), _Oryctolagus cuniculus_ (Lagomorpha)
c Action of ionizing radiations upon the embryonated egg. _Gallus domesticus_ (Aves) (with M. J. RODRIGUES CORREA)

YAFFE, D. Dr. — Dept. of Cell Biol., The Weizman Inst. of Sci., REHOVOTH, Israel •

YAJIMA, H. Ph.D. — Dept. of Biol., Fac. of Sci., Ibaraki Univ., Bunkyo-2-chome, MITO, Japan
a Malformations induced by irradiation with monochromatic ultraviolet light. _Chironomus dorsalis_ (Diptera)
b Effects of temperature during and after centrifugation of eggs on the production of double malformations. _Chironomus dorsalis_ (Diptera)
c Effect of ultraviolet irradiation upon the re-entry of pole cells (electron microscopy). _Chironomus dorsalis_ (Diptera)
d Electron microscopy of eggs centrifuged at early and middle pre-migration stages. _Chironomus dorsalis_ (Diptera)

YAMADA, J. D.Agr. Prof. — Lab. of Physiol. and Ecol., Fac. of Fish., Hokkaido Univ., HAKODATE, Hokkaido, Japan
a Development and growth of hard tissues. (Teleostei)
b Yolk absorption during embryogenesis. (Teleostei)


YAMADA, T. D.Sc., Prof. — Biol. Div., Oak Ridge Natl. Lab., P.O.Box Y, OAK RIDGE, Tenn. 37830, U.S.A.
a The mechanism of dedifferentiation in Wolffian lens regeneration (ultrastructure, biochemistry). _Notophthalmus (Truttaurus) viridescens_ (Urodela)
b The factor of redifferentiation in Wolffian lens regeneration (tissue and cell culture). Same species as a

a Biochemical studies on effect of radiation on the embryo. _Oryzias latipes_ (Teleostei), _Bufo vulgaris_ (Anura)

YAMADORI, T. M.D., Prof. — Dept. of Anat., Div. I, School of Med., Hiroshi Univ., Zaifucho 5, HIROSKI-City, Aomori-ken, 036 Japan
a Development of nerve cells in the spinal ganglia. _Rattus norvegicus_ (Rodentia)

YAMAGAMI, K. Ph.D. — Zool. Inst., Univ. of Tokyo, Hongo 7-3, Bunkyo-ku, TOKYO, 113 Japan
a Biochemical studies on embryonic and yolk proteins. (Teleostei)
b Partial purification of chorionase. _Oryzias latipes_ (Teleostei)
c Ontogeny of hemoglobins in embryos and larvae before complete absorption of yolk material. _Salmo gairdneri_ syn. _irideus_ (Teleostei)

a Regeneration of cell renewal systems after radiation injury. _Mus musculus, Cavia porcellus_ (Rodentia)

YAMAMOTO, K. D.Sc., Prof. — Lab. of Fresh-water Fish Cult., Dept. of Biol., Fac. of Fish., Hokkaido Univ., HAKODATE, Japan
a Histo-physiological studies of oogenesis. (Teleostei)
b Electron microscopy of oogenesis. (Teleostei)
c Studies on the hormones of reproduction. (Teleostei)
YAMAMOTO, T. Dr Med., Dr Med. Sci., Prof. — Dept. of Anat., Fac. of Med., Kyushu Univ., FUKUOKA, 812 Japan
YAMAMOTO, T. D.Sc., Prof. — Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa-ku, NAGOYA, Japan
YAMAMOTO, T. S. D.Sc. — Zool. Inst., Fac. of Sci., Hokkaido Univ., North 10, West 8, SAPPORO, 060 Japan
a Cytochemistry of development. (Teleostei)
YAMAMURA, H. M.D. — Dept. of Anat., Sch. of Med., Hiroshima Univ., Kasumi-cho, HIROSHIMA, Japan
YAMANA, K. D.Sc., Prof. — Dept. of Biol., Fac. of Sci., Kyushu Univ., Hakozaki-cho, FUKUOKA, 812 Japan
a Regulation of ribosomal RNA synthesis during embryonic development. Xenopus laevis (Anura)
a In vitro fertilization and development of eggs. Mesocricetus auratus, Rattus norvegicus, Mus musculus (Rodentia)
b Chromosomes and development. Same species as a
YANAGISAWA, T. D.Sc., Prof. — Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2-1-1 chome, Fukazawa-machi, Setagaya-ku, TOKYO, 158 Japan
a Phosphagens in egg and spermatozoa. (Echinodermata)
b Ion exchange and paper chromatography of the nature of the acid-soluble nucleotides in the egg and their changes during development. Hemicentrotus spec., Anthocidaris spec., Pseudocentrotus spec. (Echinoidea), Asterias spec., Asterina spec. (Asteroidea)
c Tracer experiments on phosphate, sugar, and nucleic acid metabolism of embryo. (Echinodermata)

YARDIN, M. H. M.D., D.D.S. — U.E.R. d’Odontol., 2 place Pasteur, 35 RENNES, France
a Morphology of jaw development in the young animal. Oryctolagus cuniculus (Lagomorpha)
b Experimental morphogenesis in the young animal: muscle ablations, neurotomy, dental bud transplantation etc. Same species as a

YASUDA, M. M.D. — 2nd Dept. of Anat., Kyoto Prefectural Univ. of Med., Kawaramachi-Hirokoi, Kamikyo-ku, KYOTO 602, Japan
a Epidemiology of anomalies in embryos. Homo sapiens (Primates)
b Chromosome aberrations and sex ratio in embryos. Homo sapiens (Primates)
c Morphogenesis of certain malformations of extremities in embryos. Homo sapiens (Primates)
d Teratogenicity of herbicides and pesticides. Rattus norvegicus (Rodentia)

YASUDA, Mrs Y. M.D. — Dept. of Anat., Kyoto Univ., Konoe-cho, Yoshiida, Sakyo-ku, KYOTO 606, Japan
a Comparative study on in vitro development of organ primordia. Mus musculus (Rodentia)

YONTEMA, C. L. Ph.D., Prof. — Dept. of Anat., Upstate Med. Centre, State Univ. of New York, 766 Irving Ave., SYRACUSE, N.Y. 13210, U.S.A.
a Acceptance of homografts and xenografts during embryonic stages. (Chelonia)

a Macromolecular synthesis during lens differentiation in vitro. Gallus domesticus (Aves)

YOSHIKAWA, I. — Dept. of Genet., School of Med., Nagasaki Univ., 12-4, Sakamoto-machi, 852 NAGASAKI, Japan
a Radiation genetics (embryo, germ cells). Drosophila melanogaster (Diptera)

YOUNG, B. A. M.D., Ph.D. — Anat. School, Univ. of Cambridge, Downing St, CAMBRIDGE CB2 3DY, England
a Electron microscopy of the placenta. (Pinnipedia, Cetacea)
b Electron microscopy of developing endocrine glands. (Pinnipedia, Cetacea)

YÜ (KOU), Mrs. N. W. B.S. — Dept. of Biomorph., Natl. Defense Med. Center, P.O.Box 7432, TAIPEI 107, Taiwan, Republ. of China
a Reversibility of sex transformation with temperature treatment. Rana catesbeiana (Anura)

a Function of microsomes in developing liver. Rattus norvegicus (Rodentia)

YVROULIDIS, Miss M. — Lab. d’Anat. Comp., Fac. des Sci. d’Orsay, Bâtiment 441, 91 ORSAY, France

ZAAYER, Miss J. J. P. Ph.D. — Lab. for Cell Biol. and Histol., State Univ., Rijnsburgerweg 10, LEIDEN, Netherlands
a Hormonal activity of fetal gonads and adrenal glands with regard to the development of the reproductive tract (organ culture). Cavia porcellus (Rodentia), Homo sapiens (Primates)
b Hormonal activity of the placenta in organ culture. Cavia porcellus (Rodentia)
ZACCANTTI, F. Dr. — Inst. of Zool., Univ. of Bologna, Via S.Giacomo 9, 40126 BOLOG-NA, Italy
a In vitro culture of larval and adult gonads. Bufo bufo, Rana dalmatina (Anura)
b Hormone regulation of ovarian and Bidder's organ oogenesis. Bufo bufo (Anura)
c Analysis of sex differentiation by autoradiographic methods. Same species as a

ZAFFAGNINI, E. Dr. — Inst. of Zool., Univ. of Bologna, Via S. Giacomo 9, 40126
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a Cytochemistry and electron microscopy of the nurse-cells and oocyte differentiation. Daphnia magna (Cladocera, Crustacea)
b Endocrine centres, growth, moultmg, and gametogenesis. Same species as a
c Organization of reproductive system and gametogenesis. Limnadia lenticularis (Conchostra-ca). Derocheilocaris remanei (Mystacocarida, Crustacea)

a Electron microscopy of the fertilization process. Homo sapiens and other spp. (Primates)
b Embryonic development. Homo sapiens (Primates)

a Endocrine aspects of blastocyst implantation. Rattus norvegicus (Rodentia)
b Egg transplantation. Mus musculus (Rodentia)
c Development of ectopic trophoblast. Rattus norvegicus, Mus musculus (Rodentia)
d Energy requirements and fertility of matured oocyte. Mus musculus (Rodentia)
e Fusion of blastomers and oocytes with inactivated sendai virus. Mus musculus (Rodentia)

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— Lab. d’Embryol. Exp. du Coll. de France, 11 Place M.Berthelot, 75 PARIS Ve, France
a In vitro culture of regenerating tissues and organs. Dugesia lugubris, D. tigrina, Polyceos nigra (Turbellaria)
b Influence of various factors (tissue and organ extracts) on pharynx regeneration. Same species as a

ZIMMERMANN, A. A. Prof. (Emer.) — Dept. of Anat., Coll. of Med., Baylor Univ., HOUSTON, Tex., U.S.A.

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a Normal development of early stages with special reference to the immunological and nutritional relations with the mother. Mesocricetus auratus, Cavia cobaya (Rodentia)
b Determination and differentiation of organ primordia analysed by the use of teratogenic substances. Mesocricetus auratus, Cavia cobaya (Rodentia)

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ZONNEVELD, B. J. M. Drs. — Dept. of Genet., Univ. of Leiden, Kaisersr. 63, LEIDEN, Netherlands
a Developmental genetics of the fruiting bodies. Aspergillus nidulans (Ascomycetes)


ZUBOVA, Mrs. S. E. — Biol. Inst., Leningrad State Univ., LENINGRAD B-164, U.S.S.R.


a Resistance and adaptation of the early embryo. Testudo graeca, T. horsfieldi, Emyg orbicularis and others (Chelonia), Gallus gallus, Anas domesticus, Coturnix coturnix and others (Aves)

ZÜST, Miss B. Dr.spéc. — School of Biol. Sci., Flinders Univ., BEDFORD PARK, S.A. 5042, Australia
a The germ plasm. Xenopus laevus (Anura)

a Analysis of macromolecular synthesis during induction and differentiation of the eye lens. Gallus domesticus (Aves), Mus musculus (Rodentia)
b Developmental genetics of mutations affecting eye development. Mus musculus (Rodentia)

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SUBJECT INDEX
(alphabetical order)

New heading: NEUROTRANSMITTERS

Although the Index is intended to be self-explanatory, some introductory remarks may be useful.

The Index covers not only embryology, but the whole of developmental biology. It is composed of headings (large capitals) and entries (small print and small capitals). The names printed in small capitals refer to the Directory of Names, where the corresponding research subjects may be found.

The headings generally come under one of the following categories: 1) disciplines, 2) techniques, 3) cells, organs and other body components, 4) substances or classes of substances, 5) developmental stages, processes or factors.

Since virtually all the entries in the Index refer to developmental processes, the word "development" is omitted unless used in a general sense. In general, an attempt has been made to start the entries with the most informative word, but it was impossible to avoid that entries sometimes start with an adjective of a rather unspecific character, such as: comparative, descriptive, experimental; abnormal, normal; early, late. Such entries are easily overlooked in a search for specific information, particularly in the longer sections. Entries also frequently start with such phrases as "effect on/of" and "relation with". Prepositions very seldom figure as the first word of an entry (except in the phrase "in vitro"); where they do, they are found at their proper place in the alphabet.

In order to increase the efficiency of the Index, special care has been devoted to cross-references. Moreover, subjects have been brought under as many headings as possible. This of course results in a certain amount of redundant information, but it is felt that this is outweighed by the greater chance for the user of finding a particular subject he is interested in.

All the work on multicellular plants and on slime molds is brought together under one heading: "PLANT EMBRYOLOGY & MORPHOGENESIS (experimental & physiological)". All the work on unicellular organisms (including unicellular plants) is listed under the heading "UNICELLULAR ORGANISMS".

Genus and species names are not used in the entries, with the exception of the designation Homo for the human species. For various reasons it is impossible to provide a separate taxonomic index. Those who are looking for work on a specific taxonomic group are advised to start with the headings of a general nature, such as "Asexual reproduction", "Development", "Embryology", "Life cycles", "Metamorphosis", "Morphogenesis", "Plant embryology & morphogenesis", "Regeneration", "Reproduction", "Unicellular organisms", etc.

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—, substance in royal jelly, Hymenoptera
—, isolation from royal jelly & from silkworm, Hymenoptera
wing, Homoptera

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POLYPLOIDY
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Turbellaria

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see also Determination; Organization; Regulation

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Placentation(tion)
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pressure, Primates
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distribution of embryos in uterus, Rodentia
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Teleostei
Urodela

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Hensen's node, Aves
—, role in somite differentiation, Aves
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PRIMORDIAL GERM CELLS
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PROLIFERATION
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PRONEPHRIC DUCT
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MIK actomyosin, role in cell adhesiveness, Aves
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—, bio-, & histochemistry, Aves
—, uptake, embryo, immunofluorescence, Gastropoda
basic, oogenesis & early development, Aves
—, ribosomal, patterns, Diptera
—, blood, genetics & physiology, Insecta
—, brain, in neurological mutants, Aves
—, specific, effect of hormones, Aves
breakdown, relation with degenerating yolk granules, Gastropoda
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—, early development, Anura, Urodele
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cuticle & egg shell, Lepidoptera
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developmental genetics, Urodea
differentiation, Amphibia
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ORSINI
MERCIER

REBER
WILSON
TUCHMANN
MERCIER
BRINCK
TUCHMANN
BILLINGTON
BALAKRISHNAN
LAUGHAN
BILLINGTON
CHAMBOLLE
CHAMBOLLE

REBF.R

ORSINI

HUNT

REBF.R

JACOB
NICOLET
JACOB
NICOLET
GALLERA
VAEEK

ORSINI

HUNT

REBF.R

ORSINI

HUNT
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pattern formation, Amphibia, Hydrozoa
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pharynx, effect of various factors, Turbellaria
Phasmatida
polar, induction, Hydrozoa
Polyactea
Porifera
posterior, cytology, autoradiography,
Oligoactea
—, effect of cerebral ganglion, Oligoactea
potential, Oligoactea
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relation with asexual reproduction, Turbellaria
Turbinaria
—, immunology, Mammalia
Repilinia
retina, Teleostei
— & visual pathway, Vertebrata
—, autoradiography, Amura
—, from dissociated cells, in vitro, Aves
—, neural, Laceritilia
—, DNA & cell cycles, Urodela
—, transformation of pigment epithelium cells, Urodela
—, pigment epithelium & lens, metaplasia, Rodentia
—, epithelium, relation to cell cycle, Mammalia
—, ultrastructure & cytochemistry in vitro, Mammalia
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—, control by tissue interaction, Urodela
—, nervous system, Aterioidea
—, & territories of regeneration, Turbellaria
—, neurosecretion, Oligoactea
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—, ultrastructure, mineralization, Teleostei
Scorpionidea
—, skull, bone, Teleostei
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spine, Vertebrata
starving animals, cytology & cytochemistry, Turbellaria
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—, early stages, Amura
—, epidermis, Laceritilia
—, fin, origin of collagen, Amura, Urodela
—, rays, fine structure, Teleostei
—, polarity, Laceritilia
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—, effect of ultrasound, Lagormora, Rodentia
—, function of satellite DNA & macromolecules, Decapoda

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—, genital disk, Lepidoptera
limb, skeletal morphogenesis, Aves
—, wing bud, Aves

MARTHY
DEWES
WEBSTER
KIENY
AMPRINO

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REPRODUCTION (sexual)

see also Egg(s); Fertility (& sterility); Fertilization; Reproductive system; Spermatogenesis etc.

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—, artificial insemination, Homo
—, hypothalamus, Mammalia
Artiodactyla
—, as affected by mutants, Diptera
—, autorony, Diparya
—, space flight, Insecta
—, comparative biochemistry, Elasmobranchii
—, Malacostraca
—, effect of chemical agents, irradiation, Hymenoptera
—, endocrine glands, Aves
—, gonads, Aves
—, hormones & analogs, Insecta
—, space flight, Insecta
—, embryonic diapause, maternal endocrine glands, Mammalia
—, endocrinology & periodicity, Polyactea
—, male Orthoptera
—, environmental factors, Aves
—, estrus cycle, allonan-diabetes, Rodentia
—, gamete transport in female, Lagormora
—, Primates

Gastroptera
Homo, Rodentia
—, hormones, Teleostei
—, immunology, Homo, Mammalia
—, intrauterine contraceptive devices, mode of action, Primates, Rodentia
—, laboratory culture, Polyactea
—, macro-, physiology, Rodentia
—, maternal effect of cross-fostering, Artiodactyla
—, oötheca secretion, Blattariae
—, oviparous infections, effect on sperm, Lagormora
—, paedogenesis, Diptera
—, physiology, Blattariae
—, functional morphology, Orthoptera
—, Polychaeta
—, male, physiology, Rodentia
—, maternal effect of cross-fostering, Artiodactyla
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—, recognition of specificity, compound forms, Ascidiacea
—, relation to hypothalamus & hypophysis, Teleostei

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CAMEZIND
ULRICH
BARTH
HARRISON
DEAN
HOFMANN
BUTLER
ROBISON
STAY
WATANABE
NAKABAYASHI

BILQES
MARCEL
BRONSTED
HIRN
TOKIN

MOISEEVA
HUBER
KRAICER
SHAHAM

MANN
BOONE
MANN
BOURNESSL
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effects, Aves
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Teleostei
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dactyla, Rodentia
TOWERS
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tive agents, Amphibia
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dactyla
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SEGAL
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Gastropoda, Polychaeta
ANDERSON
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DESVEAUX
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KINALIDI
TIEDEMANN
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PLATIGORSKY
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Aves
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protozoan culture, glucoside synthesis,
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— — —, path., Artiodactyla
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— — study, Aves
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—, histocompatibility, experimental study, Aves
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—, growth, relation to behaviour, Dipitera
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—, in mouth parts, Heteroptera
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—, peripheral receptors, histochemistry, electron
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—, fine structure, regeneration, Nemertea
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—, histochemistry, Mollusca
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Bryozoa
DUBOIS

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Chondrostei
MARAUD

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SASAKI

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SACCU S VASCULOSUS

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Teleostei

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PINGANAUD LAVELLE ROBADERY SCHOWING
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GRAVER BERESFORD KOLLAR LIMBORGH
PUGAILA FRANK REYREL
CARIOIZIO TOEREN COULOMBRE SMIT
LATSHAW HALBA KANTOROVA POLEZHAEV
LANDER POOL ROYAL
REYREL FRANK PUNAGAUD
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PIJNACKER
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MERKLE
NELSON

HUCKINS

CLERMONT

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FRANKLIN
BIRCH
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SKULL (contd.)

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RADECKA
PIJNACKER
HARRISON
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TOKUYASU
GEORGES
MERKLE
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—, hepatoma, growth, circadian rhythm, *Rodentia*

—, control, *Rodentia*

—, relation to hypophysis, *Rodentia*

—, histogenesis in vitro, *Homo*

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—, initiation by *N-nitrosomethylurea*, *Amphibia*

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—, functional capacities, in vitro, *Rodentia*

—, liver, in vitro, *Rodentia*

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—, teratogenesis, *Rodentia*

—, renal carcinoma, differentiating, histochemistry & fine structure, *Rodentia*

—, RNA synthesis in vitro, effect of x-rays, *Homo*

—, teratocarcinoma, protein pattern, *Rodentia*

—, teratoma, experimental, *Rodentia*

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—, interstitial cell, organ & suspension culture, *Rodentia*

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—, virus, as tool in embryology, *Aves*

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I The scientific staff
As from January 1st, 1971 Dr. W. J. Ouweneel was appointed head of the Research Unit of Developmental Genetics.

II Annual Progress Reports
The report for 1970 is available on request. Earlier reports are also available still.

III Seventh International Research Group in Developmental Biology
The seventh international Research Group will meet at the Hubrecht Laboratory from January till July 1972. It will have nine members from the following countries: Argentine, Canada, Greece, India (2), Indonesia, Italy, Poland, and U.S.A. Part of the travel expenses of some of the members are covered by a grant from UNESCO.

IV International facilities
These facilities comprise the Central Embryological Collection and the Central Embryological Library, with its extensive reprint collection and its documentation and information services. Details pertinent to these facilities may be found in the information booklet distributed on a large scale in 1966. This booklet is available on request. A special leaflet describing the Central Embryological Library and its facilities is also available on request.
The I.S.D.B. intimates with deep regret the death of its meritorious Secretary-Treasurer Prof. E. Zwilling (Waltham, Mass.), and of its members T. Humphrey, M. Ichikawa, B. M. Patten, J. A. M. Runnström, and E. Witschi.

Upon the sudden and untimely death of Prof. Zwilling his office has been temporarily taken over by Dr. R. L. DeHaan (Baltimore, Md.). Dr. DeHaan will remain in office until the next General Assembly in 1973.

In 1970 the I.S.D.B. sponsored an event which was inadvertently overlooked in the Communications of that year (G.E.I.S., Suppl. 13, 1970). This was the “International Working Party on Crystallin Immunochemistry”, held in Edinburgh from June 23—July 6, 1970, and organized by Dr. R. Clayton.

In the past year the I.S.D.B. sponsored two Symposia. The first was on “Genetics of the Spermatozoon”, held in Edinburgh, August 16—21, and organized by Prof. S. Gluecksohn Waelsch and Dr. R. A. Beatty. The second was the “Lens Symposion” held in Utrecht, Netherlands on August 23—26. Prof. W. J. van Doorenmaalen was chairman of the organizing committee. The Symposion had 70 members from 11 countries; there were 12 local observers.

The I.S.D.B. at present has 506 members; 30 new members were admitted by the Board in 1971. A complete membership list appears below.

Proposals and spontaneous applications for membership are welcome at any time. The procedure and requirements for application are as follows:

a) Candidates for membership can be proposed or supported by two members at any time. The Board screens the applications once or twice a year.

b) The requirement for membership is that the candidate should have made a substantial contribution to the field of developmental biology. The Board decides whether a particular applicant meets this standard.

c) Proposals must be accompanied by a curriculum vitae and a list of publications of the candidate, and should be sent either to Dr. R. L. DeHaan, Dept. of Embryology, Carnegie Inst. of Washington, 115 W. University Parkway, Baltimore, Md. 21210, U.S.A. or to Prof. P. D. Nieuwkoop, Hubrecht Laboratory, Uppsalalaan 1, Universiteitscentrum “De Uithof”, Utrecht, Netherlands.

Utrecht, January 1972

The Adjunct Secretary-Treasurer, P. D. Nieuwkoop
Membership List of the I.S.D.B.
(alphabetical order, with years of election; * emeritus members)

This list was drawn up on December 1st, 1971. For full addresses see "General Embryological Information Service", vol. 14, 1971 and supplement to vol. 14, 1972.

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R. D. Allen, Albany, N.Y., '57
E. C. Amoroso, Cambridge, Eng., '60
R. M. Amprino, Bari, '60
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G. Andres, Mainz, '57
Th. S. Argyris, Syracuse, N.Y., '70
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A. Bart, Villeneuve D'Ascq, '70
L. G. Barth, Woods Hole, Mass., '48
P. G. Bartels, Tucson, Ariz., '70
Mrs. L. J. Barth, Woods Hole, Mass., '69
R. A. Beatty, Edinburgh, '56
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S. Bieber, Teaneck, N.J., '70
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D. P. Bloch, Austin, Tex., '69
R. F. Blount*, Galveston, Tex., '60
C. W. Bodemer, Seattle, Wash., '70
D. Bodenstein, Charlottesville, Va., '56
E. J. Boell, New Haven, Conn., '57
B. Boilly, Villeneuve D'Ascq, '70
J. T. Bonner, Princeton, N.J., '60
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P. J. Bryant, Irvine, Calif., '72
C. Burdon-Jones, Townsville, Qld., '60
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R. D. Cahn, Seattle, Wash., '69
J. M. Cairns, Springfield, N.Y., '69
R. Cambar, Talence, '57
E. C. Cantino, East Lansing, Mich., '70
E. W. Caspari, Rochester, N.Y., '60
C. Y. Chang, Peking, '57
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H. B. Chase, Providence, R.I., '60
P. S. Chen, Zürich, '60
D. Chen, Israel, '72
G. Chieffi, Napoli, '64
Chuang Hsiao Hui, Shanghai, '48
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U. Clever, Lafayette, Ind., '69
S. Cohen, Nashville, Tenn., '64
J. R. Coleman, Providence, R.I., '70
A. Colleen, Paris, '69
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G. Colombo, Ferrara, '60
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Mrs. L. H. Colwin, New York, '60
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M. A. Corner, Amsterdam, '72
D. P. Costello, Chapel Hill, N.C., '48
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M. Crippa, Arco Felice, Naples, '70
Y. Croisille, Nogent-sur-Marne, '66
P. S. Crowell, Bloomington, Ind., '60
A. S. G. Curtis, Glasgow, '69
A. M. Dalq*, Bruxelles, '33
H. C. Dalton, University Park, Pa., '70
V. D'Amelio, Palermo, '64
F. Dameron, Paris, '70
Mrs. J. C. Dan, Tokyo, '57
K. Dan, Tokyo, '57
J. C. Daniel, Jr., Knoxville, Tenn., '70
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Sir G. R. De Beer*, Bex, Switz., '38
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G. Eguchi, Nagoya, '69
H. Emanuelsson, Lund, '72
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G. Filogamo, Torino, '60
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G. Forti, Bari, '70
L. Franklin, Covington, La., '70
M. Friedländer, Jerusalem, '70
T. Fujii, Tokyo, '60
C. M. Fulton, Waltham, Mass., '70
M. Furuya, Tokyo, '70
P. J. Gaillard, Leiden, '60
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J. Gallera, Genève, '57
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Amiela Globerson, Rehovoth, '70
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Y. Hayashi, Tokyo, '60
W. G. Heim, Colorado Springs, Colo., '66
W. A. Hemmings, Bangor, Wales, '69
Miss S. Hennen, Milwaukee, Wis., '70
H. Herrmann, Storrs, Conn., '60
O. Hess, Düsseldorf, '69
S. R. Hilfer, Philadelphia, Pa., '71
Miss G. W. Hinsch, Coral Gables, Fla., '70
Y. Hiramoto, Misaki, '60
L. Hoadley*, Cambridge, Mass., '48
H. Holter*, Copenhagen, '57
J. K. F. Holtfreter*, Rochester, N.Y., '36
S. Höristadius*, Uppsala, '48
C. Horváth, Budapest, '72
Y. Hotta, La Jolla, Calif., '70
Ch. Houillon, Paris, '67
J. M. T. Hultin, Stockholm, '56
R. R. Humphry*, Bloomingden, Ind., '49
T. D. Humphreys II, La Jolla, Calif., '70
J. Ishida, Urawa, '60
M. Ishikawa, Toba, '70
A. G. Jacobson, Austin, Tex., '70
D. C.-O. Jacobson, Uppsala, '69
L. F. Jaffe, Lafayette, Ind., '70
J. Jansen*, Oslo, '60
Miss A. G. Johnen, Köln, '64
A. D. Jost, Paris, '56
A. J. B. Källén, Lund, '60
P. P. Kallio, Turku, '70
H. Kanatani, Tokyo, '71
R. E. Kane, Honolulu, '72
Y. Kanoh, Akkeshi, '60
S. Karasawa, Montreal, '69
I. Kawakami, Fukushima, '57
K. Keck, Tucson, Ariz., '70
L. H. Kedes, Cambridge, Mass., '71
N. E. Kemp, Ann Arbor, Mich., '57
A. Keynan, Jerusalem, '70
Mrs. M. A. Sengel Kiény, Grenoble, '64
R. C. King, Evanston, Ill., '70
T. J. King, Washington, D.C., '60
V. Kiortsis, Athens, '69
A. O. Klein, Waltham, Mass., '70
N. W. Klein, Storrs, Conn., '70
Mrs. U. Kocher (Becker), Heiligenberg, '66
General Developmental Biology (see also 39, 67, 74)

Textbooks

1

Contents: 1. Introduction; 2. Sources of hormones related to morphogenesis; 3. Growth and mitosis; 4. Moulting and metamorphosis; 5. Control of morphogenetic hormones

Part I of this book appeared in 1962 and bore the subtitle "Kinetic and metabolic hormones". The present volume treats of the "morphogenetic" hormones of both invertebrates and vertebrates in so far as they are concerned in the control of growth, moulting, and metamorphosis. The hormones related to reproduction and regeneration are only touched upon occasionally in this volume. Man and the domestic animals are usually only referred to in passing.

Because of the comprehensive and rigorously systematic treatment of the subject matter the book is of great value to developmental biologists and advanced students, both as a stimulating text in its own right and as a source of important references. Of particular significance is the use of clearly defined hormone nomenclature throughout the book, and the emphasis on the functional integration of endocrine organs with each other and with the nervous system in chapter 5.

Chapter 1 devotes much attention to problems of definition. In chapter 2 the endocrine glands are grouped according to their embryonic origin from either ectoderm, endoderm, or mesoderm. Chapter 3 first treats effects on general growth, and then effects on mitosis specifically. At the end of chapter 4 the general features of morphogenetic hormones are discussed, such as species specificity and differential tissue responses; this is followed by a discussion of the possible mechanisms of hormone action.

The book is well produced and is illustrated with carefully selected drawings executed in uniform style, and with a few photographs. Each chapter has its own bibliography. For most subjects the most recent literature cited dates from 1966. The author stresses that the reference lists are not exhaustive. The book contains a useful glossary.

2
AN INTRODUCTION TO EMBRYOLOGY. 3rd edition. 1970. By B. I. BALINSKY
W. B. Saunders, Philadelphia. 743 pp., 457 figs., 21 tabs., subject index. $10.00, £4.5 s. 0d.

This is the third edition of a successful students' textbook first published in 1960. The first edition was reviewed in Gen. Embryol. Inf. Service, suppl. to vol. 8, 1960, p. 26. Much of what was said then still applies, but although the author's approach was novel in 1960, one now fears that the book is being superseded by other similar books written from a more modern point of view. Moreover, the book which was rather long for an introduction even then, has now grown to a size which raises doubts as to its usefulness for the time-pressed biology student of today. No doubt much of the older factual and theoretical subject matter could have been weeded out, and some of the space used to update some sections. For instance, the chapter on regeneration, however appropriate in a book of this kind, is far from up-to-date. More examples could be cited.

Much new material was incorporated into this edition, but not in a very consistent manner, and the evidence cited is often rather old. The new material relates particularly to the storage and transmission of genetic information, to genetic factors in embryogenesis, to nucleocytoplasmic interactions, and to the control of differentiation and growth.

The book has been produced with the utmost care and the illustrations are excellent. The bibliography is long but shows surprising gaps. It would also have benefited from the separate listing of books and important reviews.

In the opinion of the present reviewer this book, despite its conventional title, is one of the most thoughtful, inspiring, and original textbooks of developmental biology to have appeared in recent years. It is intended primarily for advanced undergraduate or beginning graduate students, and the student who has read and digested it will have attained as firm a grasp of modern developmental biology as he could wish for. The field is defined very broadly and includes subcellular and cellular aspects, genetic aspects, plant morphogenesis, asexual reproduction, regeneration, and metamorphosis. The examples are chosen from a variety of taxonomic groups much wider than is usually represented in students’ textbooks. The dominant theme is that of the self-assembly and directed assembly of organized substance.

The main impression remaining after browsing through the book is that of an author who is first and foremost a knowledgeable general biologist with a very sound insight and a good feeling for the proper balance of fact and theory. As the table of contents will show the book’s organization is quite original. It begins with a discussion of molecular and subcellular self-assembly which is highly unusual in books of this kind. The notions of polarity, gradient, and morphogenetic field are introduced at an early stage and on a broad biological basis; it is unexpected but refreshing to see the latter concept discussed initially in connection with the plant meristem. The chapter on the egg cortex contains an undogmatic discussion of “mosaic” and “regulative” egg types. In the chapters on the limb and the eye, embryonic development and regeneration are treated as one continuous whole. In ch. 20 much attention is devoted to the insect imaginal disc system. The last chapter, via a discussion of teratomas and cell transformation, takes the reader back full circle to the beginning of the book. These are only a few highlights of this remarkable book.

Each chapter is concluded by a series of “concepts” or condensed conclusions stated in general terms, and by a well-chosen list of readings. The illustrations are numerous and very good indeed. They supplement rather than support the text; to this end they are provided with lengthy captions. This aspect of the book is the only one that is not wholly satisfactory: often the captions are still too brief to be completely intelligible without support from the text.

The book is produced with great care and the layout, helped by the square page format, is esthetically very pleasing. The index is very detailed, but it is a pity that the authors mentioned in the figure captions are not included.

Editions Médicales Flammarion, Paris. 366 pp., 182 figs., 5 tabs., subject index. Fr. 52 (paper)

This is the first volume of a two-volume textbook of embryology for medical students. Vol. I is by Dollander, while vol. II will be by Fenart and will be devoted to special human embryology. In the present volume one chapter (that on the hereditary material) was written entirely by A. Duprez, while another one (that on general concepts relating to congenital anomalies) was largely edited by this author. The book has a laudatory preface by Prof. A. M. Dalcq.

The book is remarkable in several respects. It is in two parts, “General comparative embryology” and “General human embryology”. The most striking feature of part one is perhaps
the criticisms that have been levelled at his own ideas as formulated in his previous works in English (particularly by Apter and Wolpert, who have questioned whether information theory is at all relevant to development).

The last two chapters are mainly philosophical in character and discuss the various concepts of finality, starting with Aristotle and Kant. Much stress is placed on the complementarity of causal, historical, and final descriptions or explanations of natural phenomena.

In the reviewer's opinion this is an important book that would merit translation into English.

Invertebrate Development (general) (see also 54, 55, 64, 70, 84)

_Treatises_

10

INVERTEBRATE EMBRYOLOGY, translated from the Japanese by J. C. Dan. 1968. Edited by M. KUMÉ and K. DAN

Nolit Publishing House, Belgrade. 621 pp., 385 figs., 16 tabs., author, taxonomic, and subject indexes. $ 6.00


Complete systematic accounts of invertebrate embryology are very rare, and the most recent one is more than thirty years old (Korschelt and Heider, 1936). Therefore this book will be very welcome. It is the translation of a collaborative treatise written by 18 Japanese embryologists and first published in Japanese in 1957. Understandably, no attempt has been made to update the book, the translation being a major achievement in itself. No one could be better qualified to undertake this work than Dr. Jean Clark Dan, the wife of the second editor. The translation was made on behalf of the U.S. National Library of Medicine and the U.S. National Science Foundation.

It is impossible to review the book in detail here. This will be the task of specialists in the field. We confine ourselves to a few general remarks. The contents are arranged in strict taxonomic order, with the exception of Chapter 1 (by the editors, 70 pp.), which is a general and comparative review of gametogenesis, fertilization, cleavage, germ layer formation, egg organization, and the role of chromosomes in development. This chapter also contains a section on methods for the collection of eggs and sperm in the laboratory.

The mode of subdivision of the systematic chapters (11 in all) is rather variable, but all chapters treat not only the early stages but also the larval stages and metamorphosis, if any, in the group concerned.

Throughout the book some of the main experimental-morphological and physiological data are discussed along with the descriptive data. The emphasis in this treatment is on "classical", relatively old data, and of course no data more recent than about 1955 are included. Still it is of great value, particularly to beginning students, that one thus gets a general impression of the sort of problems and experimental approaches peculiar to experimental and physiological embryology. However, the book is hardly suitable as a work of reference for this part of the subjects.

All chapters have extensive bibliographies containing titles in all languages. Naturally many papers cited are by Japanese workers, but this is only an advantage, since one gets at least an idea of this work, which was often published in Japanese and therefore is not easily accessible.

The work is profusely illustrated, mainly with good line drawings. The quality of paper and print is reasonable, but the cover, though sturdy enough, is extremely ugly. This is compensated, however, by the very low price.
11
EXPERIMENTAL EMBRYOLOGY OF MARINE AND FRESH-WATER INVERTEBRATES. 1971.
Edited by G. REVERBERI
North-Holland, Amsterdam, American Elsevier, New York. 610 pp., 301 figs., 26 tabs., 13 pls., subject and author index. ISBN 0 7204 4080 7. 0 444 10065 2. $ 28.—, 233 s., H.fl. 100.—

Contributors: Arnold, Brachet, Clement, Czihak, Green, Hess, Höorstadius, Mergner, Reverberi, Skaer

This is a collaborative treatise of a kind that has never been tried before. Never has so much information on the experimental and physiological embryology of invertebrates been brought together in one book. Embryologists everywhere will be thankful to the editor and the authors for supplying this long-needed supplement to the excellent descriptive texts available. The only thing one regrets is the decision to restrict the book to the artificial category of aquatic invertebrates. It is difficult to see why it was necessary to exclude, e.g., the insects and the spiders, on which equally important work has been done. The only reason one can think of is that of space.

The original intention was to restrict each chapter to one species, but the majority of contributors found this impossible — very fortunately, as it turns out. As it is, of the 14 chapters only four are devoted to a single genus (Mytilus, Ilyanassa, Dentalium, Amphioxus). The other chapters deal with the following groups: Cnidaria, Ctenophora, Planariidae, Annelida, Nemertini, fresh-water Gastropoda, Cephalopoda, Crustacea, Echinodermata, and Ascidiae.

Wherever possible, information has been included on the techniques for obtaining animals and eggs, fertilization, decapsulation, etc., and of course normal development is usually given ample attention before turning to experimental data.

The book is well printed and profusely illustrated with line drawings, photomicrographs, and electron micrographs. The latter are not always of the highest quality, but it is difficult to judge whether this is due to reproduction or to the quality of the originals. Each chapter has its own bibliography.

Monographs
12
OVARIAN DEVELOPMENT IN DROSOPHILA MELANOGASTER. 1970. By R. C. KING

Contents: I. The preadult development of the female reproductive system, II. The structure and functioning of the reproductive system of the adult, III. Cell division, migration, and differentiation within the germarium, IV. The genetic control of cystocyte divisions. V. The behavior of the oocyte chromosomes, VI. Cellular interactions during the development of the egg chamber

The title of this research monograph is definitely misleading, because the word "development" is taken to include the adult ovary and the final stages of oogenesis. In fact, most of the subject matter deals with oogenesis and its genetic and epigenetic control. The author has been active in this field for nearly two decades and has greatly contributed to it. The book bears the mark of this, in that it perhaps leans too heavily on the author's own work and that of this associates. Nevertheless, many workers on oogenesis, not only of Drosophila, will be thankful to him for bringing together a wealth of data in logical order, while many geneticists will welcome the book as a work of reference on such subjects as meiosis, crossing-over, and chromosome structure and behaviour.

The book is sufficiently characterized by the table of contents given above. Many of the numerous illustrations are superb line drawings taken from publications of the author and his associates; they are based on light and electron micrographs. There is also a cytological and genetic map of the Drosophila salivary gland chromosomes incorporating some of the latest data from Lindsley and Grell (1968).

The book is well produced and has a 20-page bibliography.
pages longer. New chapters were added on gene action in the egg, on cell migration, sorting out and aggregation, and on the migration of primordial germ cells. These show the same excellence of style as the original parts (which were occasionally enlarged).

The new chapters have illustrations of the same good quality as the others, which have all been retained. A brief list of readings has been added.

19

Contents: 1) Patterns, problems, and principles, 2) Origin of the fertilized egg, 3) Sorting the materials of the egg: formation of germ layers, 4) Molding the body form, 5) Principles of development: the conceptual framework for developmental analysis, 6) Larval forms and metamorphosis, 7) Regeneration, 8) Genetic control of development, Appendix A: Mitosis and meiosis, Appendix B: Genetic control of protein synthesis

This book was written mainly for the use of lower-level students who have some elementary knowledge of general biology and chemistry. The text is restricted to the vertebrates and is relatively simple, covering only a minimum of fact and theory. Much of the subject matter has been adapted from the author’s “Animal Morphogenesis” (1968), which was reviewed in Gen. Embryol. Inf. Service 13, 1969, p. 316. The favourable opinion expressed at that time also applies to the present book. Its didactic qualities are outstanding.

Chapters 6 and 7 are entirely new, while the other chapters have been adapted from the previous book. Also new are the two appendixes, and a good glossary of embryological terms and taxonomic names mentioned in the text. Each chapter has a summary emphasizing the principal points covered. The summaries are followed by study questions aimed at stimulating the student’s own thought, and by lists of related general readings and works cited in the text. At the end of the book there is a list of books and similar reading matter.

The numerous illustrations, both photographs and line drawings, are of outstanding quality and unity of style. The figures have sometimes extensive explanatory captions. Type and lay-out of the book are modern and very pleasing, but rather wasteful due to the type area covering only 2/3 of a page. This is reflected in the price.

Monographs
20

Contents: I. Evolution (= development) of the hen’s oöcyte (the yolk) until egg hatching; II. Morphological organization of the ripe hen’s oöcyte (the yolk); III. Biochemical organization of the ripe hen’s oöcyte (the yolk); IV. Physiology of the yolk. On the significance of the morphological and biochemical organization of the oöcyte (the yolk) for the early embryonic development

Illustrated with photographs, coloured drawings and black-and-white drawings; bibliography of nearly 800 titles (64 in Russian or Bulgarian).

Symposium reports
21
A DISCUSSION ON DETERMINATION OF SEX. 1970. Edited by G. W. HARRIS and R. G. EDWARDS


Contributors: Beatty, Chan, Dubois, Edwards, Ford, Fredga, Goy, Harris, Jost, Lyon, Mittwoch, Neumann, Peters, Polani, Price, Race, Short, Tarkowski

This issue of the Philosophical Transactions, which is available separately from the Royal Society of London, contains the proceedings of a Discussion held in London in May 1969. The
organizers brought together a truly representative group of specialists in the field of sex determination.

The 18 papers read and the discussions following them are recorded. Most papers are a happy mixture of review and research report, prepared with great care and subdivided into surveyable sections. They range in length from two to 22 very large pages, and are ideally suited to update one's knowledge of the major aspects of the field, such as the genetics and phenogenetics, the embryology, and the endocrinology of sex determination and differentiation. Some attention is also devoted to neural, psychobiological, clinical, and reproductive aspects. The treatment is largely restricted to the vertebrates.

Most papers have extensive bibliographies, and many are beautifully illustrated. All photomicrographs are printed on glossy paper. There are no indexes. The price of the issue seems excessive.

22
THE POST-NATAL DEVELOPMENT OF PHENOTYPE. 1970. Edited by S. KAZDA and H. DENENBERG
Academia, Prague and Butterworths, London. 420 pp., 224 figs., 54 tabs., subject index. ISBN 0 407 96250 6. £ 8.—

This volume contains the proceedings of a Symposium held in Liblice in September 1967. It had 50 participants, half of whom were Czechs, while twelve came from the U.S.A. and the remainder from various other countries. Most of the participants were physiologists, endocrinologists, and pharmacologists, but paediatricians and psychologists were also present. The Symposium therefore was a truly interdisciplinary one. Its chairman was M. A. McCance, Cambridge.

The 32 research papers deal with an extremely broad range of experimental approaches using mainly laboratory and domestic mammals; two papers deal with the human subject. Most of the research reported was on the effects on postnatal growth, development, and behaviour of a variety of factors acting from just before to some time after birth. Among the factors investigated were weaning, handling and some other forms of stimulation and stress, hormone injection, nutrition, and some drugs. Their action on the organism as a whole as well as on various organ systems was studied. Most papers are followed by group discussions.

A key concept playing a role in studies of this kind is that of critical periods. This concept is briefly discussed in a foreword by J. P. Scott. The book is concluded by a lengthy general discussion with contributions from M. A. McCance, J. P. Scott, C. A. Barraclough, and many others.

The book is well produced and adequately illustrated. It has no indexes to authors or contributors.

Development of Mammals and Man (general) (see also 33, 43-46, 49-53, 56-58, 76-78, 87, 88, 98, 99)

23
Univ. de Los Andes, Fac. de Med., Merida. 418 pp., 334 figs. (paper)

This book is the revised and considerably enlarged 2nd edition of a work first published in 1961. Its contents consist almost entirely of figures, and it was conceived for use in classes of human embryology in conjunction with lectures and text-books. Because it has no text it cannot be used on its own. The main topics illustrated are the development and anatomy of the male and female genital organs, spermatogenesis and oogenesis, endocrine relations in genital function, the mammary gland, fertilization, implantation and placentation, the development of external body form, normal pregnancy and birth, multiple pregnancy and fetal reduplications. The development of the organ systems is not included, but gross malformations are duly considered.

The figures consist of line drawings and photomicrographs. Most of the former are composite, and many were made by the author himself, particularly the numerous more or less schematical drawings illustrating the multiple types of interrelations in reproduction and gross development. The line drawings are on the whole of satisfactory quality. The photographs are unfortunately printed on ordinary paper and are generally unsatisfactory.
The following species are considered successively: swine, horse, cow, and sheep (epitheliochorial), dog, cat, vampire bat (endotheliochorial), and man, mouse, rabbit, and guinea pig (haemochorial). The atlas consists of 30, mostly composite, full-page plates comprising a total of 104 figures. There are three types of figures: low-power light micrographs, high-power light micrographs (osmium-fixed 1 μ sections stained with toluidine blue), and electron micrographs. Thus a good transition from lower to higher levels of magnification is achieved.

After a four-page general introduction there are brief introductions for each of the main three placental types, while the plates have extensive explanatory legends.

The figures are on the whole of good quality, although the electron micrographs are sometimes rather grey in tone. The book as a whole is produced with great care. It is concluded by a five-page bibliography and a good subject index.

30
THE HUMAN PLACENTA. 1970. By J. D. BOYD and W. J. HAMILTON

Contents: I. Historical survey; II. Terminology; III. Age of embryos and foetuses; IV. Early human development; V. The implantation of the blastocyst and the development of the trophoblast up to the somite stage; VI. Villous stages (thirteen to twenty-one days); VII. Somite stages (twenty-thirty days) (Streeter’s horizons-X to XIV); VIII. General description of specimens; IX. Structure and terminology of placental lobes and chorionic villi; X. Growth of placenta; XI. Trophoblast; XII. Specializations of the trophoblast; XIII. Basal plate and placental septa; XIV. Foetal blood vessels of the placenta; XV. Stroma of villi; XVI. Vessels of villi; XVII. The utero-placental circulatory system; XVIII. Intervillous space; XIX. Placental fibrin and fibrinoid; XX. A medley of themes; XXI. The placenta in multiple pregnancy; XXII. Envoi

Two of the three authors of the famous Hamilton, Boyd, and Mossman textbook “Human Embryology” have now given us a book that promises to become an equally well-known classic. It is sad that Prof. Boyd did not live to see the book in print.

The book is a truly monumental achievement, but full justice can only be done to it by a reviewer who is himself an expert in the field. Therefore a few remarks must suffice here. The book is largely descriptive in character, but functional aspects are considered throughout, and more particularly in chapter XX, which considers the chemical composition of the placenta and its relation to transport of substances, endocrinology, and immunology. For further details of the plan of the book the reader is referred to the table of contents above.

The book is printed in large format on heavy quality glossy paper, and is sturdily bound. An outstanding feature is its numerous illustrations: drawings, gross photographs, photomicrographs, and electron micrographs; many of these are in colour, and all of them are of superb quality. The bibliography is largely restricted to the 20th century and covers 25 closely-printed pages.

Collections of papers
31
I. FORTSCHRITTE AUF DEM GEBIETE DER PLACENTA-PHYSIOLOGIE
II. NEUE FORSCHUNGSERGEBNISSE UBER DEN MUTTERLICHEN PLAZENTAKREISLAUF.
Karger, Basel. Fortschritte der Geburtshilfe und Gynäkologie, Vol. 41. 123 pp., 50 figs., 1 tab. $ 7.80, 65 s., DM 32.50 (paper)

Contributors: Banniza von Bazan, Kollath, Lemtis, Pohle, Puppe, Wilhelmi

This slim volume contains four contributions of two different natures. The first is a review by H. Lemtis of recent literature on placental physiology covering a period of about five years (1964-68). The three other contributions are research reports: one on directional streaming of maternal blood in the human placenta (Lemtis, Banniza, Wilhelmi, Kollath, Pohle, Puppe); one on the variable blood supply of the maternal intervillous space system in the human placenta (Lemtis, Puppe, Wilhelmi); and one on the velocity of the blood stream in the intervillous space system (Lemtis, Puppe, Wilhelmi). The results were obtained largely
by means of röntgen cinematography. All contributions have extensive bibliographies, that of the first one consisting of more than 250 titles.

The book is well printed and beautifully illustrated; many of the photographs are röntgen cinematographs.

Teratogenesis (see also 22, 26, 28, 52, 57, 58, 60, 77)

Monographs

32
W. B. Saunders, Philadelphia. Major Problems in Clinical Pediatrics, vol. 7. 383 pp., 618 figs., subject index. $16.00, £ 6. 16 s. 0 d.

This book is of almost exclusive interest to pediatricians. The reason why it is reviewed here is that, apart from the main subject matter, it contains a separate chapter devoted to normal morphogenesis.

The first two chapters of the book are entitled "Single syndromic malformations resulting in secondary defects" (17 pp.) and "Dysmorphic syndromes of multiple primary defects" (277 pp.). The first chapter contains diagrams of the hypothetical embryonic origins of the malformations in question. Chapter two contains a virtually complete listing of all syndromes known up till 1968, and a set of summary tables which are meant to assist the clinician in differential diagnosis.

Chapter three is entitled "Morphogenesis" (28 pp.) and begins with a summary view of overall human embryonic and fetal development. Then follow sections illustrating aspects of the morphogenesis of the eye and lens, the kidney, the limbs, the thyroid, and the pituitary. The chapter is concluded by a table listing the embryonic processes affected and the latest possible time of causation of some malformations that represent incomplete stages in morphogenesis. The book is concluded by chapters on genetics and genetic counseling, and on minor malformations.

The book is well printed and is profusely illustrated, mainly with photographs. In chapter three these are mostly micrographs of reasonable but not excellent quality. On the cover-papers there appears a useful chart of the chronology of normal human development. References are interspersed throughout the text.

Dissertations

33
THE NORMAL PALATE AND INDUCED CLEFT PALATE IN RAT EMBRYOS, an in vivo, in vitro and autoradiographic study on embryological development. 1969. By R. NANDA
M.D. thesis, Nijmegen. 120 pp., 65 figs., 13 tabs.

Normal development of secondary palate; teratogenic effects of vitamin A and Dexamethasone explants from normal and drug-treated mothers; explants treated with drugs in vitro; autoradiography using $^{35}S$ and $^3H$.

Symposium reports

34
CONGENITAL MALFORMATIONS. 1970. Edited by F. C. FRASER and V. A. McKUSICK, Co-Editor R. ROBINSON
Excerpta Medica, Amsterdam. International Congress Series No. 204, 466 pp., 141 figs., 97 tabs., author and subject indexes. ISBN 90 219 0135 8. $27.50, £ 11.10.0


This magnificently produced book contains the proceedings of the Third International Conference on Congenital Malformations held in the Hague, Netherlands, 7-13 September,
1969. The conference was attended by a vast number of participants from all over the world, and appears to have been very well organized. The participants were not only teratologists and clinicians, but also developmental biologists, which made for a very broad scope of approach. The discussions held at the Conference are not recorded.

After the opening session the conference started with a Symposium entitled “Developmental Biology 1969”. This was in two parts: 1) The biochemistry of differentiation (papers by Church, Hess, Papaconstantinou, Stern and Schimke), and 2) Control mechanisms in development (papers by Siniscalco, David, Hay, L. Weiss and Abercrombie). Next came five sessions, respectively devoted to the uterine milieu and early embryo (3 papers), early embryo — exogenous factors (3), birth defects in man (10), prospective studies — a progress report (3), and management — present and future (6).

Next followed a number of concurrent discussion and free paper sessions, which are represented in the book by brief summaries written by the session chairmen. Among these the following may be mentioned: Molecular genetics (Ursprung); Mechanisms of teratogenesis (Wilson); and The embryology of malformations (Langman). The Conference was closed by a summing-up session in which six participants spoke. One of them was C. L. Markert, who talked about the contributions of developmental biology to the understanding of congenital malformations.

The book is beautifully printed and very well illustrated. It has a list of authors, a complete list of participants, and subject and author indexes. The latter only gives the authors of invited papers; it is a pity that the authors of free papers were not included. It is not clear why a book with a large prospective market should be so expensive.

35
METHODS FOR TERATOLOGICAL STUDIES IN EXPERIMENTAL ANIMALS AND MAN. 1969. Edited by H. NISHIMURA and J. R. MILLER
Igaku Shoin, Tokyo; Pitman Medical, London. 328 pp., 110 figs., 62 tabs., subject index. SBN 272 75994 5. 210 s.

Contributors of lectures: Asling, Brent, Dempsey, Fraser, Froehlich, Hayashi, Makino, J. R. Miller, R. W. Miller, Murakami, Nomura, Sever, Stevenson, Takano, Uno, Warkany, Wilson

This book contains the proceedings of the Second International Workshop in Teratology held in Kyoto in April, 1968. Apart from the contributors listed above it was attended by a number of observers from all over the world, who took part in the discussions.

The nature of the subject matter in the book is threefold, viz. 17 lectures, 6 “demonstrations”, and 11 “exhibitions”. The lectures deal with a variety of subjects and material (man, other primates, and laboratory mammals), Several are comparative in scope, placing human data next to those on animals. At least nine of them are of direct interest to experimental teratologists. All are in English and about half of them are followed by brief discussions.

Most “demonstrations” cover about five pages and are devoted to various methodological, technical, and diagnostic aspects of teratology. The longest one (18 pp.) is an interesting comparison of normal and abnormal gross development in man and laboratory mammals by H. Nishimura and H. Yamamura. The “exhibitions” are brief outlines of exhibits shown during the workshop; several of these extend material presented in the lectures.

Apart from the bibliographies of the lectures there is a selected classified list of books and review articles on embryology and teratology. The book has a good subject index but no author index or list of participants. It is well printed and well illustrated. No attempt has been made to correct the English of the non-Anglo-American speakers. The price of the book seems excessive, perhaps due to the use of heavy-quality glossy paper.

36
U.S. Atomic Energy Commission, Oak Ridge, Tenn. AEC Symposium Series vol. 17. 1040 pp., 391 figs., 184 tabs., subject index. $ 3.00 (paper)

This large volume contains the proceedings of a Symposium held in Richland, Wash. in May 1969. It was attended by about 200 scientists from the U.S.A. and eleven other countries.
Attention was focussed on late prenatal and early postnatal mammalian development. The preimplantation period and the period of organogenesis were largely excluded, and studies on non-mammalian systems were included only inssofar as they yielded information considered to be of fundamental importance.

The 78 papers read at the Symposium are grouped in seven sessions as follows: 1) Cross-placental transfer of radionuclides (13 papers); 2) Radionuclide metabolism by the neonate (6); 3) Radiation effects — fetal (13); 4) Radiation effects — perinatal (21); 5) Irradiation of perinatal human populations (6); 6) Radiation effects — CNS (11); 7) Mechanisms of differential radiosensitivity (8). Particularly sessions 1, 3, 6, and 7 contain many papers that are of interest to developmental biologists. Most papers are followed by brief discussions. Several sessions are concluded by chairman's remarks. There is a lengthy Symposium prologue by T. R. Noonan and an epilogue by M. R. Sikov.

The book is well printed and adequately illustrated. The list of participants contains only those members not presenting papers. The absence of an author index is badly felt. The paper cover is insufficient for a book of this size; publication in two volumes would have been better. The price of the book is surprisingly low. It is available as CONF-690501 from Clearinghouse for Federal Scientific and Technical Information, National Bureau of Standards, U.S. Department of Commerce, Springfield, Virginia 22151, U.S.A.

Pathology, Cancer (see also 22, 26, 28, 36, 52)
Treatises
37
Butterworths, London. 655 pp., 152 figs., 18 tabs., subject index. ISBN 0 407 17601 2. £ 11.—

The second edition of this book appeared in 1963 and was reviewed in General Embryological Information Service, Supplement 10, 1964. The book is not intended as a compilation but as an approach to perinatal disease which integrates basic biological thought with clinical practice. The present edition is about 100 pages longer than the second and many parts have been rewritten. The subdivision into chapters has remained unaltered.

The book is now so well known that it may suffice to list the major additions. These concern the following topics: chromosomes in foetal malformation and abortion; developmental immunology and immunology of the placenta; infarct-like placental lesions; the assessment and significance of intra-uterine growth retardation; respiration and resuscitation, and finally rubella infection.

The number of illustrations, particularly of original photographs, has been extended. The chapter bibliographies have been revised and updated; many of the older titles have been replaced by newer and more accessible ones. Finally, the subject index has been considerably expanded.

Regeneration, Repair, and Renewal (see also 8, 62, 63)
Treatises
38
CELLULAR AND MOLECULAR RENEWAL IN THE MAMMALIAN BODY. 1971. Edited by I. L. CAMERON and J. D. THRASHER

Contributors: Adrian, Bernard, Buetow, Cameron, Lehninger, Leppi, Sabatini-Smith, Slavkin, Thrasher

Although much of the subject matter of this collaborative treatise is peripheral to developmental biology, several of the chapters devote attention to problems of morphogenesis and cellular differentiation in connection with the main subject. We will restrict ourselves mainly to mentioning these chapters.

A brief chapter by D. J. Lehninger outlines the techniques available for studying cellular and molecular renewal. The chapter by I. L. Cameron on cell proliferation and renewal in the mammalian body is of interest mainly because of its classification of cell populations based on proliferative behaviour, and its section on the control of proliferation. Two chapters by
J. D. Thrasher, one on RNA synthesis and one on protein synthesis, are noteworthy because of the discussion of differentiating systems such as the erythroid system and the lens. The second of these chapters moreover has a brief section on the control of cell division and differentiation. Finally, a chapter by H. C. Slavkin deals with the dynamics of the interactions between extracellular and cell-surface proteins, and particularly with the role of such interactions in the control of morphogenesis and differentiation in a variety of organs. The other chapters deal with DNA, lipids, carbohydrates, and calcification.

The book is well produced and illustrated, and the subject index is very detailed.

**Monographs**

39

REGENERATION: key to understanding normal and abnormal growth and development. 1970. By S. M. ROSE

Appleton-Century-Crofts, Meredith Corporation, New York. 276 pp., 45 figs., combined author, taxonomic, and subject index. $ 8.80

Contents: I. Genetic theory of cellular differentiation; II. Spatial tissue relationships in the control of lens regeneration in the eyes of salamanders; III Polarized control of regeneration in the amphibian limb; IV. The transport of messages controlling growth and differentiation in plants; V. Protozoa — polarized control of differentiation within the cortex of single cells; VI. Regeneration in worms — neural control of polarized gradients of differentiation; VII. Regeneration in coelenterates; VIII. The origin and operation of polarized control in embryos; IX. Tumor formation — a case of never-completed regeneration

This book is written in the form of a series of essays. The connecting thread is the author's theory of polarized inhibitory control as a mechanism for pattern formation. This was first formulated about 20 years ago; although, as a generalization, it has recently been criticized from various quarters (cf. Wolpert, J. Theoret. Biol. 25, 1969), it has been fruitful in more limited areas; and it certainly was a novel and interesting idea to bring together in one book discussions of regeneration in unicellular and multicellular animals, plant morphogenesis, embryogenesis, and tumor formation against a common theoretical background.

The present reviewer has two major objections against the book, however. One is that the evidence is often selected so as to fit the favoured hypothesis, leaving other evidence unmentioned. The other objection mainly concerns the first chapter, in which evidence from the molecular biology of prokaryotes is naively extrapolated to higher organisms, totally disregarding the complexities of gene regulation in the latter. The specific inhibitors found in some developing higher organisms are simply equated with the gene repressors of bacteria. For these and other reasons the book is definitely not suited for students who still have insufficient background in this general area.

Some very important recent and older evidence is not included. To mention but a few examples: the treatment of blastemal autonomy and of the role of the epidermis in limb regeneration is incomplete; the treatment of disto-proximal regional organization in the embryonic limb is superficial — a more complete and objective analysis would show that there is also proximo-distal control in the limb. The dual hypothesis of neural induction (Nieuwkoop, Toivonen), and the evidence for it, goes unmentioned. An area that is completely lacking is the regeneration of insect limbs and the development of insect segmental epidermis — it would be very difficult to fit the insect data into the theory of polarized inhibitory control. Also, one would have wished for a more explicit consideration of the relationships between polarity, gradients, and cellular differentiation, and for a more formal treatment of the author's own hypothesis, which is still couched in rather imprecise terms.

Nevertheless, many parts of the book make interesting reading, provided the reader uses his critical faculties. The author is at his best when describing older work that seems almost forgotten, yet provides a great deal of interesting information. This reviewer found the discussion of bio-electrical phenomena in relation to morphological patterns particularly interesting.

The book is beautifully produced and very well illustrated. The index is very detailed.
Dissertations
40
CELERTRANSFORMATIE BIJ REGENERATIE, een experimenteel onderzoek bij axolotl-larven (Cell transformation during regeneration; an experimental investigation on axolotl larvae), 1971. By A. E. HARREBOMEE
vol. I text. 72 pp., 6 schemes
vol. II 11 plates

Transplantation of limb cartilage, muscle, or dermis to the flank, covered by limb wound epidermis; dedifferentiation, blastema formation, and development of incomplete limbs; histological evidence of cellular metaplasia.

Symposium reports
41
REPAIR AND REGENERATION, the scientific basis for surgical practice. 1969. Edited by J. E. DUNPHY and W. VAN WINKLE, Jr.
McGraw-Hill, New York. 378 pp., 169 figs., 26 tabs., 4 pls., combined index to subjects and contributors. $ 29.50

This book contains the papers presented at a Symposium held in San Francisco in February 1968. There were 26 participants from the U.S.A. and Great Britain, belonging to a wide variety of disciplines. The emphasis was on the applicability of results to clinical medicine and surgery. Nevertheless, many of the new data reported will be of interest to experimental biologists working on wound healing and repair, particularly in mammals.

The 24 papers are arranged in six sections as follows: I Inflammation and immunity (3 papers); II Skin repair (5); III Connective tissue repair (5); IV Wound remodelling (2); V Biological factors in wound healing (3); VI Practical and clinical aspects of repair (6). The discussions held at the Symposium are not recorded.

Contributions worth special mention are a paper by Bullough on epithelial repair, and one on epithelio-mesenchymal relations by Grobstein (section II); a paper on collagen biosynthesis by Rosenbloom and Prockop, and one on mucopolysaccharide synthesis by Peter (section III); a paper on enzyme induction and growth control by Argyris, one on nutritional and environmental aspects of wound healing by Hunt and Zederfeldt, and a long paper by Urist on inductive substrates in new bone formation (section V).

The book is well printed and well illustrated. It has no author index.

42
Excerpta Medica, Amsterdam. International Congress Series, no. 218. 309 pp., 229 figs., 12 tabs., subject index. ISBN 90 219 0142 0. $ 20.—, £ 8.35, H.fl. 72.—

This book embodies the proceedings of an international conference convened by the Muscular Dystrophy Associations of America, and held in New York in March 1969. The conference was attended by 33 scientists, one third of whom came from outside the U.S.A. Most participants were anatomists, biologists, and pathologists.

Most of the 22 contributions are not formal papers but spontaneous presentations interspersed with questions from the audience and other discussion matter. Frequently these discussions are quite extensive and have their own illustrative material and literature references. Some of the papers are so distended by discussions that they become very difficult to read. Moreover, they lack summaries, which could partly make up for this.

The studies reported relate to muscle regeneration and myogenesis (both normal and abnormal, both in vivo and in vitro) in a variety of amphibians and mammals (including man). The techniques used are restricted almost entirely to light and electron microscopy, sometimes combined with isotopic labelling. A considerable amount of discussion centres around the satellite cell concept. J. H. Venable has provided a brief but critical summary of the conference which shows, not surprisingly, that it raised more problems than it solved.

The book is well printed and illustrated with numerous good photographs and electron
micrographs, so essential to the understanding of a difficult subject like this. It is rather inconvenient that all literature references have been brought together in one bibliography at the end of the book. The subject index is good, but an author index, or at least an index to the contributions to discussions is badly missed.

Organogenesis and Histogenesis (see also 12, 21, 33, 38, 74)
Monographs
G. Fischer, Stuttgart. Progress in Histochemistry and Cytochemistry vol. 1, nr. 3. 32 pp., 13 figs., subject index.

Fetuses of 23-196 mm CRL; developmental aspects limited; no classification of cell types; emphasis on pentose shunt, and on production and extrusion of granules.

44 AN ATLAS OF THE ULTRASTRUCTURE OF HUMAN SKIN, development, differentiation, and post-natal features. 1971. By A. S. BREATHNACH
Churchill, London. 406 pp., 305 figs., subject index. ISBN 0 7000 1455 1. £ 15.—

This atlas illustrates the fine-structural features of human skin from a developmental point of view. About half the number of figures illustrate features of fetal skin, and conditions in the fetus serve as a basis for the illustration of more complex post-natal arrangements. A knowledge of the general anatomy of skin at the light-microscopic level is presupposed. Most of the more than 300 figures are full- or half-page electron micrographs. A large number of low- and medium-power micrographs are included instead of high-power photomicrographs. It is questionable whether the latter would not have better served the purpose of bridging the gap between light and electron microscopy.

The atlas has no text apart from the figure legends, but these are extensive and, as far as possible, are arranged so as to form a continuous story. They contain numerous cross-references.

On the whole the quality of the electron micrographs and their reproduction is excellent. Some of the highest magnifications seem to be more blurred than is necessary with optimal techniques. The book is produced with great care. Each of the 16 sections is concluded by a brief list of selected references, mainly review articles.

45 ENTWICKLUNG UND CHEMODIFERENZIERUNG DES THALAMUS DER RATTE. 1970. By E. EITSCHBERGER

Morphogenesis, histogenesis, and histochemistry of thalamic system from 15-day embryo till 45 days post partum (10 enzymes); histochemistry in adult.

46 POSTNATAL DEVELOPMENT OF SPINAL ANTERIOR HORN NEURONES IN NORMAL AND UNDERNOURISHED RATS, a quantitative cytochemical study. 1970. By M. HALTIA
Acta Physiologica Scandinavica, suppl. 352, Stockholm. 70 pp., 25 figs., 10 tabs.

Isolation of individual neurones from fixed spinal cord of normal, undernourished, and rehabilitated rats; determination of dry mass per cell after lipid extraction, and of RNA content per cell; changes during postnatal development.
DEVELOPMENTAL NEUROBIOLOGY. 1970. By M. JACOBSON
Holt, Rinehart and Winston, New York. Developmental Biology Series. 479 pp., 93 figs., 12 tabs., subject index. SBN 03 077990 1. £ 7.70


This book is a worthy successor to Detwiler's Neuroembryology (1936). It is much broader in scope than Hughes' Aspects of neural ontogeny (1968) reviewed in Gen. Embryol. Inf. Serv., Suppl. 12, 1968. According to the preface most of the book is "... an attempt at a selective assembly and arrangement of the great mass of data in the literature dealing with development of the nervous system ...". The author, who with his collaborators has contributed greatly to our understanding of the establishment of neuronal connections, shows much skill in presenting a coherent picture on the basis of both older and very recent literature. The treatment is critical and speculation is deliberately kept at a minimum. Another feature of the book is the historical perspective it provides and the tribute it pays to great scientific forebears, foremost among them Ramón y Cajal and Ross Harrison.

The table of contents sufficiently characterizes the book. The emphasis throughout is on cellular processes, among which the author distinguishes five main kinds: proliferation, migration, growth, interaction, and death. Little or no attention is devoted to the ontogeny of overall patterns of behaviour, particularly in normal animals. It depends on the reader whether this will be considered a defect or not. It should perhaps be mentioned that ch.2 contains discussions of polarity, patterns, and intercellular communication during development which do not confine themselves to the nervous system. Ch.7 ends with a section entitled "Toward a theory of neuronal specificity".

The book is well produced and illustrated with photographs and good line drawings, all especially prepared for this book. (There are a few errors and omissions in the captions of the figures.) The bibliography covers no less than 116 pages. Unfortunately there is no author index; the subject index could have been more detailed.

DIFFERENTIATION AND FUNCTION OF THE HYPOPHYSEAL-TARGET ORGAN SYSTEM IN CHICKEN EMBRYOS. 1970. By B. MESS and K. STRAZNICKY
Akadémiai Kiadó, Budapest. Studia Biologica Academiae Scientiarum Hungaricae, no. 9. 100 pp., 35 figs., 6 tabs., subject index. $ 3.60

Decapitated chick embryos with or without homografted pituitary; structural and functional relationships between hypothalamus, adenohypophysis, and thyroid and adrenal cortex respectively; autoradiography, electron microscopy, hormone essays, thiouracil and metopyrione treatment.


Quantitative electron-microscopic study; selective literature review relative to cortical development.
Springer, Berlin. Ergebnisse der Anatomie und Entwicklungsgeschichte, Bd. 44, H. 2. 111 pp., 35 figs., 5 tabs., subject index. ISBN 3 540 05425 1, 0 387 05425 1

Histological and morphometric study based on embryos and fetuses from 5 weeks till term; contains data on thymus and parathyroid gland; lengthy bibliography.

Dissertations

51
HISTOKEMISKE UNDERSØGELSER over udviklingen af led- og knoglesystemet hos humane fostre i første halvdel af den prenatale periode (Histochemical investigations on the development of the joint and bone systems of the human fetus during the first half of the prenatal period). 1970. By H. ANDERSEN
M.D. Thesis, København. 115 pp., 2 diagrs., 22 figs., subject index. English summary (4 pp.)

Embryos and fetuses of 8-179 mm CRL; synovial joints; general osteogenesis; central areas of face and palatine processes; clavicle; lengthy bibliography.

52
THE FETAL ENDOCRINE PANCREAS, a quantitative morphological approach. 1970. By F. A. VAN ASSCHE

Quantitative and qualitative morphological and biochemical studies of the endocrine pancreas of human newborns of the following classes: from normal mother, from diabetic mother, erythroblastotic, α-thalassemic, anencephalic with or without functional hypothalamo-hypophyseal system.

53
DEVELOPMENT OF THE RENAL CORPUSCLE AND THE JUXTAGLOMERULAR APPARATUS, a light and electron microscopic study. 1971. By J. KAZIMIERCZAK

Study on kidneys of newborn pigs, supplemented by newborn rats and two human fetuses; reconstructions of five stages of glomerulogenesis; numerous light and electron micrographs.

54
RECHERCHES SUR LES STYLETS MANDIBULAIRES ET MAXILLAIIRES DE RHODNIUS PROLIXUS. 1970. By J.-M. PINET

Part one (110 pp.) contains a morphological and ultrastructural study of the development of the stylets during the moulting cycle, and an experimental-morphological analysis of the potencies of the styliegenic organ and of the development of coaptations (fitting regions) between pairs of stylets.

55
CONTRIBUTION A L'ETUDE EXPERIMENTALE DE LA DIFFERENCIATION SEXUELLE CHEZ UN HERMAPHRODITE SIMULTANE (Eisenia foetida Sav.). 1970. By J.-C. RELEXANS

Normal gonad development; effects of temperature shocks, nutritional status, and gonad transplantation on sex determination and differentiation.
Human embryos of 4.4-16 mm CRL (reconstructions of brain and inner ear); one human anencephalic embryo of 9.5 mm CRL; 15-day rat embryos.

SomE ASPECTS OF THE HEREDITARY DEFECT EPITHELIOGENESIS IMPERFECTA LINGUAe BOVIS (Smooth-tongue), studies on differentiation and keratinization in tongue epithelium. 1970. By Z. M. WEISMAN-HAMERMAN

One chapter (12 pp.) describes the differentiation of the tongue epithelium in normal and mutant embryos, and some experiments on regeneration of tongue epithelium. An appendix (11 pp.) describes preliminary experiments on the culture in vitro of tongue epithelium from rat embryos.

M.D. thesis, Free University, Amsterdam. Wolters-Noordhoff, Groningen. 157 pp., 60 figs. $15.60

One chapter (20 pp.) describes the developmental anatomy of the larynx in embryos of 8, 23, and 47 mm CRL (reconstructions), in the fetus, and in the postnatal period; brief discussion of teratology and functional development.

Symposium reports

This volume embodies the proceedings of a conference held at Besançon in 1969. It is a reprint, with change of pagination, from “L’Année Biologique”, vol. 9, nr. 5-10, p. 247-590 (1970).

The book contains a rather heterogeneous collection of 38 papers, which have not much more in common than that the research reported as a rule involved either organ and cell culture or transplantation, or both. Apart from three Belgians all speakers were French. The papers are grouped in four sections as follows: Organogenesis and cellular differentiation (7 papers); Organogenesis and cellular physiology (7); Sexual differentiation (15); Regeneration, endocrinology, pathology (8). There is an opening lecture by Et. and Em. Wolff describing the tortuous ways which led them from the culture of embryonic organs to that of cancerous tissues, with emphasis on the nutritive factors involved. The section on sexual differentiation is opened by a lengthy discussion by P. Brien of the general principles of gametogenesis and sexual development in both plants and animals.

The great majority of the papers report partly or entirely on unpublished research carried out on a wide variety of organ systems of many vertebrate and invertebrate species. Some of the papers are very short, and none have summaries; the longest papers number about a dozen pages. Most papers are followed by brief discussions. The significance of this book perhaps lies not so much in the individual papers, which vary in content and importance, as in the fact that it provides a cross-section of what is going on in several important areas of experimental zoology in France. Many of the leading French schools are represented, often by their younger members who have just started publishing.

The book is well printed and adequately illustrated, but has no indexes. The binding is weak.
CARDIAC DEVELOPMENT WITH SPECIAL REFERENCE TO CONGENITAL HEART DISEASE. 1970. Edited by O. C. JAFFEE
University of Dayton Press, Dayton, Ohio. 168 pp., 97 figs., 8 tabs., subject index. $ 9.00

Contributors: Goerttler, Jaffee, G. LeDouarin, N. LeDouarin, Nihill, Nora, Patten, Patterson, Shaner, Sissman, Van Mierop, Vargo

This book contains the 12 papers read at an international Symposium held in Dayton, Ohio in June 1968. The Symposium had an attendance of 41. Among the contributors were five pediatricians, three biologists, two anatomists, one pathologist, and one veterinarian.

The earliest stages of heart development were not considered. Most papers deal with the functional embryonic heart in man, pig, and chick. Various structural, functional, electrophysiological, teratological, and genetical aspects are discussed. One paper describes epidemiological work. Three papers (one each by Patten, Shaner, and Patterson) are little more than abstracts, but some of the others are quite extensive (up to 28 pages). All papers are in English. The discussions held at the Symposium are not recorded.

The book is produced in offset print and is adequately illustrated.

Publishing House Nauka, Moscow. 256 pp., 113 figs., 13 tabs.

Contributors: Belousov, Bozhkova, Buznikov, Campbell, Dettlafl, Dyban, Friedenstein, Gurdon, Ivanov, Konyshev, Kvinhidze, Lopashov, Rott, Salamatina, Stroeva, Tarkowski, Toivonen, Tumanishvili, Yazykov

This book is in Russian and is announced only briefly. It contains the proceedings of a Symposium held in Tbilissi (Tiflis) in November 1968. Among the contributors were two from Great Britain and one each from Poland and Finland.

The 19 papers read range in length from about 10 to about 20 pages, and are followed by brief discussions. Some are mainly theoretical, others describe work performed on a variety of developing systems, sometimes with sophisticated methods.

Publishing House Nauka, Moscow. 198 pp., 86 figs., 2 tabs. (paper)

Contributors: Fridenshtein, Khrushchov, Levander, Lopashov, Makarov, Mikhailov, Novak, Polezhaev, Stroeva, Vakhtin

This book is in Russian and contains the proceedings of a Symposium held in Moscow in September/October, 1968. The ten papers discuss various aspects of tissue metaplasia in vertebrates, and their relationships with embryonic and postembryonic processes of induction. Three papers deal with blood cells, one with pigmented eye tissues, and one with cell cloning in vivo.

HAIR GROWTH. 1969. Edited by W. MONTAGNA and R. L. DOBSON
Pergamon Press, Oxford. Advances in biology of skin, vol. IX. 601 pp., 369 figs., 63 tabs. Author and subject indexes. SBN 08 012967 6. $ 21.50, £ 8.—

Although the Symposium of which this volume is the report took place as long ago as 1967, we feel the book is important enough still to be briefly reviewed. We will limit ourselves to those contributions which we consider to be of particular interest to developmental biologists (nine out of a total of 35).

The first five contributions explicitly deal with problems of hair and feather development: J. Cohen on interactions of dermis, epidermis and dermal papillae in the chick (18 pp.); R. F.
Collections of papers

64
CULTURES D'ORGANES D'INVERTEBRES. 1969. Edited by H. LUTZ

INVERTEBRATE ORGAN CULTURES. 1970. Edited by H. LUTZ

These two volumes are almost identical in content and production, and will therefore be reviewed as one book. The book contains a somewhat heterogeneous collection of papers presented at a Colloquium held in Clermont-Ferrand in April 1968. All of the eleven papers are by French authors. Some papers are lengthy reviews, while others are brief reports on original research, and others again are a mixture of the two. Not all papers are even concerned with the topic that has given the book its name. Whether the book is suitable for students, as the preface to the series states, is questionable.

We will restrict ourselves, with one exception, to mentioning those papers that deal with problems of morphogenesis and differentiation as elucidated by organ culture.


The books are well produced and adequately illustrated. Unfortunately they have no indexes, which reduces their value as works of reference.

65
ORGAN CULTURE. 1970. Edited by J. A. THOMAS
Academic Press, New York. 525 pp., 166 figs., 19 pls., 13 tabs., subject index. ISBN 0 12 688150 2. $ 29.50

Contents: I. The general principles of organ culture in vitro (Et. Wolff); II. Differentiation of organs in natural media (Le Douarin); III. Culture of embryo organs in synthetic media (Kieny); IV. Sexual differentiation and intersexuality in vitro (Haffen); V.. The action of hormones and inhibitors on organs cultured in vitro (Dieterlen-Liévre); VI. Culture and parabiosis of blastoderms (Salzgeber); VII. Organ culture in the invertebrates (Ziller-Sengel); VIII. In vitro reassociation of dissociated cells (Sigot); IX. Study of organogenesis by dissociation and reassociation of embryonic rudiments in vitro (Sengel); X. Organ chimeras and organ culture of malignant tumors (Em. Wolff)

This book is the English translation of a book first published in French in 1964 under the title "Les cultures organotypiques". Its ten chapters are excellent synthetic reviews by Prof. Et. Wolff and several members and former members of his group at Nogent. The book is suf-
sufficiently characterized by the table of contents printed above. An important feature of the present edition is that all chapters have been updated by means of sometimes lengthy addenda, describing the most important work published from 1963 till 1968.

The numerous original illustrations are reproduced, while the addenda have their own new illustrations. Many of the illustrations are photographs which are very well reproduced, sometimes better than in the original. The translation is due to the "Express Translation Service"; it is satisfactory, although clumsy in places, and clearly not done by a person trained in biology.

The book is well printed on heavy quality glossy paper. It has a subject index, but the absence of an author index is badly felt. Surely this could have been provided at a slight increase in price, making the book much more useful as a work of reference.

66

This is the English translation of a book published in French in 1969. The French version was reviewed in Gen. Embryol. Inf. Serv. 13, 1969, p. 338. The English translation is good, although not idiomatic. One contribution, that by Tiedeman, was left out of the present book, so that authorship is now entirely confined to members or former members of the school of Et. Wolff in Paris, and the experimental material to the chick embryo.

No attempt has been made to update the various contributions. Since the original series of seminars was held in 1967, this means that the most recent advances are not included. Nevertheless, it is very convenient for English-speaking readers that all this important material is now available in concise and coherent form in English.

The book is very well printed and illustrated. It has no subject index. The price of the paperback edition is reasonable.

Cellular Developmental Biology (see also 14, 16, 20, 59, 61, 81, 82, 85, 86, 96)
Treatises
67
CELL DIFFERENTIATION. 1970. Edited by O. A. SCHJEIDE and J. DE VELLIS van Nostrand Reinhold, New York. 622 pp., 204 figs., 26 tabs., subject index. £ 10.—


The word "differentiation" has two accepted meanings, one spatial, the other temporal. Spatial differentiation is also called arealization or pattern formation, while temporal differentiation is more or less synonymous with cyto- or histogenesis. The present book is almost exclusively about the temporal differentiation of cells, of which much more is known in terms of structure, chemistry, and physics. In fact, the book may be considered as dealing with the long-term temporal aspects of cell biology, rather than with a particular aspect of embryology. Accordingly, the definition of differentiation from which it starts is very broad indeed, and not restricted to processes occurring in embryonic cells.

The book is intended primarily for advanced students, instructors, and active investigators. It was written by 23 specialists, all of them North-American. It is impossible to review it
extensively here; as a partial substitute the complete table of contents is printed above. This will show the extraordinarily broad scope of the book; this, together with the unquestionable high standard of authorship, ensures that the book will become a classic in its field. We cannot but feel grateful to the editors and authors for the tremendous amount of work and thought that has gone into it.

One general feature of the book may be mentioned: the authors were asked to organize their material according to their personal perspectives or biases, and not to avoid far-reaching interpretations and concepts. Even though some of these may later turn out to be wrong, in the present state of flux in which this field finds itself they serve the purpose of stimulating discussion, thought, and further experimentation.

The book is beautifully illustrated and produced with the utmost care. All chapters have extensive bibliographies. Some of these are up-to-date until 1968, others until 1967 or 1966. The book has a rather brief subject index; the absence of an author index is regrettable but perhaps excusable in view of the inevitable delay its composition would have caused.

**Monographs**

68


Clarendon Press, Oxford. 199 pp., 16 figs., 18 pls., 1 tab., author and subject index. SBN 19 854113 9. $ 8.75, £ 1.90 (cloth), $ 3.75, £ 0.90 (paper)

The first edition of this important and stimulating book appeared in 1968 and was reviewed in "General Embryological Information Service", Suppl. 12, 1968, p. 13. The interest which it met, and the rapid advances made in the last few years, fully justify the present enlarged edition. Much new material has been incorporated, but the author has seen no reason for a fundamental revision of his main conclusions, which entail much emphasis on the cytoplasmic rather than nuclear control of protein synthesis.

The organization of the subject matter has remained unaltered, but the following new sections have been added: ch.2 ("The genetic operator model"); a section on negative control, the operon, and the repressor; ch. 3 ("The search for the messenger"): a section on '45S' RNA; ch. 4 ("Regulation"): a section on regulation by enzyme degradation; ch. 6 ("Differentiation"): a section on stimuli for differentiation. In ch. 5 (now called "Cell fusion") the section on the transfer of information from nucleus tot cytoplasm has been greatly expanded.

Many of the original photographs have been replaced by newer ones. The chapter bibliographies contain about 50% more titles, even though many of the original references were eliminated.

69

CELLULAR MECHANISMS OF CHROMOSOME DISTRIBUTION. 1970. By P. LUYKX


A general, comprehensive theory of chromosome movement in cell division is provided; chapter I briefly reviews evidence suggesting that a precisely determined chromosome complement is a prerequisite for cell reproduction and development.

**Dissertations**

70


vol. 1 text (mimeographed). 110 pp., 16 figs., 7 tabs.

vol. 2 illustrations. 92 electron micrographs

Electron-microscopical study of fertilized egg and first cleavage division; formation of midbody and blastocoel; discussion of mechanisms of cell division.
Symposium reports

71

HEMIC CELLS IN VITRO. 1969. Edited by P. FARNES
Williams & Wilkins, Baltimore. In vitro, vol. 4. 192 pp., 60 figs., 20 tabs., subject index. $13.50

Although this Symposium was held in 1968, several papers contain interesting information which was very new at that time. We will mention only those papers thought to be of special interest to our readers.

N. L. Petakis et al. deal with factors affecting the location of bone marrow in the mouse embryo (chiefly the mesenchyme surrounding the bone rudiments). L. G. Lajtha discusses kinetic models of hemopoietic stem cell populations. T. R. Bradley et al. deal with in vitro colony formation by hemopoietic cells (granulocytic clones), while T. Rytömaa describes experiments leading to the postulation of a specific granulocytic chalone and antichalone. E. Goldwasser and M. Gross report on recent experiments on erythroid differentiation in vitro. Finally, B. E. Barker reports on the blastogenesis and the cytological and ultrastructural differentiation of lymphocytes in response to pokeweed mitogen (a phytohemagglutinin).

The book is well produced and illustrated. It also contains 60 pages of abstracts of papers presented at the 19th annual meeting of the Tissue Culture Association.

72

CONTROL OF ORGANELLE DEVELOPMENT. 1970. Edited by P. L. MILLER
University Press, Cambridge. Symposia of the Society for Experimental Biology, No. 24. 533 pp., 156 figs., 33 pls., 64 tabs., author and subject index. ISBN 0 521 07855 5. $17.50, £7.—

This volume embodies the 23 papers presented at the 24th S.E.B. Symposium held in London in September 1969. The title does not convey the true scope of the Symposium, because apart from the assembly and transmission of certain organelles many contributions deal with the molecular biology (DNA, RNA, ribosomes, and protein synthesis) of organelles, particularly mitochondria and plastids. In addition, some contributions are concerned with the cytoplasmic control of nuclear function. The majority of the papers describe or review recent work on unicellular organisms and plants; a few only report on work with amphibian and mammalian material.

It may be stated that the volume as a whole presents a comprehensive survey of the present state of our knowledge in this field of investigation. We will specifically mention only a few papers judged to be of particular interest to our readers. These are: a paper by I. B. Dawid on the nature of mitochondrial RNA in Xenopus oocytes; one by H. G. Schweiger on RNA synthesis in Acetabularia; one by N. de Terra on cytoplasmic control of macronuclear events in Stentor; and one by J. B. Gurdon on autonomy vs. non-autonomy of nuclear activity in multicellular organisms.

The book's production and illustrations are up to the high standard usual in this series.

Collections of papers

73

ORIGIN AND CONTINUITY OF CELL ORGANELLES. 1971. Edited by J. REINERT and H. URSPRUNG


The first volume of this new series (1968) was favourably received. The editors' preface to the series was cited in full in Gen. Embryol. Inf. Serv. 13, 1969. The publication of the present volume was delayed by problems of "author synchronization". Of the 17 specialist authors 12 are from the USA, two each from Great Britain and Western Germany, and one from France.
As may be seen from the table of contents almost all extra-nuclear cell organelles are represented; an exception are the microfilaments, but these are perhaps too "young" for a review. The longest review is that on centrioles (52 pp.), the shortest that on polar granules (12 pp.). The chapter on vacuoles includes discussions of lysosomes and peroxisomes. All reviews are competent and up-to-date.

The only chapters that deal with developmental biology in the more classical sense are that on polar granules and that on the differentiation of plant cells. Nevertheless, the book is sure to gain an important place within the domain of developmental biology in the broad sense, in which increasing stress is being placed on the role of self-assembly and controlled assembly down to the molecular level.

The book is very well produced and superbly illustrated with numerous photographs, electron micrographs, and drawings. As in the first volume, the absence of indexes is to be regretted. The price seems unnecessarily high.

Developmental Biochemistry and Molecular Biology (see also 8, 14, 16, 17, 27, 34, Textbooks) 43, 52, 67, 68

BIOCHEMISTRY OF DIFFERENTIATION. 1970. By Ch. A. PASTERNAK
Wiley-Interscience, London. 203 pp., 72 figs., 2 pls., 9 tabs., subject index. ISBN 0 471 66900 8. £ 2.75


This book is based on a series of lectures given to third-year biochemistry and medical students. The author is a biochemist, and his use of embryological terms sometimes deviates from current usage. Although the book cannot be regarded as an introduction to chemical embryology, as a summary it is useful for general biologists and developmental morphologists alike. Its coverage of differentiation is comprehensive, indeed more so than in many embryological texts.

Chapters 2 and 3 deal with differentiation in a variety of systems including bacterial spores, slime moulds, unicellular algae, higher plants, sea urchin and frog embryos, and metamorphosing frogs. Chapter 4 deals briefly with early development in birds and mammals, and further discusses examples of organogenesis in mammals (structural proteins and enzymes) and differentiation of red and white blood cells (including immunological aspects). Of particular interest is the discussion of cancer in relation to growth control in ch. 6.

The last two chapters deal with possible mechanisms of differentiation. Chapter 7 first discusses the concept of totipotency, then the evidence for cytoplasmic control of gene activity. The discussion of possible mechanisms for the control of protein synthesis in ch. 8 is condensed, and recent models of gene control in higher organisms are not mentioned, which results in a rather too simplified view. The problem of the origin of spatial patterns of differentiation, so challenging for the biochemist of tomorrow, would have deserved a somewhat longer discussion than the one sentence it gets.

The book is adequately illustrated; all chapters are concluded by carefully selected classified lists of further readings.

W. A. Benjamin, New York. 684 pp., 276 figs., 1 pl., 20 tabs., subject index. SBN 0 8053 9020 0 (cloth) and SBN 0 8053 9603 9 (paper). $ 17.50

The first edition (1965) of this remarkable book was reviewed in General Embryological Information Service 12, 1967, p. 274. Therefore, apart from mentioning that the book is now almost 150 pages longer, and that many new findings were incorporated up to the last minute, we will restrict ourselves to the following remark.

From the point of view of the developmental biologist the most important alteration is that there are now separate chapters on "molecular embryology" (55 pp.) and on antibody synthesis (27 pp.); subjects which together occupied only 27 pp. in the first edition. The former chapter
is almost entirely new, and constitutes an excellent summary of the molecular-biological aspects of cell differentiation. It includes (among other things) discussions of bacterial sporulation, the differences between procaryotic and eucaryotic cells, differentiation in the cellular slime moulds, cell cloning in vitro, the cell cycle, euchromatin and heterochromatin, repetitive DNA, gene amplification, stable mRNA, nuclear transplantation, and cell fusion. The addition of this chapter makes the book more balanced and even more useful than it already was.

Developmental Physiology (including endocrinology, immunology, etc.) (see also 1, 11, 13, 21, 26, 27, 34, 36, 47, 48, 60, 67, 84, 87)

Monographs

76
THE TRANSMISSION OF PASSIVE IMMUNITY FROM MOTHER TO YOUNG. 1970. By F. W. R. BRAMBELL

This book is a comprehensive and up-to-date review of the subject indicated in the title. The author for many years was the world's leading authority in this field. We can only be thankful that he was able to complete the manuscript before his death. The book is best characterized by a quotation from the preface:

The plan has been to review for each species, or group of similar species, the route of transmission including the development and arrangement of the foetal membranes which are involved in transmission before birth and the mammary secretion of antibodies and structure of the neonatal intestine which absorbs them when transmission is after birth; the kinds of molecules that are preferentially transmitted; how they can interfere with each others transmission; the duration and termination of transmission; the waning of passive immunity and the beginning of active immunity. A separate chapter has been devoted to the comparative treatment of haemolytic disease in man and animals. The final chapter deals with the resemblances between the phenomena of transmission, anaphylactic sensitization and γ-globulin catabolism and offers a working hypothesis to account for transmission and, possibly, γ-globulin catabolism.

The species, or groups of species dealt with in consecutive chapters are the birds, the rabbit, the rat and mouse (two chapters), the guineapig, cat, dog, and hedgehog, the pig and horse, the ruminants, and finally man and the monkey. The book is of interest to embryologists particularly because it throws new light on the functions of the placenta and foetal membranes.

The book is beautifully produced and superbly illustrated with line drawings and photographic plates. It has a 41-page bibliography.

77
ASPECTS DYNAMIQUES DU METABOLISME GLUCIDIQUE CHEZ L'EMBRYON DE RAT, action de substances hypoglycémiantes et tératogènes. 1970. By J. L. DE PLAEN
Arscla, Bruxelles: Maloine, Paris. Collection "Médico-Monographies d'Agrégés", 250 pp., 68 figs., 41 tabs. F. Belg. 500; Fr. 70 (paper)

Surprisingly little is known about the carbohydrate metabolism of the mammalian embryo during the period of organogenesis. Yet such knowledge is indispensable for the interpretation of the teratogenic effects of hypoglycemia-producing agents used in the treatment of maternal diabetes. The present research monograph fills this gap to a considerable extent. It is concerned mainly with rat embryos of 12-16 days gestational age. Professor H. Tuchmann-Duplessis wrote a laudatory preface to the book.

The book is in two main parts, the first of which deals with the carbohydrate metabolism and respiration of the isolated rat embryo and its organs. Part two reports on experimental results obtained by the administration of hypoglycemia-producing substances to the pregnant rat and their effects on the embryo in vivo and in vitro. The author tries to establish a link with the teratogenic effects of these substances, which however does not appear to be straightforward.

The book has an extensive English summary and a 14-page bibliography. There are no indexes.

This thorough monograph brings together a vast amount of information on the development of immune responses in mammals and birds. The unifying principle is the author's embryological viewpoint, particularly his use of the concept of age-equivalence. He shows that the onset of immunological function occurs at the same stage of morphological development and physiological maturity in both large and small animals.

The book is sufficiently characterized by the table of contents printed above. Age-equivalence criteria are discussed in a separate chapter at the end of the book (ch. 13).

The book is well produced and is illustrated with many graphs and a few photographs. All chapters have their own extensive and up-to-date bibliographies; a notable feature is the inclusion of rather much Eastern-European work. It is regrettable that the author index refers only to the text, not to the bibliographies.

Dissertations
79
vol. 1 text (mimeographed). 141 pp., 15 tabs.
vol. 2 illustrations. 32 plates.

Comprehensive study, made with a variety of modern techniques, of the development and function of the immune system of the tadpole of Alytes.

Developmental Genetics and Evolution (see also 8, 25, 72)
Symposium reports
80
Publishing House Nauka, Moscow. 310 pp., 33 figs., 59 tabs.

This book is in Russian and contains the proceedings of a Symposium held in Leningrad in March, 1967. We mention here only those papers which may be of interest to fish embryologists: 1) Genetics of sex determination and some questions on hormone regulation of sex in bony fishes (E. D. Vanyakina); 2) Experimental gynogenesis in carps (K. A. Golovinskaya); 3) On the gonadal development and fertilization processes in Ctenopharyngodon idella (Val.) (Yu. P. Bobrova); 4) Regulative correlation of sexes in fishes by feed-back mechanisms (V. A. Geodakyan and V. I. Kosobutskij); 5) The hybrids of the pacific salmon Oncorhynchus, in particular the development and perspectives of usefulness (A. I. Smirnov); 6) Features of the embryonic-larval development of hybrids of some pond carps (A. P. Makeeva); 7) On the application of cytophysiological methods in the investigation of fish hybrids (M. A. Andriyasheva); 8) Production of progeny from intergeneric hybrids of the white sturgeon and sterlet (I. A. Burtsev). Several papers contain good line drawings of embryonic and larval fish stages.

Contributors: Baron, Boone, Conover, Coon, Davidson, Graham, Green, Knowles, Miggiano, Ohno, Pontecorvo, Talmage, Thom. This is the report of a Symposium held in October 1968 at the Wistar Institute, Philadelphia. Developments in the field of somatic cell fusion are very rapid, and consequently part of the subject matter in this book may already be out of date. Nevertheless, we consider it important enough to be briefly reviewed. Particularly the discussions following most of the papers may still provide stimulating ideas. The Symposium had 60 participants, most of them Americans. The book contains 14 short research papers, most of them dealing with aspects of the fusion of mammalian somatic cells and its genetic implications. The papers of most immediate interest to developmental biologists are: The fusion of cells with one- and two-cell mouse embryos (C. F. Graham); Interactions between genomes in somatic cell hybrids: studies on the regulation of differentiation (R. Davidson); and The preferential activation of maternally derived alleles in development of interspecific hybrids (S. Ohno). In the latter paper gene activation in somatic cell hybrids is contrasted with that in sexual hybrid combinations.

The last paper of the Symposium is a highly mathematical discussion of morphogenesis by R. Thom. Apart from being incomprehensible to those not well versed in mathematics, it seems strangely out of place in this volume. The book is well illustrated.


Contributors: Ashburner, Baglioni, Cove, Fincham, Gros, Gurdon, Harris, Korner, Paul, Sonneborn, Thoday, Wildermuth. This is the report of a discussion meeting held in London in February 1970. It contains 11 short synthetic papers (two in the form of a summary only). The first five full-length papers deal with gene action and its control in micro-organisms, Aspergillus, mammalian chromosomes, protein-synthesizing cells, and plants. Of the remaining papers three are of particular interest to developmental biologists: one by Gurdon on nuclear transplantation and the control of gene activity in animal development, one by Ashburner on the genetic analysis of “puffing” in polytene chromosomes, and one by Sonneborn that deals particularly with cortical inheritance in Paramecium. Sonneborn takes the opportunity to discuss the question whether the whole of development is encoded in DNA: his tentative answer is that this is not always the case.

Reproduction, Gametogenesis, Fertilization (see also 12, 20, 27)

Treatises

FERTILIZATION, comparative morphology, biochemistry, and immunology. vol. 2. 1969. Edited by Ch. B. METZ and A. MONROY
Academic Press, New York. 570 pp., 144 figs., 2 pls., 15 tabs., author, taxonomic, and subject indexes. $ 34.-, £ 15.17.-

Contents: 1. The attachment of bacteriophages and the transfer of their genetic material to host cells (L. D. Simon and Th. F. Anderson); 2. Bacteria (G. Sermonti); 3. Fungi (E. A. Horenstein and E. C. Cantino); 4. Algae (L. Wiese); 5. Fertilization mechanisms in higher plants (H. F. Linskens); 6. Paramecium (K. Hiwatashi); 7. Fishes (E. Nakano); 8. Gamete structure and sperm entry in mammals (L. Pikó); 9. In vitro fertilization of the mammalian egg (C. Thibault); 10. Variations and anomalies in fertilization (C. R. Austin); 11. Control of fertility mechanisms affecting gametogenesis (H. Jackson). This is a sequel to a volume published in 1967 and reviewed in Gen. Embryol. Inf. Serv. 12, p. 284. This volume is more explicitly comparative in approach, and closely examines the whole
fertilization process and its biological conditions in specific groups of organisms (see contents above). Ample attention is devoted to biochemical and immunological aspects. An attempt has been made to bring together the literature from a wide variety of specializations, and to point out leads for future research.

The book is dedicated to the memory of Albert Tyler, who played an important part in the planning of these two volumes. The book is opened by a memorial tribute to Tyler by the editors.

The chapter bibliographies are as up to date as possible. In addition seven of the chapters have addenda outlining new findings published until early 1969. The book is beautifully printed and illustrated.

Monographs

84

THE PHYSIOLOGY OF INSECT REPRODUCTION. 1970. By F. ENGELMANN
Pergamon Press, Oxford. International series of monographs in pure and applied biology, vol. 44. 320 pp., 86 figs., 10 tabs., subject index. ISBN 0 08 015559 6. £ 7.50, $18.75


This authoritative and comprehensive monograph can be of great help as a work of reference to those working on insect developmental biology who have no time or opportunity to familiarize themselves with the vast and widely scattered literature on insect reproduction. The book is not suitable for beginning students, because of the concentrated style and because knowledge of the current terminology is presupposed. The recent literature is covered till 1968, but much of the older literature is also reviewed.

The chapters which are of the most immediate interest to developmental biologists are chs. 2 through 5 (together occupying 49 pages), and ch. 12 on viviparity (10 pp.). Ch. 5 has separate sections on oocyte differentiation and vitellogenesis.

The book is well produced and beautifully illustrated. Most of the figures taken from other sources have been redrawn. There is a useful but rather concise glossary. The bibliography covers 53 pages. The index is complete as to species, but rather restricted as to subjects. There is no author index.

85

ANIMAL GAMETES (Female), a morphological and cytochemical account of yolk formation in oogenesis. 1968. By V. NATH
Asia Publishing House, London. 215 pp., 200 figs., author and subject indexes. $ 17.—

This monograph is essentially a compilation of a wealth of material gathered from many sources. It is a sequel to the author’s “Animal Gametes (Male)” published in 1965, in which he dealt with spermatogenesis in a similar manner. In this book the approach is again that of the morphologist rather than of the cell biologist. The emphasis is on the detailed description and chemical characterization of the constituents of the developing oocyte in relation to the problem of yolk formation. The results of classical histological studies, cytochemical work, and ultrastructural analysis are compared and evaluated while adhering to a more or less strict taxonomic subdivision. This makes the book particularly suitable as a work of reference.

The successive chapters are devoted to nuclear and nucleolar emissions, the yolk nucleus, the Golgi apparatus and lipids (four chapters, together taking up nearly half of the text), the mitochondria, the compound yolk and the role of accessory cells in its formation, and finally micropinocytosis and its role in the incorporation of extra-ovarian proteins.

The 200 figures and plates are brought together at the end of the text and are printed on glossy paper. The far greater majority are line drawings from many different sources; they are well reproduced, but it is irritating that the lettering is not always explained completely. The photomicrographs and electron-micrographs have not come out so well, and particularly the latter often compare unfavourably with the originals.

The book is concluded by a nine-page bibliography in which most titles are older than 1966. The quality of the paper and binding is not very good, but the price is surprisingly low.
Symposium reports

86

COMPARATIVE SPERMATOLOGY. 1970. Edited by B. BACCETTI

This Symposium was held in July 1969 in Rome and Siena, and was attended by 59 participants from many countries. The book contains the 47 papers read at the Symposium, with the brief discussions following them. The great majority of the papers deal with morphological and ultrastructural features of mature sperm and/or spermatogenetic stages. Phylogenetic and taxonomic aspects are considered in several papers.

Of the three introductory papers that by Franzén on phylogenetic aspects of spermatozoa and spermiogenesis is a review, while that by Fawcett and Phillips on the ultrastructure and development of mammalian spermatozoa, and that by Nicander on the comparative fine structure of vertebrate spermatozoa are partly review and partly research report. The remaining 44 papers mainly report on original research. The majority range in length from about 8 to 16 pages.

Taxonomic coverage is very broad, including many invertebrate classes (among which the arthropods, and particularly the insects are best represented) as well as the fishes, amphibians, reptiles, and mammals. Only half a dozen papers deal partly or entirely with chemical and physiological aspects of spermatology. The volume is concluded by a condensed paper by Afzelius entitled "Thoughts on comparative spermatology".

The book is well illustrated, mainly with numerous very good electron micrographs and photographs printed on glossy paper. There are no indexes.

87

MAMMALIAN REPRODUCTION. 1970. Edited by H. GIBIAN and E. J. PLOTZ
Springer, Berlin. 476 pp., 255 figs., 48 tabs. ISBN 3 540 05066 3 and 0 387 05066 3. DM 68.—, $ 18.70

This volume embodies the 20 papers presented at a Symposium held in Mosbach (Baden) in April 1970. Of the contributors ten came from the U.S.A. and seven from Western Germany. The papers vary greatly in length. About half are reviews, the other half bring either research reports or a mixture of original research and review. The subjects treated cover a broad range of structural, endocrinological, biochemical, genetic, and immunological aspects of all major phases of the reproductive process in mammals. The discussions held at the Symposium are not recorded.

We will mention only those contributions considered to be of special interest to our readers. Among the reviews these are the introductory paper by Jost (Paris) presenting an outline of reproductive physiology and its developmental background (29 pp.); a paper by Bedford (New York) on mammalian sperm from ejaculation to syngamy (59 pp.); one by Koester (Giessen) on ovum transport (40 pp.); one by Brinster (Philadelphia) on the metabolism of the ovum between conception and nidation (35 pp.); and one by Edwards (Cambridge, England) on genetic aspects of early development (9 pp.). The following research papers may be specially mentioned: one by Elger et al. (Berlin) on the significance of hormones in sex differentiation; one by Beier et al. (Marburg) on endometrial secretion and early development; one by Krieg (Würzburg) on the immunology of reproduction; and one by Goldman (Philadelphia) on inborn errors of steroidogenesis and steroid action.

The book is well produced and adequately illustrated. It is regrettable that is has no indexes, even though their composition would have retarded publication.
This is the report of a Symposium held in Berlin in March, 1969. It was attended by close to 200 investigators from the U.S.A., Britain, Germany, and several other European countries.

The book contains the 25 research papers read at the Symposium and the discussions following them. The subjects discussed fall into three main groups: 1) sperm capacitation, the role of cervical mucus, and sperm transport (8 papers); 2) egg transport, early blastocyst development in vivo and in vitro, and blastocyst implantation (11 papers); and 3) endocrine aspects, particularly corpus luteum function (6 papers). Some of the discussions contain additional literature references and figures. A connecting thread running through the book is the applicability of the findings reported to birth control.

The book is produced in offset print, and in view of this could have been less expensive. The reproduction of the photographs is reasonably good. The book contains curricula vitae of the lecturers and an index to lecturers and participants in the discussions.

Plant Development (general)

Textbooks

CONTROL MECHANISMS IN PLANT DEVELOPMENT. 1970. By A. W. GALSTON and P. J. DAVIES
Prentice Hall, Englewood Cliffs N.J. Foundation of Developmental Biology Series. 199 pp., 144 figs., 5 tabs., combined author and subject index. ISBN 0 13 171819 3, $ 6.95 (cloth). ISBN 0 13 171801 0, $ 3.95, £ 1.60 (paper)

The approach followed in this book is unusual. This was possible because a companion volume in the same series will be devoted to patterns in plan development (Steves and Sussex). Therefore the present authors could omit almost all morphology and plunge into biochemical right away. The book was written for advanced students, developmental biologists generally, and particularly molecular biologists. It aims at making the green plant more attractive as an object of study for the latter by concisely but clearly summarizing the present state of knowledge with regard to the major biochemical control mechanisms in plant development and their interrelations. No attention is paid to morphogenetic factors that have not yielded to chemical analysis so far.

The chemical factors and processes discussed are, in this order: phytochrome and flowering, ethylene, auxins, gibberellins, cytokinins, abscisic acid, chemical reactions to injury, and senescence and abscission. Each chapter has a brief summary and a selective bibliography.

The book is illustrated with graphs and diagrams, photographs, and good line drawings.

Gauthier-Villars, Paris. 234 pp., 121 figs., subject index. Fr. 24 (paper)

This is an unchanged reprinting of a book first published in 1963. Since the first edition escaped our attention, we briefly review the second one here. Written for students and horticulturists its style is simple and direct, and the language non-technical. Nevertheless, it gives an admirable and many-sided account of the state of developmental biology of (mainly) higher plants about a decade ago (with the exception of embryogenesis). The more is it to be regretted that the author has not seen fit to update the text. To mention an example, is there any excuse not to mention, in an otherwise excellent text, the exciting recent work on single-cell culture, with its important genetic implications?

The book is produced in good offset print and is illustrated with simple but highly successful line drawings. No literature references are given in the text, but there is a good bibliography of books and similar reference material. Unfortunately this also does not go beyond about 1960.
By H. E. STREET and H. OPIK
Edward Arnold, London. A series of student texts in contemporary biology. 272 pp., 95 figs., 15 tabs., combined author and subject index. ISBN 0 7131 2258 7, $ 11.75, £ 3.50 (cloth), ISBN 0 7131 2259 5, $ 5.95, £ 1.75 (paper)


This introductory text written for beginning students, in spite of what its title seems to suggest, really deals with whole plant physiology rather than with plant development as such. Almost half of the book (chs. 3 to 7) is devoted to fundamental physiological processes judged essential as a background to the discussion of growth and development proper. Only four chapters are allotted to developmental processes.

We will restrict this review to chapters 8, 9, and 11. The emphasis here, as in the remainder of the book, is strongly physiological, and very little attention is devoted to developmental anatomy. The treatment is selective and condensed, and appears on the whole rather too difficult for beginning students. The attempt of the authors to make every chapter into a self-contained whole entails rather much repetition. Morphogenesis as such is discussed twice, once very briefly in ch. 8 in relation to growth, and again in ch. 11 under a much looser definition, including root, bud, and leaf initiation as well as flowering and embryo development, but excluding regeneration.

To the present reviewer it seems a definite drawback that the plant hormones are not given a separate chapter. As it is, individual hormones are often mentioned rather haphazardly and before all their various functions have been coherently discussed. On the other hand, the sections in ch. 9 on cell division, cell expansion, and cell differentiation, though concise, are well worth reading.

All chapters are concluded by useful lists of further readings and selected references to the primary literature. The numerous illustrations have been carefully chosen, but it is surprising that such basic matters as the cellular structure of the shoot apex and of the early embryo are not illustrated.

Pergamon, Oxford. 313 pp., 124 figs., 6 tabs., subject index. SBN 08 015500 6, 40 s., $ 5.50 (flexic.) SBN 08 015501 4, 50 s., $ 7.00 (hard c.)


This book is intended as an introduction to growth and differentiation in higher plants for undergraduate students. The authors have attempted to bring together both the morphological and physiological approach within the same volume, and they constantly refer back to developmental and other interrelations in the plant as a whole.

The book is sufficiently characterized by the table of contents above. Although there are no separate chapters on regeneration and callus work, these aspects are discussed in several chapters. In chapter 13 some more general aspects of development are discussed from the standpoint of molecular genetics; in this chapter work on bacteria and Acetabularia is summarized.

There are no literature references in the text, but each chapter ends with a brief list of general and more advanced reading. The book is illustrated with good line drawings and photographs. It has a good index and the price is very reasonable.
The author of this book is an authority on the sexual reproduction of plants with naked ovules. The book deals in strictly comparative manner with the morphological and cytological aspects of the ontogeny of the ovules, gametes, embryos, and seeds of prespermatophytes, gymnosperms, and angiosperms. Phylogenetic aspects are discussed along with the presentation of the data and in a brief conclusion at the end of the book.

More than two thirds of the book (three chapters) are devoted to the ovule and its components, female and male gametogenesis, pollination, and fertilization. The two remaining chapters deal with embryogenesis (16 pp.) and seed development proper (17 pp.).

The book is profusely illustrated with (partially highly schematized) drawings and photographs. It is concluded by a glossary, a brief bibliography, and a combined taxonomic and subject index, of which the latter component hardly merits that name. The frequent use of vernacular plant names is a drawback for non-French readers. The book is inordinately expensive.

This monograph aims at a synthesis of our present-day knowledge regarding the biology, physiology, and morphogenesis of three taxonomically widely separate groups of organisms, whose life-cycles have a plasmodial or pseudoplasmodial stage in common. Such a synthesis can be quite valuable if written in a critical spirit on the basis of personal experience. Our opinion is based primarily on the part dealing with the Acrasiales, and from this at least it is quite evident that the present author has little or no first-hand knowledge of the subject.

The presentation of the research data is often inaccurate or incomplete and their interpretation is equally often uncritical. Too much stress is sometimes placed on rather insignificant details, whereas some very important recent work is hardly mentioned at all. Apart from this, many statements are not properly documented, while on the other hand several authors mentioned in the text do not appear in the bibliography.

The book is in three parts, which deal with the three groups separately. Each part is concluded by a brief taxonomic section. A brief concluding chapter provides an integrative summary which points out the significance of the three groups for the study of morphogenesis and differentiation.

The book is well illustrated and has a lengthy bibliography which, though incomplete, may be of use to those starting research on these organisms. However, as intimated above, the book should not be used without verification of its contents through the original literature. The price of the book is excessive.
the effects of external factors; and finally, the effects of chemicals and ionizing radiations. The brief concluding chapter discusses theoretical subjects such as phyllotactic factors, nature of the centre of leaf generation, and regulative factors and organization.

All chapters have extensive and up-to-date bibliographies in which non-French contributions are by no means absent. The book is well printed and profusely and beautifully illustrated.

96
ACETABULARIA AND CELL BIOLOGY. 1970. By S. PUISEUX-DAO


The number of laboratories using the unicellular giant marine alga Acetabularia to study widely divergent aspects of cell biology is rapidly increasing. Therefore this comprehensive monograph will be welcome to many. The author has worked on various aspects of the organism's biology (mainly on the structure and function of plastids) for many years, and is thoroughly familiar with the work of the leading German and Belgian schools. The book has a preface by Jean Brachet.

Ch. 2, which covers morphology and morphogenesis, reproduction, and culturing methods, is of particular value to those who plan to start research on Acetabularia, because it reviews data which are otherwise difficult to find, including information on other species than those currently used for research purposes. The next three chapters contain much interesting information for the developmental biologist. Ch. 5 reviews biochemical and autoradiographic work on nucleo-cytoplasmic interactions and cytoplasmic autonomy, as well as the effects of chemical inhibitors on DNA, RNA, and protein synthesis. It is concluded by a section on the regulation of protein synthesis in this organism.

The book is illustrated with many graphs, good line drawings, and very instructive photographic plates. The bibliography covers 17 pages and is complete and up to date. The subject index is unfortunately grossly inadequate. It is for instance amazing that there are no entries for morphogenesis or differentiation; other entries, such as those for cap, nucleus, RNA, should have been subdivided. An author index could have considerably increased the usefulness of the book as a source of references.

97
CELLULAR DIFFERENTIATION IN PLANTS AND OTHER ESSAYS. 1970. By C. W. WARDLAW
Manchester University Press, Manchester, Barnes & Noble Inc., New York. 160 pp., 2 figs., combined author and subject index. SBN 7190 0407 1, 389 01222 X. 40 s., $ 6.50


Once more the prolific Emeritus Professor of Botany has turned out a volume of essays. In reviewing a book such as this the reviewer must take a personal attitude. And although many of his botanist colleagues may contend that there is not much new insight to be extracted from this book, the present reviewer, a zoologist, must confess that he has read it from cover to cover without halting. However, his enjoyment was perhaps more of a literary than of a scientific nature. The essays are exceedingly well written, with a wonderful sense of humour in places, but they will appeal more to the philosophically minded than to the practical biologist.

One thing is a pity: that the author virtually ignores (intentionally?) the fairly numerous recent attempts to clarify biological organization by means of models or computer simulation (one important exception being J. Bonner's model of 1965). Perhaps he feels that their significance is as yet too ephemeral to be discussed in an essay.

The book is attractively produced and has a good index.
Methods (see also 35)

Treatises

98
METHODS IN MAMMALIAN EMBRYOLOGY. 1971. Edited by J. C. DANIEL, Jr. Freeman, San Francisco. 550 pp., 187 figs., 34 tabs., subject index. ISBN 0 7167 0819 1. £ 10.70, $ 22.50

The methods for observing and experimenting on mammalian embryos develop rapidly, and are often published incompletely and in widely differing media. Therefore this book will be most welcome to all those who work or are preparing to work in this field, including laboratory animal specialists and students.

The book contains 34 chapters written by 43 carefully chosen specialists. The treatment is usually much more detailed than is possible in ordinary publications. Moreover the chapter bibliographies give all the important primary literature, including some of the most recent references. The applications of each method to those species for which it is particularly well suited are described, so that all laboratory mammals and several domestic mammals are represented.

About two thirds of the book are devoted to early stages of development and pregnancy (up to and including blastocyst implantation), and to the procurement of egg cells and their fertilization. In this area the book is very comprehensive. The treatment of the placenta, the fetus, and the fetal membranes is much less complete. Organ culture is described only for the mammary gland, the embryonic ovary and oviduct, and the postnatal testis.

The following methodological areas, among others, are covered: experimental embryology, egg transfer, embryo culture, in vivo observation techniques, electron microscopy, biochemistry, and physiology. The book is extremely well produced and is illustrated with numerous beautiful photographs and excellent drawings.

Textbooks

99

This little book can be described as a compendium for those who work experimentally with laboratory mammals, particularly the rabbit. It contains a wealth of useful data, but at the same time is so concise that the reader is frequently referred to the original literature for more details.

The first 20 pages present a brief survey of the main phases of mammalian development. The next 20 pages give the essentials of the breeding, care and genetical manipulation of rabbits. Next comes a section of about 40 pages dealing with all the current investigative methods of a general nature, such as artificial insemination, narcosis, surgical techniques, the procurement of developmental stages, ovum transplantation, and a variety of preparative, histological, and biochemical (micro)methods suitable for application to embryonic material. A ten-page section on in vitro methods is followed by a section of 25 pages on special investigative techniques to be applied to specific stages, as well as immunological techniques. The last 10 pages are devoted to problems of developmental genetics. This section is almost entirely theoretical in nature and largely reflects the first author’s viewpoints.

The book is well printed and well illustrated. It has a bibliography of 400 titles, followed by an author index and a list of books. There is no subject index, but the detailed table of contents makes up for this lack. The price of the book is excessive.

100

This book is in the nature of a compendium and was written primarily with a view to facilitating the organization of courses for advanced undergraduate and graduate students, but
it may also be of much help to mature workers, because the subject presents inherent technical difficulties.

The book is in two parts, the first of which describes instruments, equipment, and materials, including the maintenance and breeding of mice. (The book is tailored to the characteristics of the Swiss albino line.)

Part two then proceeds to describe a large variety of laboratory exercises (18 in all). Among these are maturation of oocytes in vitro, recovery of ova, ovum culture, ovum transfer and transplantation, fusion of ova, fertilization and implantation in vitro, and the preparation of staged ova. Then follow six appendixes describing media and procedures. One of the appendixes is a "normal table" of mouse development, which distinguishes 24 carefully defined and illustrated stages. Up to the blastula stage (8) age is given in hours after estimated ovulation time; from then on the successive stages are separated by periods of about one day.

The book is illustrated with good line drawings and a few photographs. It is very attractively produced, and contains a listing of useful reference sources and a selected bibliography of over 100 titles. (A minor point that struck the reviewer as odd is the use of the word "deciduoma" for uterine swelling; this word has the accepted meaning of a neoplasm arising after birth from remnants of the decidua.)

History, Biographies, etc.

Monographs

101


J. A. Barth, Leipzig. Acta Historica Leopoldina No. 5. 516 pp., 20 figs. M. 68.— (paper)

This book is the German translation of a book published in Russian in 1961. The author, a well-known historian of biology, was 81 when the Russian edition appeared, and did not live to see the German translation in print. The scholarly work is the first complete biography of von Baer, one of the geniuses of the nineteenth century and the father of modern embryology.

It is not possible to review the book extensively here. The reader is referred to the long, laudatory review by V. Hamburger in Quarterly Review of Biology 45, no. 2, 1970. The book is exceedingly well written and well translated. The translator has contributed, among other things, a lengthy introduction, many annotations to the main text, a complete list of references cited in the original, and an annotated index of names cited in the text.

The book is well printed and has good illustrations, mostly portraits and facsimiles. It is a pity that it could not be provided with a hard cover. The book contains an annotated bibliography of von Baer’s works, but no general index.
Before COGNETTI, insert:

COETZER, A. M.Sc.—Univ. of Zululand, Private Bag, Kwa-Dlangezwa, EM-PANGENI, Natal, S. Africa

Ontogenesis of the chondrocranium, especially the homologies of the elements of the viscerocranium. Barbus holubi (Cyprinidae, Teleostei)

Delete; the entry of 4 lines beginning with GOETZER

METZ, C. B. zip code should read: 33124