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INFORMATION SERVICE

VOLUME 15, part 1

EUROPE

data collected during 1973

Utrecht-Netherlands
SUBJECT COVERAGE:

Invertebrates, Vertebrates, and Man
developmental biology, including:

- descriptive embryology
- experimental embryology
- physiological embryology

- developmental genetics
- developmental pathology and teratogenesis

- metamorphosis
- regeneration
- asexual reproduction and development

Plants and Unicellular Organisms

- experimental morphology
- developmental physiology

Edited by Dr. J. Faber,
Deputy Director of the Hubrecht Labotory

Managing Editor: B. Z. Salomé

Hubrecht Laboratory
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UTRECHT, Netherlands

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CONTENTS

Introduction .................................................. 5
Directory of Names and Addresses, with subjects of research (alphabetical order) .... 7
Directory of Institutes, with members engaged in developmental biology. Europe ... 107
Subject Index (alphabetical order) ................................................................. 126
International Organizations and Facilities ..................................................... 174
Book notices ...................................................... 179
INTRODUCTION

In the Introduction to vol. 14 we omitted to mention that Dr. P. D. Nieuwkoop had resigned as editor-in-chief, although the fact was clear from the colophon. In 1949, two years after he first became associated with the Hubrecht Laboratory, Dr. Nieuwkoop took the initiative to establish an Information Service for developmental biologists throughout the world, and he produced the first few issues almost single-handed. These issues to a large extent determined the format and content of the periodical in subsequent years. Gradually J. Faber took over more and more of the work, since 1969 with the assistance of B. Z. Salomé. Although Dr. Nieuwkoop is now no longer an editor he continues to be a member of the Board of the G.E.I.S. Foundation.

During the past years the editors have been increasingly faced with financial and organizational problems. In an attempt to solve these they have decided to effect the following changes:
(1) In order to reduce the cost of production the periodical is now printed in photo-offset in a simplified format. Although special type such as italics, bold face and small capitals can be used only exceptionally, we are trying to maintain maximal clarity.
(2) In order to achieve a more efficient distribution of editorial and secretarial work over the two-year period, each volume is now published in two parts of more or less equal size. Part 1 (odd years) covers ca. 24 countries in Europe, while part 2 (even years) covers the remaining geographical areas (ca. 23 countries). Each part has its own geographical directory and subject index, and each contains a substantial number of book notices. The Supplement has ceased to exist.

A poll was held among the subscribers in 1972. Eighty subscribers (ca. 20%) replied to the questionnaire. It appeared that the subject index was being consulted with reasonable to high frequency, and that the format of the index prevailing until 1971 was considered satisfactory to good.
Although several correspondents felt some objection to a change in format, most were prepared to put up with the proposed simplification. This has therefore been carried through starting with the present volume.
The book notices were judged to be useful to very useful.
Several correspondents made suggestions for improvement, but these were too diverse in nature to provide a guideline for meaningful changes.
As a result of a campaign held in 1972 the number of subscribers showed an increase, albeit rather slight. Our financial position is in continuous jeopardy because a small but significant proportion of the subscribers pay their dues too late or not at all. This has forced us to change to a pre-pay system. We apply to subscribers to help us maintain a sound financial basis. (This appeal is not directed to those who have always paid regularly!)

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 1973. 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.

Complete entries (with research subjects) are entirely based on the data sheets. Subjects identical to those in vol. 14 were confirmed by the scientists still to be correct.

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. 14 who have not returned their sheets. Names, degrees, and addresses were reprinted unchanged from vol. 14 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.
e. Persons listed in vol. 14 whose death has come to our attention (marked †).

Persons listed in vol. 14 but not in vol. 15
a. Persons who had research subjects in vol. 14 but are no longer engaged in research in developmental biology.
b. Persons who had no research subjects in vol. 14 and have not returned the sheets for both vol. 14 and 15.

Names of members of the International Society of Developmental Biologists are marked ISDB.

ABEL, W. Dr. – Bot. Inst., Univ. Heidelberg, Hofmeisterweg 4, 69 HEIDELBERG, B.R.D. (Germany)
a. Differentiation and genetic regulation of development. Sphaerocarpus donelli (Hepaticae), Nicotiana tabacum (Angiospermae)
ABELOOS, M. Prof. – Lab. de Biol. Gén., Fac. des Sci., Place Victor Hugo, 13 MARSEILLE, France
ABERCROMBIE, M. – Strangeways Res. Lab., Worts Causeway, CAMBRIDGE CB1 4RN, England
a. Cell relations in tissue culture. Gallus gallus (Aves), Mus musculus (Rodentia) (with G. A. DUNN and C. P. MAGILL)
ABRO, A. – Anat. Inst., Univ. of Bergen, Arstadvei 19, 5000 BERGEN, Norway
ACCORDI, Miss F. – Ist. di Zool. ‘Federico Raffaele’, Viale dell’Università 32, 00161 ROMA (7), Italy
a. Differentiation and developmental correlations between hypophysis, adrenals, and gonads. Rana esculenta (Anura), Gallus gallus (Aves) (with H. MANELLI, L. MASTROLIA, and E. MILANO-GRASSI)
b. Experiments on PNMT (phenylethanolamine-N-methyl transferase) activity in embryonic adrenals. Gallus gallus (Aves)
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. Oryctolagus cuniculus (Lagomorpha)
Viability
Foetal
Sensitivity
Fil.Dr.,
Trophoblast
Effect
Delayed
Development..
Determination---
Hormone
Interactions
Fucoglycoproteins
Experimental
Fine
In
Ultrastructure
AFZELIUS, A.
AISENSTADT, T.
Aiko
ALONSO, A.
Alexandre, A.
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Portugal.
Italy
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ALONSO, A.
Alexandre, A.
Alexandre, A.
AMADO, A.
a Experimental teratology and teratological screening. (Rodentia)


AMPRINO, R. M. D., Prof. - Inst. of Human Anat., Fac. of Med., Univ. of Bari, Policlinico, 70124 BARI, Italy

a Relations between ectoderm and mesoderm in the morphogenesis of the wing. Gallus domesticus (Aves)
b Regulative capacities of the wing anlage. Gallus domesticus (Aves)
c Relations between cell density and cell proliferation in the limb bud. Gallus domesticus (Aves)

ANDRES, G. Dr., Prof. - Inst. für Allgem. Zool. der Johannes Gutenberg Univ., Saarstr. 21, 65 MAINZ, B.R.D. (Germany)


a Developmental enzymology. Drosophila spec. (Diptera), Gallus domesticus (Aves)

ANDRIEUX, B. Dr. 3ème cycle - Centre de Rech. d'Ivry sur Seine du CNRS, 67 rue Maurice Günzburg, 94200 IVRY sur SEINE, France

a Organogenèse et cytodifférenciation de l'hypophyse (microchirurgie, cytolgie ultrastructurale). Mammalia (Urodela)

ANTON, H. I. Dr. phil. Prof. - Zool. Inst. der Univ., Weyertal 119, 5 KOLN 41, B.R.D. (Germany)

a Protein metabolism during regeneration processes. Triturus vulgaris, T. alpestris (Urodela)

b Amino acid metabolism in regenerating tissues. Ambystoma mexicanum, Triturus vulgaris (Urodela)
c DNA synthesis and cell cycle determination in regenerating systems. Same species as a

APEKIN, V. S. - All-Union Res. Inst. of Marine Fish. and Oceanogr. (VNIRO), Lab. of Physiol. and Biochem. of Fishes, V.Krasnoselskaya Str. 17, MOSCOW 107140, U.S.S.R.

a Experimental and immunological study of maturation processes. Gobius melanostomus, G. batrachcephalus, Mugil cephalus, M. auratus (Teleostei)

APELT, G. Dr. rer. nat. - I. Zool. Inst. der Univ. Erlangen-Nürnberg, Universitätstr. 19, 852 ERLANGEN, B.R.D. (Germany)

a Biology of trophophora and allied larvae, especially histology of sense organs (apical plate etc.), (Annelida and other Coelomata)
b Identification of subsurface filamentous protein associated with early cleavage stages. Patococcus triqueter (Polychaeta)
c Function of mitotic apparatus proteins in the interphase part of the cell cycle. Patococcus triqueter (Polychaeta)

ARANEGUA, Miss A. - Ist. F.Olóriz, Fac. of Med., Univ. of Granada, GRANADA, Spain

a Foetal heart malformations after irradiation. Gallus domesticus (Aves) (with L. ALVAREZ)
b Description of late stages in heart development. Same species as a

AREF, I. M. M.D. - Max-Planck-Inst. für Immunbiol., Stefan-Meier-Str. 8, 78 FREIBURG i.Br., B.R.D. (Germany)

a Protein synthesis in early cleavage. Oryctolagus cuniculus (Lagomorpha)

ARIENS KAPPERS, J. M.D., Prof. - Netherl. Centr. Inst. for Brain Research, Jijdijk 28, AMSTERDAM-O., Netherlands

ARNOLDS, W. J. A. M.Sc. - Zool. Lab., State Univ. of Utrecht, Transitorium III, Univ. centrum 'De Uithof', UTRECHT, Netherlands

a Investigations of albumen uptake in embryos by means of immunofluorescent tracing of albumen proteins and foreign proteins. Lymnaea stagnalis (Gastropoda)

ARONSCHTAM, A. - Inst. of Cytol. and Genet., Acad. of Sci. of the USSR, NOVOSIBIRSK 630090, U.S.S.R.

a Isozymes in developmental genetics. Drosophila melanogaster, D. simulans (Diptera)
b Regulation of gene action during development. (Mollusca: Echinodermata)

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 hypophysis. Rana temporaria (Anura)

ARORA, H. L. Ph.D. - address unknown

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

a Gonadogenesis. Atherina mochon, Gobiobus cobitis, Solea vulgaris (Teleostei)

ASHBURNER, M. Ph.D. - Dept. of Genet., Univ. of Cambridge, Milton Rd., CAMBRIDGE CB4 1XH, England

a Control of gene action during development, especially studied in puffing. Drosophila melanogaster (Diptera)


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)

ASHWORTH, J. M. - Dr. - Dept. of Biochem., Leicester Univ., LEICESTER LE1 7RH, England

a Effect of growth conditions (especially glucose) on development of amoebae. Dictyostelium discoideum (Acritasidae)

b Genetic analysis of temperature sensitive and other mutant strains. Same species as a

ASTAUROV, B. I. Dr. biol.sci., Prof. - Inst. of Developm. Biol., Acad. of Sci. of the U.S.S.R.,
Vavilov St. 26, MOSCOW 117334, 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

AUGSTEN, H. Dr.habil., Prof. – Sekt. Biol.-Pflanzenphysiol., Friedrich Schiller Univ., von-Hase-Weg 3, 69 JENA, D.D.R. (Germany)

a The relationship between metabolism and development. (Gramineae)

b Some problems of metabolism (enzyme activities) during germination and growth. Pism sativum (Papilionaceae)

AUGUSTI (TOCCO), Mrs. G. Dr. – Lab. of Molec. Embryol., Consiglio Naz. delle Ricerche, Via Toiano 2, 80072 ARCO FELICE (Napoli), Italy

a Neuronal maturation in vitro, especially role of cell membrane. (Mammalia)

b RNA and protein biosynthesis related to neurite outgrowth in neuroblastoma cultures. (Mammalia)

AUROUX, M. Dr. en Méd., Prof. – Lab. d'Histol.-Embryol., Fac. de Méd. de Bicêtre, 45 rue des Sts.Pères, 75 PARIS 6e, 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'apprêntissage). 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'apprêntissage 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

BABAYEVA, Mrs. A. G. Dr.med.sci. – Inst. of Human Morphol., Acad. of Med. Sci. of the USSR, Schekpin St. 61/2, MOSCOW 125110, U.S.S.R.

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

BABURINA, Mrs. E. A. Dr.biol.sci. – Inst. of Developm. Biol., Acad. of Sci. of the USSR, Vavilov St. 26, MOSCOW 117334, U.S.S.R.

a DNA synthesis and cell cycles during eye development, especially development of regional differences in neural retina and pigment epithelium. Acipenser stellatus, A. güldenstädtii (Chondrostee) (with V. I. MITASHOV, O. G. STROEVA, and V. F. SINITSINA)

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 migration within the embryo. Gallus domesticus (Aves) (with M. R. BELLAIRS)

b Electron microscopy of the talpid mutant. Gallus domesticus (Aves) (with M. R. BELLAIRS)

c Cell junctions in the embryo. Gallus domesticus (Aves)

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

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


a Cytology of embryonic retardation and activation. (Carnivora; Rodentia)

b State of maternal endocrine glands during embryonic diapause and activation. (Carnivora; Rodentia)

BAFFONI, G. M. Dr.Biol.Sci., Prof. – Ist. di Anat. Comp., Univ. di Modena, Via Berengario 14, 41100 MODENA, Italy

a Growth and differentiation of the nervous cell. (Cyclostomata; Teleostei; Amphibia; Aves; Mammalia)

b Numerical variations of ventricular and extraventricular mitoses in regenerating nervous tissue. Xenopus spec., Rana spec. (Anura), Triturus spec. (Urodela)

c Regeneration of nerve fibres during larval life. (Urodela)

d Differentiation of epidermal and intestinal epithelia. (Annelida; Crustacea)

BAILLY, Miss S. E. Dr.es Sci. – Lab. d’Embryol., Univ. Paris VI, 4 place Jussieu, 75230 PARIS Cedex 05, France

a Spectrophotometry and chromosomal structures. Pleurodeles waltl ii (Urodela)

BAKER, T. G. Ph.D. – Hormone Lab., Dept. of Obstet. and Gynaecol., Univ. of Edinburgh, 39 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 Structure and hormonal control of the placenta in organ culture. Homo sapiens (Primates)

BALLARD, K. J. Dr. – Dept. of Physiol., Univ. of Glasgow, GLASGOW, Scotland, U.K.
a Distribution of dead cells in limb buds (day 12–17, supra-vital staining). Rattus spec. (Rodentia)
b Ultrastructural cytochemistry of mesenchymal cell differentiation in limb buds, especially plasma
membrane properties and alterations preceding cell death. Rattus spec. (Rodentia)
BALLS, M. D.Phil. – School of Biol. Sci., Univ. of East Anglia, University Plain, NORWICH, 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)
BALTUS, Miss E. J. D.Sc. – Dept. of Molec. Biol., Free Univ. of Brussels, 67 rue des Chevaux, 1640
ROHDE ST.GENESE, Belgium
a Mechanism of in vitro maturation. Xenopus laevis (Anura)
BALTZER, F. Dr., Prof. (Emer.) – Zool. Inst., Univ. of Bern, Sahlist. 8. 3012 BERN, Switzerland
ISDB
BARABANOV, V. M. Cand.biol.sci. – Inst. of Human Morphol., Acad. of Med. Sci. of the USSR,
Shchepkin St. 61/2, MOSCOW 125110, U.S.S.R.
a Immunochemistry of eye lens, retina, and iris development. Gallus domesticus (Aves)
TORINO, ITALY
a Morphogenetic processes of the wing following removal of some parts. Gallus domesticus (Aves)
b Effect of subnormal temperatures on mitosis of heart cells cultured in vitro. (Aves)
c Mitoses of binucleate cells (Aves)
d Effect of mitotic agents on nerve fibres from spinal ganglia growing in vitro. (Aves)
e Effect of bee venom on heart cells and nerve fibres growing in vitro. (Aves)
BARRAGALLO (PATTI), Mrs. J. Dr. – Ist. di Zool., Univ. di Catania, Via Androne 81, 95124
CATANIA, Italy
BARBOZA AYUCAR, E. Dr. en Med. – Serv. de Embriol. Exper., Cat. de Anat., Univ. de Valladolid,
VALLADOLID, Spain
BARIGOZZI, C. Dr. Sci., Prof. – Ist. di Genet., Univ. di Milano, Via Celoria 10, 20133 MILANO, Italy
ISDB
a Differentiation potency of cultured cells injected into larvae. Drosophila melanogaster (Diptera)
BARLOW, P. W. Dr.Phil. – A.R.C. Unit of Developm. Bot., Univ. of Cambridge, 181A Huntingdon
Rd., CAMBRIDGE CB3 0DY, England
a Regeneration of the root cap and its role in root growth and morphology. Zea mays (Gramineae)
b Kinetics of root meristem cell populations. Zea mays (Gramineae), Pisum sativum (Papilionaceae)
c Onset of nucleic acid synthesis in the early seed germination and the properties of the earliest
formed RNA. Secale cereale (Gramineae)
d Anatomical, physiological, and cytochemical changes caused by ethylene and indole acetic acid.
Pisum sativum (Papilionaceae)
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)
BARRON, Miss A. A. M.Sc. – Immunol. Sect., Dept. of Bacteriol., Univ. of Aberdeen, Foresterhill,
ABERDEEN AB9 2ZD, Scotland, U.K.
a Development of antibody forming cells in the foetus. Cavia porcellus (Rodentia)
BARSACCHI, Miss G. Dr.Biol.Sci. – Chair of Histol. and Embryol., Univ. of Pisa, Via A. Volta 4,
56100 PISA, Italy
ISDB
a In vitro induction of oocyte maturation by hormones. Triturus spp. (Urodela)
b RNA/DNA cytological hybridization on lampbrush chromosomes. Triturus spp. (Urodela)
BARSON, A. J. M.D. – Dept. of Pathol., Univ. of Manchester, Stopford Bldg., Oxford Rd., MAN-
CHESTER 13 9PL, England
a Craniospinal dysraphia produced by rabbit antibodies to chick nervous tissue. Gallus domesticus
(Aves)
b Biophysics and biochemistry of spinal cord growth. Homo sapiens (Primates)
c Ultrastructure of normal and abnormal neurulation. Gallus domesticus (Aves)
BART, A. Dr.ès Sci. – Serv. de Biol. Anim., Univ. des Sci. et Techn. de Lille, B.P. 36, 59650
VILLENUEVE D’ASCQ, France
b RNA/DNA cytological hybridization on lampbrush chromosomes. Triturus spp. (Urodela)
BARSON, A. J. M.D. – Dept. of Pathol., Univ. of Manchester, Stopford Bldg., Oxford Rd., MAN-
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a Craniospinal dysraphia produced by rabbit antibodies to chick nervous tissue. Gallus domesticus
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b Biophysics and biochemistry of spinal cord growth. Homo sapiens (Primates)
c Ultrastructure of normal and abnormal neurulation. Gallus domesticus (Aves)
BART, A. Dr.ès Sci. – Serv. de Biol. Anim., Univ. des Sci. et Techn. de Lille, B.P. 36, 59650
VILLENUEVE D’ASCQ, France
ISDB
a Morphogenesis and regeneration. Carausius morosus (Phasmida)
b Mitosis in regeneration (experimental study, hormonal regulation) Same species a (with
A. DEFOSSÈZ)
c Wing morphogenesis and regeneration (experimental study, ultrastructure). Sipylodea sipylus
(Phasmida) (with Mrs. E. BROWNAYES)
BAUMANN, J. A. Dr., Prof. – Inst. d’Anat., Univ. de Genève, 20 rue Ecole de Médecine, 1211
GENÈVE 4, Switzerland
a Ultrastructure et biologie de l’embryon. Gallus domesticus (Aves)
b Développement du système neuro-végétatif périphérique. Gallus domesticus (Aves)
pendorf, Martinistr. 52, 2 HAMBURG 20, B.R.D. (Germany)
a Development of monoamine-containing neurons in the brain. Mus musculus, Rattus spec.
(Rodentia)
BAUER, R. Dr. – Anat. Inst. der Univ., Pestalozzist. 20, 4056 BASEL, Switzerland
a Morphometry of placenta; comparison of placental villous surface with volume of fetus 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., Univ. de Nancy 1, Case Off. 140,
a Morphogenesis of skeleton. (Reptilia; Aves; Mammalia)
b Embryonic membranes. (Reptilia)
c Regeneration. (Reptilia)

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)
c Cleavage. Gallus domesticus (Aves) (with F. LORENZ, Davis, Calif.)
d Electron microscopy of the taldipid mutant. Gallus domesticus (Aves) (with M. BACKHOUSE, and D. EDE, Glasgow)

BELUSOV, L. V. Cand.bioc.sci. – Chair of Embryol., Biol. Fac., State Univ. of Moscow, Lenin Hills, MOSCOW 117234, U.S.S.R.
a Spatial distribution and physical nature of the forces involved in shaping of epithelial layers. Obelia spec., Dynamena spec., Hydra spec. (Hydrozoa) and of mesodermal cell masses (Amphibia)
b Metabolic gradients, their physico-chemical nature and interrelations with morphogenetic processes (development of planula, budding). Obelia spec., Hydra spec. (Hydrozoa) (Echinodermata)
c Mechanics of blastomere arrangement in spiral cleavage. Lymnæa spec. (Gastropoda)

BENAZZI (LENTATI), Mrs. G. Prof. Emer. – Ist. di Zool. e Anat. Comp. dell’Univ., Via A. Volta 4, 56100 PISA, Italy
a Chromosome cycles in amphigonic and pseudogamous biotypes; determinism of pseudogamy and polyploidy. (Tricladiidea, Turbellaria)

BENAZZI, M. Prof. Emer. – Ist. di Zool. e Anat. Comp. dell’Univ., Via A. Volta 4, 56100 PISA, Italy ISDB
a Asexual reproduction, pseudogamy, polyploidy and heredity. (Tricladiidea, Turbellaria)

BENEDETTI, I. Dr.Biol.Sci. – Ist. di Anat. Comp., Univ. di Modena, Via Berengario 14, 41100 MODENA, Italy
a Mitotic activity in the nervous system. Viviparous and oviparous spp. (Teleostei)
b Development of intramedullary ganglion cells. Jordanella floridae, Coregonus spec., Perca fluviatilis, Crenilabrus quinquemaculatus (Teleostei)

a Etude in vitro de l’embryon. Mus musculus (Rodentia)
b Etude expérimentale in vitro de la gastrula. Mus musculus (Rodentia)

a Development of enzyme systems before and after birth. Rattus spec. (Rodentia), Homo sapiens (Primates)

a Concentration of urea in blood serum, uterine secretion and blastocoelic fluid. Oryctolagus cuniculus (Lagomorpha)

BEREITER-HAHN, J. Dr.phil.nat., Prof. – Arb.gr. Kinemat. Zellforsch., Univ., Senckenberganlage 27, 6000 FRANKFURT/M., B.R.D. (Germany)
a Variation of dry mass/water ratio in different parts of the egg from fertilization through first cleavage (interference microscopy). Pammecinus miliaris (Echinoidea)
b Electron microscopy of pigment granule formation in melanophores. Pterophysillum scalaré (Cichliidae), Lebistes reticulatus (Poecli Idahoi, Teleosti)
c Hormonal induction of keratinization in epidermal cells in tissue culture (time-lapse cinemicrography, histochemistry, electron microscopy). Same species as b
d Ultrastructure of the development of flame cells in the skin. Hippocampus. (Teleosti)

BERENDES, H. D. Dr., Prof. – Dept. of Genet., Univ. of Nijmegen, Toernooiveld, Nijmegen, Netherlands ISDB
a Induction and repression of puff activity in polypene chromosomes. Drosophila spp. (Diptera)
b Gene function and differentiation in salivary gland cells. Drosophila spp. (Diptera)
c Hormonal regulation of postembryonic development. Drosophila spec., Chironomus spec. (Diptera)

BERGERARD, J. Dr.és Sci., Prof. – Lab. de Zool., Centre d’Orsay, Univ. Paris-Sud, 91405 ORSAY, France
a Effects of thermal stress on sexual differentiation. Carausius morosus (Phasmida)
b Effects of thermal stress and supernumerary chromosomes on development. Locusta migratoria (Orthoptera)

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

BERKOVITZ, B. K. B. – Anat. Dept., Bristol Univ., University Walk, BRISTOL BS8 1TD, England
a Descriptive study of tooth development. Salmo gairdneri (Teleostei), Lepidosteus spec. (Holostei), Cephaloporus, Rattus norvegicus (Rodentia), Physiseter macrocephalus (Cetacea), Putorius p.uro (Carnivora) and other Vertebrata

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

BERNARD, F. Lic. Sci. – Lab. de Zool., Dépt. de Biol., Univ. sci. et Méd. de Grenoble, B.P.53, 38041 GRENOBLE, France

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

BERNDORFER, A. Dr.med.habil. – Childrens Hosp. ‘Paul Heim’, Dept. for Congenital Malformations, Üllés ut 86, BUDAPEST VIII, Hungary – Private adress: Benzezut utca 39/a, BUDAPEST VI, Hungary

c Clinical embryopathology.

d Intrauterine regeneration of congenital malformations.

e Biological study of malformations.

f Etiology of malformations from clinical viewpoints.

BERNOCCHI, Miss G. – Dept. of Histol. and Embryol., Univ. of Pavia, Piazza Botta 10, 27100 PAVIA, Italy

a Histological analysis of catecholamines and 5-HT (5-hydroxytryptamine). (Mollusca)

b Histophotometric quantitative determination of nuclear DNA during the development of the central nervous system. Rattus norvegicus (Rodentia)

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)

c Regeneration in the central nervous system. Rattus spec. (Rodentia)

BERTINI, Miss M. M.D. – Cell and Molec. Biol. Lab., Dept. of Human Anat., Univ. of Torino, Corso M. d’Azeglio 52, 10126 TORINO, Italy

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


Experimental developmental morphology of the olfactory organ. Salmo spec. (Teleostei)

BERTOLANI, R. Dr.Biol.Sc. – Ist. di Anat. Comp., Univ. di Modena, Via Berengario 14, 41100 MODENA, Italy

a Sex ratio and karyology in parthenogenetic and amphigonic species. Macrourus Richteri, M. hufelandi, M. aureolatus (Tardigrada)

b Morphology of neotenic and metamorphosed animals. Triturus alpestris (Urodela)

BERTOLINI, B. Dr.Biol.Sc. – 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 spec. (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

BERTON, J. P. Dr. – Lab. de Biol. de la Reprod., Univ. de Paris VI, B.P.261, 75827 PARIS-Cedex 17, France

BESSE, G. – Lab. de Physiol. et Génét. des Crustacés, Univ. de Poitiers, 40 av. du Recteur Pineau, 86022 POITIERS, France

a Influence des facteurs externes et internes sur les cycles sexuels des femelles. Ligia oceanica, Porcellio dilatatus (Isopoda, Crustacea).

BETTANIN (BELGRANO), Mrs. S. Dr.Nat.Sci. – Ist. di Zool., Univ. di Genova, Via Balbi 5, 16126 GENOVA, Italy

a Embryonic 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)


a Isolation and characterization of cell membrane components responsible for species-specific cell cell contact formation. Dictyostelium discoideum (Acrasiales)

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. Mus musculus (Rodentia)

b Histochemistry of enamel maturation. Rattus norvegicus (Rodentia)

BEYSE, J. Dr.rer.nat., Dipl.Biol. – Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, B.R.D. (Germany)

a Relations between electrolyte milieu and gene activities in giant chromosomes; direct measurements of ion contents in nuclei and cytoplasm. Chironomus thummi (Diptera)

BEZEM, J. J. Ir. – Zool. Lab., State Univ. of Utrecht, Transitorium III, Univ.centrum ‘De Uithof’, UTRECHT, Netherlands

a Computer simulation of embryonic development. (with Chr. P. RAVEN)

BIAGIONI, Mrs. M. Dott.Sci.Nat. – Ist. di Biol. Gener., Univ. di Perugia, Via del Giochetto, 06100 PERUGIA, Italy

a Influenza dei sali di cobalto sull’eritropoiesi. Oryctolagus cuniculus (Lagomorpha)

BIELANSKA (OSUCHOWSKA), Mrs. Z. Dr., Prof. – Dept. of Histol. and Embryol., Warsaw Agric. Univ., ul. Grochowska 272, WARSZAWA, Poland

BIERNE, J. Dr.es Sc. – Lab. de Biol. Cell., Univ. de Reims, B.P. 347, 51062 REIMS-Cedex, France


a RNA synthesis in early stages. Lymnaea stagnalis (Gastropoda)
b Relation between division chronology and early differentiation. Same species as a
BIJTEL, Miss J. H. D.Sc., M.D. – De Boelelaan 275, ‘Zuidwende’, AMSTERDAM 1011, Buiten-
veldert, Netherlands
ISDB
BILLAT (CARLIER), Mrs. C. D.E.S. – Lab. de Physiol. Anim., Univ. de Reims, B.P. 347, 51062
REIMS Cedex, France
a Electron microscopy of foetal liver and of cultured foetal hepatocytes.
BILLETT, F. S. Ph.D. – Dept. of Biol., The Univ., Bldg.25, SOUTHAMPTON SO9 5NH, England
a The formation of mitochondria in oocytes. Carassius spec., Pachypanchax playfairii (Teleostei),
Ambystoma mexicanum, Xenopus laevis (Amphibia).
b The formation of cilia in the epidermis. Ambystoma mexicanum (Urodela)
BILLINGTON, W. D. Ph.D. – Dept. of Pathol., Univ. of Bristol, University Walk, BRISTOL BS8
1TD, England
a Immunology of reproduction. Mus musculus (Rodentia), Homo sapiens (Primates)
b Biology of the trophoblast. Same species as a
c Early embryonic development. Mus musculus (Rodentia).
BILO, Mrs. A. – Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, B.R.D. (Germany)
a Juvenile hormone, inorganic ions and puffing patterns in giant chromosomes. Chironomus
thummi (Diptera)
BIRCH-ANDERSEN, A. – State Serum Inst., Amagerboulevard 80, 2300 COPENHAGEN S, Denmark
a The ultrastructure of normal and pathological sperm. Bos taurus (Artiodactyla) (with E. BLOM, 
State Vet. Serum Lab.)
266A, 8057 ZÜRICH, Switzerland
ISDB
a Characterization of ribosomal DNA. Xenopus laevis (Anura)
b Characterization of 9s labelled messenger RNA. (Echinooidea)
BISCONE, J. C. Dr.és Sci. – Lab. de Neurophysiol., Univ. des Sci. et Techn. du Languedoc, Place 
E.Bataillon, 34 060 MONTPELLIER, France
a Ontogénese du systéme nerveux central (radioautographie). Rattus norvegicus (Rodentia)
House, Langford, BRISTOL BS18 7DU, England
a Gametogenesis. Bos taurus, Sus domesticus (Artiodactyla), Felis domestica, Canis familiaris
(Carnivora), Equus caballus (Perissodactyla)
a Effect of nerve growth factor on early development. Gallus domesticus (Aves)
BLANCHET, J. P. Dr.Spéc. – Sect. de Biol. Génér. et Appl., Univ. de Lyon 1, 43 Bd. du 11 
Novembre 1918, 69621 VILLEURBANNE, France
a Evolution des deshydrogénases lactiques au cours de l’erythropoïèse embryonnaire. Gallus domesticus 
(Aves)
b Characterization of erythrocyte membrane proteins during development. Gallus domesticus 
(Aves)
BLECHSMIDT, E. Dr.med., o.ö.Prof. – Anat. Inst. der Univ., Kreuzbergring 36, 34 GOTTIN-
GEN, B.R.D. (Germany)
a Die pränatalen Organsysteme. Homo sapiens (Primates)
b Funktionelle Differenzierungen. Homo sapiens (Primates)
BLECHSMIDT, M. Dr.med. – Anat. Inst. der Univ., Kreuzbergring 36, 34 GOTTINGEN, B.R.D. 
(Germany)
a Ultrastruktur und funktionelle Entstehung der Muskulatur. Gallus gallus (Aves), Homo sapiens 
(Primates)
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 (Artiodac-
tyla)
b The ultrastructure of normal and pathological sperm. Bos taurus (Artiodactyla) (with A. BIRCH-
ANDERSEN, State Serum Inst.)
BLUMINK, J. G. Ph.D. – Hubrecht Lab. (Internat. Embryol. Inst.), Uppsalalaan 1, Universiteits-
centrum ‘De Uithof’, UTRECHT, Netherlands
a Experimental analysis of ultrastructural changes during cytokinesis, and in the egg cortex during
 gastrulation. Xenopus laevis (Anura)
b Analysis of ultrastructural changes during morphogenesis in the salivary gland. Rattus norvegicus,
Mus musculus (Rodentia)
BLUZAT, R. R. Dr.3ème cycle – Lab. de Zool., Centre d’Orsay, Univ. Paris-Sud, 91405 ORSAY, 
France
a Structure and ultrastructure of germinal determinant in the egg. Leptinotarsa decemlineata 
(Coleoptera)
b Sensitivity to ionizing irradiation in embryogenesis: 1. relation to repair or non-repair of lesions;
2. relation to synthesis of informational macromolecules. Leptinotarsa decemlineata (Coleoptera)
BOCZKOWSKA, Mrs. J. B.Sc. – Dept. of Histol. and Embryol., Acad. of Med., ul. Narutowica 60,
ŁODZ, Poland
BODELET, B. – Lab. d’Embryol., Univ. de Nancy 1, 31 rue Lionnois, 54 NANCY, France
Giochetto, 06100 PERUGIA, Italy
a Protein synthesis in liver cells in vitro. Gallus gallus (Aves)
BOHN, H. Dr.rer.nat. – Zool. Inst. der Univ., Luisenst. 14, 8 MÜNCHEN 2, B.R.D. (Germany)
a Regeneration and transplantation of limbs; polarity and gradient systems. Leucophaea maderae,
Morphogenetic activity of epidermis in vitro. (Insecta)

BOILLY, B. Dr.es Sci., Prof. – Lab. de Morphol. Expér., Univ. des Sci. et Techn., B.P. 36, 59650 VILLENEUVE D'ASCQ, France

a Development of regeneration cells (dedifferentiation, activation, differentiation); determination of this development. (Annelida)

b Factors of development, especially regenerative, especially nervous system, larval contacts. (Annelida)

BOLTTZY, S. von Ph.D. – Lab. Arago, 66650 BANYULS-sur-MER, France

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

BONARIC, J. C. Dr.Spéc. – Lab. de Zool.II (Morphol. et Ecol.), Univ. des Sci. et Techn. du Languedoc, Place E.Bataillon, 34060 MONTPELLIER, France

a Ecophysiology of post-embryonic development. Pisaura mirabilis (Araneida, Arachnida) morphogenesis, especially development of specific morphogenetic disturbances. (Tissue)

b The action of magnetic field on nervous system development. Rana esculenta, Bufo vulgaris (Anura)

electron microscopy of vitellogenesis. Branchiobdella pentodonta (Oligochaeta)

BONS, J. Dr.és Sci. – Lab. de Zool.II, (Morphol. et Ecol.), Univ. des Sci. et Techn. du Languedoc, Place Eugène Bataillon, 34060 MONTPELLIER, France

a Embryonic development. Agama bibroni (Lacertilia)

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

a 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, Transitorium III, Univ.centre 'De Uithof', UTRECHT, Netherlands

a Influence of puromycin on cell cycle. Lymnaea stagnalis (Gastropoda)

b Significance of early cleavage cycles and programmed division pattern; correlation of division anomalies and abnormal division chronology with specific morphogenetic disturbances. Lymnaea stagnalis (Gastropoda)

BOPP, M. Dr.rer.nat., Prof. – Bot. Inst., Univ. Heidelberg, Hofmeisterweg 4, 69 HEIDELBERG, B.R.D. (Germany)

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

b Development; morphogenesis of protolemma. Funaria hygrometrica (Bryophyta)

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

d Tissue culture. Nicotiana tabacum and other spp. (Angiospermae)

BORGHESI, E. M. D., Dr.Biol.Sci., Prof. – Ist. di Anat. Umana Norm., Univ. di Napoli, Via Sergio Pansini 5, 80131 NAPOLI, Italy

a Secretion in embryonic salivary glands (electron microscopy). Mus musculus (Rodentia)

BOROWSKI, R. Dr. – Dept. of Anat., Free Univ., Kön.-Luisestr. 15, 1 BERLIN 33, B.R.D. (Germany)

a Development of the liver. Mus musculus, Rattus spec. (Rodentia)

b Development of blood tissue. Mus musculus, Rattus spec. (Rodentia)

BOSEL, R. Dr. – WE Inst. für Psychol., FB 12 der Freien Univ., Kelchstrasse 31, 1 BERLIN 41, B.R.D. (Germany)

a First appearance, early development, and analysis of the outgrowth of nerve fibers in the brain (stage 9 to 17). Gallus domesticus (Aves)


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

BOSSY, J. G. M. M.D., Prof. – Dept. of Anat., Univ. of Montpellier, Section of Nîmes, av.Kennedy, 30000 NîMES, France

a Development and maturation of the central nervous system in the fetus. Homo sapiens (Primates)

b Anencephaly and similar defects. Homo sapiens (Primates)


a Analysis of dorso-ventral and cranio-caudal polarity in mesoderm induction. Ambystoma mexicanum (Urodela) (with P. D. NIEUWKOOP)

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

c The origin of the dorso-ventral polarity of the egg. Discoglossus pictus, Xenopus laevis (Anura) (with P. D. NIEUWKOOP, K. HARAE, and G. A. UBBELS)


a Microchemical analysis of differentiation in the intestinal epithelium and in bone-marrow cells. Rattus spec., Mus musculus (Rodentia)


a Oogenesis. (Lacertilia)

BOUCAUT, J. C. – Lab. d'Embryol., Univ. Paris VI, 4 place Jussieu, 75230 PARIS Cedex 05, France

a Expression of mosaicism in allophenic chimaeras. Pleurodeles waltli, Ambystoma mexicanum (Urodela)

Seminal ISDB Endogenous Experiments Ontogenesis Regeneration Biosynthesis The Chondrogenesis Dept. Biochemistry Rearing Relative Rearing Dr.Spec. Synthesis Effects a BOZDZILOVSKAYA, b BOUVET, a BOURSNELL, BOURY BRAITHWAITE, a d c a BRAHMA, b BRAGT, a BRAUM, BRANDLE, BRADY, a BREED, a T. (Anura) 57 synthesis. 
Coregonus (with Janskerkhof GEN, Altona (Urodela), BOCHUM-Querenburg, (scanning A. movement D. 57, 1640 RHODE ST.GENESE, Belgium ISDB a Origin, nature, and role of cytoplasmic DNA. Xenopus laevis (Anura) b Effects of 'conditioned medium' from dissociated morulae on development and nucleic acid synthesis. Paracentrotus lividus (Echinoidea) c Synthesis of DNA, RNA and protein, and energy production during maturation. Xenopus laevis (Anura) d Concanavalin A binding to cell membranes during development. Xenopus laevis (Anura) 

BRADAMANTE, Z. M.D. - Inst. of Histol. and Embryol., Fac. of Med., Univ. of Zagreb, P.O.Box 166, Šalata 3, 41001 ZAGREB, Yugoslavia a Chondrogenesis in the external ear. Rattus norvegicus (Rodentia) (with A. ŠVAJGER) 

BRADY, T. Dr. - Dept. of Genet., Univ. of Nijmegen, Toernooveld, NIJMEGEN, Netherlands a Messenger utilization in differentiated cells. Drosophila hydei (Diptera) 

BRAGT, J. van Dr., Ir. - Dept. of Horticult., Agric. Univ., Haagsteeg 3, P.O.Box 30, WAGENIN-GEN, Netherlands a Endogenous hormone levels and parthenoarpic fruit set. Pirus spec., Malus spec. (Rosaceae) b Endogenous cytokinins and regeneration of sprouts on leaf cuttings. ornamental spp. (Angio- spermae) 


BRANDLE, K. A. Dr.ren.nat., Prof. - Zool. Inst. der Univ., Siesmayerstr. 70, 6 FRANKFURT/M., B.R.D. (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 d Rearing of isolated limb pairs together with different parts of the spinal cord in parabiosis with a hypothethic lack of movement coordination. Ambystoma mexicanum. Triturus spp. (Urodela) e Rearing of isolated tandem heads (like b) in parabiosis with a host for study of nerve connections between doubled optic and vestibular sense organs and the CNS. Ambystoma mexicanum (Urodela), Xenopus laevis (Anura) 

BRAUM, E. Dr. - Inst. für Hydrobiol. und Fisch.wiss., Univ. Hamburg, Olbersweg 24, 2 HAMBURG-Altona 1, B.R.D. (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) 


BREPOHL, W. Dr.med. - Lehrstuhl für Anat.1, Ruhr-Univ., Buscheyst., Postfach 2148, 463 BOCHUM-Querenburg, B.R.D. (Germany) a Ontogenesis of neurons in bulbus olfactorius, mucosa olfactoria, sense organs, and receptors (scanning electron microscopy, autoradiography, tissue culture, cinematography). (Vertebrata)
A Time lapse microcinematography of ooplasm flows during early embryogenesis in connection with alterations of egg architecture. Pimpia turionellae (Hymenoptera)
b Ooplasm flows in centrifugated and in ligated eggs. Same species as a
BRUN, J. L. Dr.és Sci., Prof. – Sect. de Biol. Génér. et Appl., Univ. de Lyon 1, 43 Bd. du 11 Novembre 1918, 69621 VILLEURBANNE, France
a Adaptation aux températures élevées. Caenorhabditis elegans, Aphenlochoides compressolica (Nematoda)
b Genetic determination and development of dwarf mutants. Same species as a
c Synaptonemal complex and DNA synthesis in oogenesis. Caenorhabditis elegans, Parascaris equorum (Nematoda)
d Physiology and genetics of aging in a hermaphrodite. Caenorhabditis elegans (Nematoda)
BRUNNERT, A. – Zool. Inst., Univ. Zürich, Künstlergasse 16, 8006 ZURICH, Switzerland
a Metaplasia in medusae. Podocoryne carnea (Hydrozoa)
a Etude descriptive et expérimentale de la formation et de la différenciation des somites. Rana dalmatina, Bufo bufo, Discoglossus pictus (Anura)
brégénérations de la queue au cours du développement précoce. Rana dalmatina, Bufo bufo (Anura)

BREUCKER, Miss H. Dr. – Anat. Inst. der Univ. Hamburg, Martinistr. 52, 2000 HAMBURG- Eppendorf, W.Germen
a Cytological differentiation in white-mottled mutants. Drosophila melanogaster, D. hydei (Diptera)
BRICHOVÁ (MULLEROVÁ), Mrs. H. M. M.D. – Inst. of Embryol., Fac. of Med., Charles Univ., Albertov 4, 128 00 PRAHA 2, Czechoslovakia
a Electron microscopy of microglial cells during postnatal development. Rattus rattus (Rodentia)
BRIDGE (VUILLET), Mrs. M. Lic.és Sci. – Lab. de Zool., Univ. de Besançon, Place Maréchal Leclerc, 25030 BESANÇON, France
a Développement embryonnaire de la glande uropygienne. (Aves) (avec L. GOMOT)
BRIGLEB, W. Dr rer.nat. – Inst. für Flugmedizin der DFVLR, Kölnstr. 70, 53 BONN-Bad Godesberg, B.R.D. (Germany)
a Einfluss von Licht und hoher Temperatur auf die Ontogenese einer neotenen Art aus einem Höhlenbiotop. Protes auquinus (Urodelta)
b Teratogenic and genetic anomalies induced by simulated weightlessness (fast running clinostat). Tribolium confusum (Coleoptera) (with J. NEUBERT)
c Effect of simulated weightlessness on ultrastructure of the embryonic vestibuular organ. (Anura) (with J. NEUBERT)
J. Biol. Zool., 50 Av. F. D. Roosevelt, 1050 BRUXELLES 5, Belgium
ISDB
BROEK, H. W. J. van den Dr., Ir. (Agric.) – Dept. of Genet., Agric. Univ., Gen. Foulkesweg 53, WAGENINGEN, Netherlands
a Biochemical and genetic aspects of floral induction and its regulation. Silene armeria (Caryophyllaceae)
b Regulation of transcription. Aspergillus spp., Neurospora spp. (Fungi)
BRÖNDSTED, H. V. Dr.Phil., Prof. (Emer.) – Stockholmsgade 23, 2100 COPENHAGEN Ø, Denmark
ISDB
a Physiology and regeneration. (Porifera; Turbellaria)
BROWAEYS, Mrs. E. – Serv. de Biol. Anim., Univ. des Sci. et Techn. de Lille, B.P. 36, 59650 VILLENEUVE D’ASCQ, France
a Wing morphogenesis and regeneration (experimental study, ultrastructure). Sipylloidea sipylus (Phasmida)

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

Epithelio-mesenchymal

Metabolism

Biochemical

Antigenic

Differentiation

Vascular

Synthesis

M.l).

Induction

Etude

Mutants

Body

Chromosome

Larval

Dr.

Enzyme

Dr.es

M.D.,

Developpement

Lab.

s

1SDB

Immunochemistry

a

CANTINO,

c

CAPESIUS,

d

CAPANNA,

e

CAMPANTICO,

f

g

D.

TORINO.

(Anura).

DIT),

PERUGIA,

(Anura

D.

E.

(Aves)

CROTTE),

S.

(Anura

I.

B.S.

A.

Pleurodeles

E.

B.S.

Miss

A.

P.

R.

P.

Prof.

B.

Heteropeza paradoxus),

Mycophila speyeri, Miastor castaneae (Cecidomyiidae, Diptera)

b

Chromosome elimination in early cleavage in females and regulation of chromosome number after meiosis in males (time-lapse cinematography and ultrastructure). Heteropeza pygmaea (Cecidomyiidae, Diptera)

c

Vascular patterns of the spinal cord under normal and experimental conditions. Gallus domesticus (Aves)

f

Infrastructure of the cells germinales. (Anura)

Es

hyothalamomectomized tadpoles. Bufo bufo (Amphibia)

b

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

a

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

c

CAMPANTICO, E. Dr. — Inst. of Histol. and Embryol., Univ. of Torino, Via Giolitti 34, 10123 TORINO, Italy

a

Body growth, development, 131I uptake and synthesis of mono- and diiodothyrosine (MIT, DIT), triiodothyronine (T3), and thyroxine (T4) by hypothalamometomized tadpoles. Bufo bufo (Amphibia) (with D. E. S. TRUMAN)


a

Antigenic studies of lens regeneration. Xenopus laevis, Triturus alpestris (Amphibia) (with D. E. S. TRUMAN)

c

Regulatory mechanisms in lens regeneration. Xenopus laevis (Anura)


a

Histogenesis of neurons. Protoporus annectens (Crossopterygii)

CAPESIUS, Miss I. Dr. — Bot. Inst., Univ. Heidelberg, Hofmeisterweg 4, 69 HEIDELBERG, B.R.D. (Germany)

a

Synthesis of DNA and RNA in developing organs and tissues of seedlings and in callus cultures. Sinapis alba (Cruiciferae), Petroselinum (Umbelliferae)

b

Enzyme synthesis in seedlings. Sinapis spec. (Cruiciferae)

CAPURON, A. P. Drés Sci., Prof. — Lab. d’Embryol., Univ. des Sci. et Techn. de Lille, B.P. 36, 59650 VILLENEUVE D’ASCO, France

a

Origine, migration et différenciation des cellules germinales primordiales (cultures embryonnaires). Pleurodeles waltlil (Urodelta)

b

Induction et organogenèse de la bouche et des dents in vivo et in vitro. Same species as a

CARIČIĆ, R. M.D., Prof. — Inst. of Histol. and Gen. Embryol., Univ. of Perugia, Via del Giocheto, 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

CARLON (CROTTE), Mrs. N. Dr.en Méd. — Lab. d’Histol. et Embryol.II, Univ. d’Aix-Marseille, 27 Bd. Jean Moulin, 13385 MARSEILLE CEDEX 4, France

a

Développement des gonades. Gallus domesticus (Aves), (Mammalia)

CARUSO, A. B.S. — Inst. of Histol. and Gen. Embryol., Univ. of Perugia, Via del Giocheto, 06100 PERUGIA, Italy

20
Histochemical analysis of morphogenesis in vitro compared with that in vivo. Gallus domesticus (Aves)

CASSAGNE-MÉJEAN, Mrs. F. Dr.Éc Sci. – Lab. de Zool.II, (Morphol. et Ecol.), Univ. des Sci. et Techn. du Languedoc, Place Eugène Bataillon, 34060 MONTPELLIER, France

Embryonic and post-embryonic development and metamorphosis. Arrenurus spec. (Hydrachnel- lae, Acarina, Archnida)

CAVALLIN (THOMAS), Mrs. M. Dr.Biol.anim. – Lab. de Zool. Expér., Univ. de Bordeaux I, Av. des Facultés, 33405 TALENCE, France

Recherches descriptives et expérimentales sur la morphogénèse de l'appareil génital. Carausius spec., Ciliomnum spec. (Phasmida)

CAZAUX, C. Dr.Éc Sci. – Inst. de Biol. Marine, Univ. de Bordeaux I, 2 rue du Prof.Jolyet, 33120 ARCACHON, France

Larval development from egg (artificial fertilization, rearing in the laboratory) and larval ecology in the area of the 'Bassin d'Arcachon'. (Polychaeta)

CEDARD (WILLSTAETTER), Mrs. L. M.D., Ph.D. – Lab. de Chim. Horm., Maternité de Port-Royal, 123 Bd. de Port Royal, 75014 PARIS, France

Action of gonadotropins on steroidogenesis and glycogenolysis in placenta perfused in vitro; demonstration of the role of cyclic AMP as intercellular mediator. Homo sapiens (Primates)

Biosynthesis of steroids and cholesterol in organ cultures of immature gonads; influence of HCG (human chorionic gonadotropin) on steroidogenesis. Gallus domesticus (Aves)

Variations and regulation of gonadotropin, oestrogen, and progesterone synthesis in placenta. Homo sapiens (Primates)


Role of ions in regulating gene function. Chironomus spec. (Diptera)

CERMELE, D. M.D. – Dept. of Dermatol., Univ. of Pavia, Policlinico S.Matteo, 27100 PAVIA, Italy

Quantitative and qualitative histochemical changes in skin during fetal life. Homo sapiens (Primates)

CHALLONER, Miss S. Ph.D. – Hormone Lab., Dept. of Obstet. & Gynaecol., Univ. of Edinburgh, 39 Chalmers St., EDINBURGH 3, Scotland, U.K.

Hormonal control of ovary development, oogenesis, and follicular growth. Mesocricetus auratus (Rodentia)

Cytology of germ cells in vivo and in vitro. (Rodentia: Primates)

CHALOUPOKA, Z. MUDr., Csc. – Inst. of Pathophysiolog., Charles Univ., Lidická 1, 306 05 PLZEŇ, Czechoslovakia

Effect of afferentation in early postnatal life on the formation of temporary connections. Rattus norvegicus (Rodentia)

Development of functional abilities of the auditory system. Rattus norvegicus (Rodentia)

CHALUMEAU (LE FOULGOC), Mrs. M. Th. Dr.Éc Sci. – Lab. d’Embryol., Univ. Paris VI, 4 place Jussieu, 75230 PARIS Cedex 05, France

Protein patterns in relation with activity of genome. Ambystoma mexicanum (Urodela)

CHAMBOLLE, P. Dr.Éc Sci. – Lab. de Biol. Anim. A, Univ. Bordeaux I, Av. des Facultés, 33405 TALENCE, France

Expériments sur la gestation. Gambusia spec. (Teleostei), Salamandra spec. (Urodela)

Développement in vitro. Gambusia spec. (Teleostei)

L’ultrastructure des oeufs. Same species as b

CHAMORRO, J. M. – Inst. F.Oloriz, Fac. of Med., Univ. of Granada, GRANADA, Spain

Prenatal development of viscera. Homo sapiens (Primates)

Foetal development of thymus and lymphoid organs. Homo sapiens (Primates)

CHANCION (MAURY), Mrs. M. Dr.3e Cycle – Lab. d’Anat. Comp., Univ. Paris VII, 2 Place Jussieu, 75005 PARIS, France

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 iriadeus, S. fario (Teleostei) (with Ch. DEVILLERS)

Descriptive study of the developing nuclei in the prosencephalon. Salmo iriadeus (Teleostei)

Morphogenesis of forebrain, optic tracts and optic centres. Salmo iriadeus (Teleostei) (with P. CLAIRAMBault)

CHANDEBOIS, Miss R. Dr. – Lab. de Morphogénét. Anim., Univ. de Provence – Centre St.Charles, Place Victor Hugo, 13331 MARSEILLE-Cedex 3, France

Activity of the undifferentiated material in normal and regenerating animals (electron microscopy, tissue culture, irradiation). Dugesia subtentacularata, D. gonocephala (Turbellaria)

Equilibria between the two cell types of the undifferentiated tissue and equilibria between this undifferentiated tissue and the differentiated cells. Same species as a

CHANTURISHVILI, P. S. Dr.biologisti, Prof. – Dept. of Anim. Embryol., Inst. of Zool., Acad. of Sci. of the Georgian SSR, 31 Chachvadze Ave., TBILISI 380030, U.S.S.R.

Activity of embryonic intestine to antigens. Gallus domesticus (Aves)

The overembryonic albuminous crater during embryonic development, especially grapefruit dust adherence to the crater; formative processes in albuminous and yolk covers. Gallus domesticus (Aves) (with I. S. GOSCHICETELIANI, Kutaisi)

CHARLES, R. Dr. – Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands

Developmental changes in activity of liver carbamylphosphate synthetase. Ambystoma mexicanum (Urodela)

Histones in early embryonic development. Xenopus laevis (Anura)
ISDB

CHARNIAUX (COTTON), Mrs. H. Dr.ès Sci., Prof. – Lab. d’Evol., Fac. de Sci. de Paris, 105 Bd.Raspail, 75 PARIS Vle, France

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


a Biochemistry and physiology of the embryo. Gallus domesticus (Aves)

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

a Paragonal substance, amino acids and peptides. Drosophila melanogaster, D. spec. (Diptera)

CHEVALLIER, A. D. Dr.spéc. – Lab. de Zool., Dépt. de Biol., Univ. Sci. et Méd. de Grenoble, B.P.53, 38041 GRENOBLE, France

a Development of axial skeleton, rib basket and girdles in homo- and xenoplastic transplantation experiments. Gallus domesticus, Coturnix japonica (Aves)

CHEVREAU, J.-P. Dr.en Méd., Prof. – Dépt. d’Histol.-Embryol., Univ. Paris-Val de Marne, 6 rue du Gen.Sarrail, 94000 CRETEIL, France

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

CHIBON, P. Dr.ès Sci., Prof. – Lab. de Zool., Dépt. de Biol., Univ. Natl. et Méd. de Grenoble, B.P.53, 38041 GRENOBL, France

a Nuclear labelling of embryonic cells (autoradiography). Pleurodeles waltl, Triturus alpestris (Urodela)

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

c Origin and differentiation of teeth. (Amphibia)

d 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


a Morphology, cytchemistry, and autoradiography of oogenesis. Acerina cernua (Teleostei)

b The process of gametogenesis under ionizing radiation. (Periformes, Teleostei)

CHOROSZLSKWA-LELCINSKA, Mrs. A. Dr. biol. – Dept. of Exper. Embryol., Inst. of Obstet. and Gynecol., Med. Acad., Karowa 2, 00-315 WARSAWZA, Poland

a Effect of different proportions of amino acids in maternal blood on the embryo. Rattus spec. (Rodentia)


CHRIST, B. Dr.med. – Lehrstuhl für Anat.I, Ruhr-Univ., Buscheystr., Postfach 2148, 463 BOCHUM-Querenburg, B.R.D. (Germany)

a Development of vertebral column. Gallus domesticus (Aves)

d Differentiation of somites. Gallus domesticus (Aves)

ČIHÁK, R. MUDr., D.Sc. – Dept. of Anat., Charles Univ., U nemocnice 3, 12800 PRAGA 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, 75005 PARIS, France

a Morphological and experimental studies of brain development. Discoglossus pictus, Rana pipiens, Bufo regularis, Rhacophorus spec., Nectophrynoides occidentalis (Anura), Pleurodeles waltl (Urodela)

b Morphogenesis of forebrain, optic tracts and optic centres. Salmo irideus (Teleostei) (with M. CHANCONIE)

c Development of the optic tracts and optic centres. (Anura) (with M. J. PICOUET)

d Development of the optic system. Gallus domesticus (Aves) (with J. P. RAFFIN)

CLARK (LATTO), Mrs. J. C. B.Sc. – Dept. of Zool., Univ. of Glasgow, GLASGOW G12 8Q, Scotland, U.K.

a Primordial germ cells: history and properties from fertilization to arrival in gonadal ridges. Xenopus laevis (Anura)

b Transplantation immunology and tolerance of organ specific antigens and histocompatibility antigens. Xenopus laevis (Anura)

CLAUVERT, A. J. J. Dr.méd. – Inst. d’Embryol., Univ. de Strasbourg, 11 rue Humann, 67085 STRASBOURG, France

a Eye development and lens differentiation

b Teratogenic effect of glucose injection into the amniotic cavity

CLAUVERT, J. M. J. Dr.ès Sci., Prof. – Inst. d’Embryol., Univ. de Strasbourg, 4 rue Kirschleger, 67085 STRASBOURG Cedex, France

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

c Chimiotératogènes (venoms). (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 Immunocochemistry 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)

d Properties of lens mRNAs; regulation of stability. Gallus domesticus (Aves) (with D. E. S.
TRUMAN, A. T. H. BURNS (Edinburgh), R. WILLIAMSON and C. DRIEWENCIEWICZ (Glasgow)

CLEGG, E. J. M.D., Ph.D. – Dept. of Human Biol. and Anat., Univ. of Sheffield, Western Bank, SHEFFIELD S10 2TN, England
(no embryological work in progress)


a Attempts to grow and to develop the caryopsis under anoxic conditions. (Graminaceae)

COCK, A. G. Ph.D. – Dept. of Biol., Univ. of Southampton, SOUTHAMPTON S09 5NH, England

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

COGETTI, G. Dott.Chim. – 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 (Echinidea)

b Chromatin structure in embryos. Same species as a

c Biosynthesis of clila proteins during oogenesis. Same species as a

COHEN, Jack Ph.D. – Dept. of Zool. and Comp. Physiol., Univ. of Birmingham, P.O.Box 363, BIRMINGHAM B15 2TT, England

a Fertility of various sperm populations, especially from fallopian tubes, tested by competition with fresh sperm of different genotype. Oreotagus cuniculus (Lagomorpha), Mus musculus (Rodentia)

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

a Biochemistry and cell kinetics of cytodifferentiation, especially blood formation and myogenesis in developmental mutants. Gallus domesticus (Aves), Mus musculus (Rodentia)

COLLENOT, A. Dr.Vét., Dr.es Sci., Prof. – Centre de Rech. d’Ivy sur Seine du C.N.R.S., 67 rue Maurice Günsbourg, 94200 IVRY sur Seine, France

b Analyse expérimentale des mécanismes de la différenciation sexuelle des gonades. (Amphibia)

c L’expression des gènes léthaux: ulcére et léthal mitotique. Pleurodeles waltl (Urodela)

COLLIN, J. P. Dr.es Sci. – Lab. de Biol. Anim., Univ. Clermont-Ferrand, Complexe Sci. Cézeaux, 24 Av. des Landais, 63170 AUBIÈRE, France

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

b Embryogenesis and phylogeny 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)

COLLIN, K. Dr.rer.nat. – Zool. Inst. der Univ., Weyertal 119, 5 KOLN 41, B.R.D. (Germany)

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

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

a Comparative spermatogenesis. (Ascidiae)

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

a In vitro culture of embryonic cells; aggregation. Schistocerca gregaria (Orthoptera)

b Effect of juvenile hormone mimetics on embryos and embryonic cells. Same species as a

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

a Possible cooperative steroidogenesis between corpus luteum and placenta in estrogen synthesis and in pregnancy maintenance. Rattus spec. (Rodentia)

COMOGlio, P. M. M.D. – Cell and Molecular Biol. Lab., Dept. of Anat., Univ. of Torino, Corso M.d’Azeglio 52, 10126 TORINO, Italy

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

CORNECI, J. P. Dr.spéc. – Lab. de Morphogénét. Anim., Univ. de Provence – Centre St.Charles, Place Victor Hugo, 13331 MARSEILLE-Cedex 3, France

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


a Development of central nervous system function (electrophysiology)

1. Electroencephalogram and its relation to embryonic behaviour and neuronal activity patterns.

2. Chemical energy production and utilization during critical periods of functional development in the embryo. 3. Neurological bases for the maturation of spontaneous and reflex patterns of movement (brain stimulation and lesion studies; electrical activity in explants). Gallus domesticus (Aves)

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

CORNUZ, Mrs. R. – Dépt. de Biol. Moléc., Inst. Suisse de Rech. Expérîm. sur le Cancer, rue Bugnon 21, 1011 LAUSANNE, Switzerland

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

COURJO ANTELO, Miss A. Dr.nat.sci., Dr.biol.sci. – Ist. di Zool. ‘Federico Raffaele’, Viale dell’Università 32, 00161 ROMA (7), Italy – General Mola 88, MADRID 6, Spain

a Differentiation of thyroid and parathyroid glands in the embryo in vivo and in vitro. Gallus gallus (Aves)

a Mécanismes biochimiques de l'oogénèse. Xenopus laevis (Anura)
denker, H. W. Dr. rer. nat., Dr. med. - Arbeitsgr. Prof. G. H. M. Gottschewski am Max-Planck-Inst. für Immunbiol., Stefan-Meier-Str. 8, 78 FREIBURG i.Br., B.R.D. (Germany)

a Histochemistry of acid mucosubstances and enzymes in early stages (fertilization up to implantation). Oryctolagus cuniculus (Lagomorpha), Mus musculus, Rattus norvegicus, Mesocricetus auratus, Cavia porcellus (Rodentia)
b Development and check of enzymes in early stages. (Lagomorpha; Rodentia)
denie, M. P. Ph.D. - Dept. of Forest and Wood Sci., Univ. Coll. of North Wales, BANGOR, Caerns., Wales, U.K.

a Environmental control of xylem development. Pinus sylvestris, Picea sitchensis (Gymnospermae)
denucé, J. M. Dr., Prof. - Dept. of Zool., Cathol. Univ., Toernooiveld, NIJMEGEN, Netherlands

a Morphology, physiology, and biochemistry of the hatching glands. Oryzias latipes, Brachydanius rioo (Teleostei), Xenopus laevis (Anura)
b Changes in protein pattern during development. Ephydatia fluviatilis (Potifera), Bombyx mori (Lepidoptera), Oryzias latipes, Brachydanius rioo (Teleostei)

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)
c Mosaicism. Mus musculus (Rodentia)
deparis, P. Dr.Biol. - Lab. de Biol. Gén., Univ. Paul-Sabatier, 118 Rte de Narbonne, 31077 TOULOUSE Cedex, France

a Hematopoiesis. (Urodela)
b Tissue transplantation. Pleurodeles waltlii (Urodela)
dépêché, J. - Lab. de Biol. de la Reprod., Univ. de Paris Vi, B.P.261, 75827 PARIS-Cedex 17, France

a Viviparity and developmental biology. Poecilia reticulata (Teleostei)
dépotceller, Miss B. Ph.D. - Lab. of Molec. Embryol., Consiglio Naz. delle Ricerche, Via Toiano 2, 80072 ARCO FELICE (Napoli), Italy

a Enzymonic controlling DNA synthesis in developing embryos. Paracentrotus lividus (Echinoidae)
deray, A. Lic.ès Sci., Doct. 3è Cycle - Lab. de Zool., Univ. de Besançon, Place Maréchal Leclerc, 25030 BESANÇON, France

a Différenciation sexuelle des hybrides et des individus des espèces parentes. (Aves) (avec L. GOMOT)
derksen, J. Drs. - Dept. of Genet., Univ. of Nijmegen, Toernooveld, NIJMEGEN, Netherlands

a Biochemistry and ultrastructure of specific nuclear ribonucleoprotein fractions. Drosophila hydei (Diptera)
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 nucleioli and nucleocytoplasmic relationships. Xenopus laevis (Anura)
destrelé, O. H. I. Drs. - Anat-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands

a Histones in early embryonic development. Xenopus laevis (Anura)
DESAUX, F. X. M.Sc. – Lab. d'Embryol., Univ. Paris VI, 4 place Jussieu, 75230 PARIS Cedex 05, France
a Electrolytic variation of proteins in ontogenesis. Pleurodeles waltlji (Urodela)

DESEVEAUX (CHABROL), Mrs. J. Lie.ès Sci. – Inst. d'Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France
a mRNA synthesis at the polysomal level in embryonic skin; hydrocortisone effects on free and bound polyamines of nine days embryonic skin. Gallus domesticus (Aves) (with L. SORIANO)

DEITLFAFF, Mrs. T. A. Dr.biol.sci., Prof. – Inst. of Developm. Biol., Acad. of Sci. of the USSR, Vavilov St. 26, MOSCOW 117334, U.S.S.R. ISDB
a Regularities of the maturation process. (Acipenseridae, Chondrostei; Amphibia) (with S. I. DAVIDOVA and T. B. AISENSTADT)
b Regularities of development of the mitotic cycle during cleavage. Same species as a

c Relative duration of development and normal table. Ambystoma mexicanum (Urodela) (with V. P. BOZDZILOVSKAYA)

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

DEUCHAR, Miss E. M. Ph.D. – Anat. Dept., Bristol Univ., University Walk, BRISTOL BS8 1TD, England
a Processes of neural induction and early differentiation (tissue culture). 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 Effects of maternal immune sera and lymphocytes on embryonic tissues in vitro. Mus musculus (Rodentia)

DEVILLERS, Ch. Dr.ès Sci., Prof. – Lab. d'Anat. Comp., Univ. de Paris VII, 2 place Jussieu, 75 PARIS Ve, France ISDB
a Respiration during early stages of egg development, especially relation with oxidative phosphorylations as shown by the action of 2,4-dimotophenol and some inhibitors of respiration. Salmo irideus, S. fario (Teleostei) (with M. CHANCONIE)

DE VINCENTIIS, M. Prof. – II. Chair of Histol. and Embryol., Univ. of Napoli, Via Mezzocannone 8, 80134 NAPOLI, Italy ISDB

DEWS, E. Dr.rer.nat. – Inst. für Entw. physiol., Univ. zu Köln, Gyrohofst. 17, 5 KOLN 41, B.R.D. (Germany)
a Experimental investigations on the post-embryonal development and regulation of male imaginal discs. Ephesia kühniella (Lepidoptera)

DHAINAUT, A. Dr.ès Sci. – Serv. de Biol. Anim., Univ. des Sci. et Techn. de Lille, B.P. 36, 59650 VILLENEUVE d'ASCQ, France
a Oogenesis in the absence of brain hormone. (Nereidae, Polychaeta)
b Golgi complex evolution and polysaccharide secretion in the oocyte. Nereis spec. (Polychaeta)
c Oogenesis and vitellogenesis. Sepia officinalis (Cephalopoda)


a Metamorphosis. (Ectoprocta)

DHOAUBILLY, Miss D. Dr.spec. – Lab. de Zool., Dépt. de Biol., Univ. Sci. et Méd. de Grenoble, B.P.53, 38041 GRENOBLE, France
a Experiments on the differentiation of the cutaneous appendages in chimaeric combinations between different species. (Reptilia; Aves; Mammalia)
b Induction of barb ridges in feather filaments (Aves)
c Ultrastructure of developing feather keratins. (Aves)

DICK, D. A. T. D.Sc., 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)

DIDIER (MARTIN), Mrs. E. Dr.ès Sci. – Lab. de Biol. Anim., Univ. de Clermont, B.P.45, 63170 AUßIEß, France
a Experiments on germ cell population and gonad organogenesis. (Aves)

DIETERLEN (LIEVRE), Mrs. F. Dr.ès Sci. – Inst. d'Embryol. Expér. du Coll. de France and du C.N.R.S., 11 Place M.Berthelot, 75 PARIS Ve, France ISDB
a La différenciation chimique du pancréas de l'embryon. Gallus domesticus (Aves) (avec D. BEAUPAIN)
b Demonstration of insulin and glucagon in dorsal and ventral pancreatic buds (immunocytology). Gallus domesticus (Aves)
c Experimental analysis of spleen morphogenesis. Gallus domesticus, Coturnix c. japonica (Aves)

DIETHELM, F. – Dept. d’Embryol. et Tératol. Exp., Inst. de Zool., Univ. de Fribourg, 1700 FRIBOURG, Switzerland
a Morphogenèse du neurocrâne. Gallus gallus (Aves)
b Action de l'actinomycine D et de la puromycine sur le développement de la tête embryonnaire. Gallus gallus (Aves)

DI GRANDÉ, Miss F. Dr. – Inst. of Zool., Univ. of Bologna, Via S. Giacomò 9, 40126 BOLOGNA, Italy
a X-ray destruction 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)
c Regeneration and origin of germ cells. Mercierella enigmatica (Serpulidae, Polychaeta)

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

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

DINI, F. Dr.Sc.Biol. - Ist. di Zool. e Anat. Comp. dell'Univ., Via A. Volta 4, 56100 PISA, Italy

- Development of nucleus and cytoplasm. Eupilotes spec. (Ciliata)

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

- Reticulocyte maturation in the embryo, Gallus spec. (Aves)

DJOBROWSKI, C. K. J. Dr. - Zool. Inst., Jagiellonian Univ., ul.Krupnica 50, KRAKÓW 2, Poland

- Teratogenetic and lethal effects of inorganic and organic chemicals and of physical factors; sensitive stages. Xenopus laevis and other spp. (Amphibia)

- Molecular and supermolecular mechanisms of regulation in different stages and organs; role of pigment and possibility of reverse transcription

- Cybernetic interpretation of effects of environmental factors on different stages of embryogenesis

DOHLE, W. Dr rer.nat. - I.Zool. Inst. der Freien Univ., Köln-Luise St. 1-3, 1 BERLIN 33, B.R.D. (Germany)

- Cell differentiation in the germ band. Diastylis rathkei (Cumacea, Crustacea)

- Germ band formation. Gammaurus pulex (Amphipoda), Neomysis vulgaris (Mysidacea, Crustacea)

DOHMEN, M. R. Drs. - Zool. Lab., State Univ. of Utrecht, Transitorium III, Univ.centrum 'De Uitho', UTRECHT, Netherlands

- Electron microscopy of developmentally significant cytoplasms and cell contacts in early cleavage. Lymnaea stagnalis, Bithynia tentaculata (Gastropoda)

DOLCEMASCOLO, G. Dr. - Ist. di Biol. Gen., Univ. di Palermo, Via Divisi 83, 90133 PALERMO, Italy

- Histochemistry and ultrastructure of oogenesis and embryology. (Ascidacea) (with V. MANCUSO and M. GIANGUZZA)

DOLLANDER, J. Dr. en Méd., Prof. - Lab. d'Embryol., Univ. de Nancy I, 31 rue Lionnois, 54 NANCY, France

DOMAC, Mrs. B. M.D., Sc.M.D. - Inst. of Histol. and Embryol., Fac. of Med., Univ. of Zagreb, Šalata 3, P.O.Box 166, 41001 ZAGREB, Yugoslavia

- Selective inhibitory effects of the hypophysis upon growth and differentiation of the adrenal glands in the fetus. Rattus norvegicus (Rodentia)

- Teratogenic effect of some tranquillizers on neural plate and tube derivatives (in vivo injection and histochemistry). Ortygolus cuniculus (Lagomorpha), Rattus spec. (Rodentia)

- Development and function of the pituitary-adrenocortical system in foetus and neonate (biochemistry, histology, histochemistry). Rattus norvegicus (Rodentia) (with K. MILKOVIĆ, Inst. of Biol.)

DOMENECH RATTO, G. - Dept. of Anat., Univ. of Barcelona, C/.Casanova 143, BARCELONA 11, Spain

- Development of the retina and lens. Gallus domesticus (Aves)

DONATO (CELI), Mrs. A. - Ist. di Zool. e di Anat. Comp., Univ. di Messina, Via dei Verdi 75, 98100 MESSINA, Italy

DONGEN, C. A. M. van M.Sc. - Zool. Lab., State Univ. of Utrecht, Transitorium III, Univ.centrum 'De Uitho', UTRECHT, Netherlands

- Biochemistry of protein synthesis during early development (radio-isotopes, disc-electrophoresis, isoelectric focusing). Lymnaea stagnalis (Gastropoda)

- Cell-lineage of normal and lobeless embryos. Dentalium spec. (Scaphopoda)

DOORENMALEN, W. J. van M.D., Prof. - Dept. of Med. Anat. and Embryol., State Univ. of Utrecht, Janskirkel 3A, UTRECHT, Netherlands

- Immunological and immunochemical investigations on lens proteins in induction and differentiation. (Aves), Homo sapiens (Primates)

DOSKOCIL, M. MUDr., D.Sc. - Dept. of Anat., Charles Univ., U nemocnice 3, 12800 PRAHA 2, Czechoslovakia

- Development of the pineal body. Gallus domesticus (Aves)

DOSTAL, M. MUDr. - Lab. of Plastic Surg., Dept. of Exper. Teratol., Czech. Acad. of Sci., Legerova 61, 120 00 PRAHA 2, Czechoslovakia

- Development of the secondary palate under normal and experimental conditions. Mus musculus, Rattus norvegicus (Rodentia)

- Elaboration of an appropriate method for testing the teratogenic activity of drugs. Same species as a


- Effect of seminal plasma on the metabolism and morphology of epididymal spermatozoa. Bos taurus, Ovis aries, Sus scrofa, Equus spp., Ortygolus cuniculus and other spp. (Mammalia)

- Lysosomal enzymes and spermatozoa. Ovis aries and other spp. (Mammalia)


- Embryology and viviparity. (Actinozoa)

DOWNIE, J. R., Ph.D. - Dept. of Zool., Univ. of Glasgow, GLASGOW G12 8QC, Scotland, U.K.

- Cell behaviour, mainly epithelial cells, in the expansion of the blastoderm. Gallus gallus (Aves)

- Development of specialised cell contacts in the early blastoderm. Gallus gallus (Aves)
The effects of hyperglycaemia and insulin on embryonic tissues grown in vitro. Gallus gallus (Aves)

The differentiation of adipose tissue in vitro. Gallus gallus (Aves)

Induction Computer Morphology Effects Stimulation Enzyme ISDB Effects Morphogenetische Nerve Induction 31 r.

Experimental Genetische Electrorn M.D., DYLEVSKY, b a c b a EAYRS, DZIUB a EBENDAL, a EDE, EDWARDS, a b EHN, b ELBLING, ELGER, a 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)

Yolk utilization during early embryogenesis. Gallus domesticus (Aves)

ISDB
b Yolk utilization and nucleic acid mobilization during early development (up to free-swimming larvae). Ophyryotrocha labronica (Polychaeta).


a Heterochrony in appearance and rate of development of dorsal and anal fin elements (radialia, musculature, fin rays, fin folds). Salmo salar, Esox lucius, Tetrapteronotus rubropictus, Rutulus rutulus, Callichthys fasciatus, Hoplochilus pleferi, Perca fluviatilis, Atherina hepsetus (Teleostei)

b Different ways by which new dorsal fins are ontogenetically formed. Salmoniformes, Clupeiformes, Gadiformes, Perciformes, Mugiliformes (Teleostei)

c Early postembryonic development and individual variability. Acipenser gildenstædttii, 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, 34060 MONTPELLIER, France

a Embryonic and post-embryonic development. Gasteracantha spec., Isoxya spec., Acrasomes spec. (Gasteracanthinae, Araneida, Arachnida)

EMIG, C. C. Dr.es Sci. – Station Marine d'Endoume, Univ. d'Aix-Marseille, Rue de la Batterie des Lions, 13007 MARSEILLE, France

a Lophophore regeneration after autotomy. Phoronis spec. (Phoronidea)

b Asexual reproduction: 1. Comparison with ontogenesis and phylogenesis, especially of nephridia and mesenteries; 2. Cell differentiation in stomach and oesophagus (electron microscopy) Same species as a

Anatomy, development, regeneration; phylogenetic affinities to Phoronidea. (Hemichorda)

EMMERT, W. Dr rer.nat. – Zool. Inst.I der Univ., Röntgenring 10, 87 WURZBURG, B.R.D. (Germany)

a Postembryonic development and metamorphosis, Calliphora erythrocephala (Diptera)

ENEMAR, E. A. W. Prof. – Inst. of Zool., Univ. of Gothenburg, Fack, S-400 33 GOTHENBURG 33, Sweden

a Development of hypothalamo-hypophysial connections. Rana temporaria (Anura)

ENGELS, W. Dr rer.nat., Doz. – Zool. Inst. der Univ., Badestr. 9, 44 MÜNSTER/Westf., B.R.D. (Germany)

a Speed of yolk formation; composition of reserve proteins (radio-isotopes, electrophoresis, cytology). Apis mellifera, A. cerana, A. florea, A. dorsata (Hymenoptera)

b Synthesis and spectra of hemolymph proteins (separation, immunotest). (Social Hymenoptera)

c Regulation and enzymatic conditions of glycogen synthesis in oogenesis (radio-isotopes). Musca domestica (Diptera)

ENGLAND, Mrs. M. A. Ph.D. – Dept. of Anat., Sch. of Med., Royal Free Hosp., 8 Hunter St., LONDON WC1N 1BP, Switzerland

a Primary neural induction. Gallus domesticus (Aves)

b Electron microscopy and histochemistry of yolk formation. Gallus domesticus (Aves) (with M. R. BELLAIRS)

ENGLÄNDER, H. Dr.med., Dr rer.nat., Prof. – Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, B.R.D. (Germany)

a Regionalspezifische Induktion. Ambystoma mexicanum, Triturus vulgaris, T. helveticus, T. alpestris (Urodela)

b Die Wirkung von Lithium auf die Differentierungsleistung des Ektoderms. Same species as a

c Disaggregation and Reaggregation von frühembryonalem Gewebe. Same species as a


a Phylogeny and ontogeny of phosphagen kinases. (Insecta; Pisces; Aves)

b Myogenesis in vitro. Gallus domesticus (Aves), Rattus spec. (Rodentia)

ERIKSSON, Miss M. M.D. – Lab. of Teratol., Karolinska Inst., S-104 01 STOCKHOLM 60, Sweden

a Induced fetal death late in pregnancy of special interest for animal tests of new drugs. Mus musculus (Rodentia)

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 Ultrastructure of the developing primary capillaries of the hypophyseal portal system. Mus musculus (Rodentia)


a In vitro and in vivo growth, determination, and differentiation of teratoma cells

EVANS, P. M. B.Sc. – Zool. Dept., Univ. Coll. of Wales, Penglais, ABERYSTWYTH SY23 3DA, Wales, U.K.

a Sorting out in mixed aggregates of embryonic tissue cells. Gallus domesticus (Aves)

b Role of surface carbohydrates in cellular adhesiveness. 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

FABER, J. Ph.D. – Hubrecht Lab. (Intern. Embryol. Inst.), Uppsalaalan 1, Universiteitscentrum 'De Uithof', UTRECHT, Netherlands

a Theoretical study of limb regeneration. Ambystoma mexicanum (Urodela)

FACCIO (DOLFINI), Mrs. 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)
b Cytological aspects of heterochromatin. Drosophila melanogaster (Diptera)
FACHBACH, G. Dr. phil., Zool. Inst. der Univ., Universitätstr. 2, A 8010 GRAZ, Austria
a Vergleichende Entwicklungsgeschichte. Salamandra salamandra subsp. (Urodela)

a Maturation of eggs, atresia of ovarian follicles, and regulation of these processes. Aceipenser ruthenus, A. stellatus (Chondrostei), Rutilus rutilus, Peltecos cultratus (Cypriniformes), Acerrina curnua, Macropodus opercularis, Hemichromis bimaculatus (Perciformes, Teleostei)

FALUGI, Mrs. C. Dr.Biol. – Ist. di Anat. Comp., Univ. di Genova, Via Balbi 5, 16126 GENOVA, Italy
a Cholinesterase and phosphatase activities in eggs and embryos. Balanus spec., Lepas spec. (Cirripedia, Crustacea)

a Experimentelle Untersuchungen zur Frage von Organ- und Schädelveränderungen auf Grund statistischer Veränderungen in der Postnatalperiode (Amputation der Vorderextremitäten). Rattus norvegicus (Rodentia)
b Untersuchungen des postnatalen Schädel- und Organwachstums nach pränatalem Einfluss peristatischer Faktoren (Lärmeinwirkungen). Rattus norvegicus (Rodentia)
c Der Maxillo-Mandibuläre Apparat nach chirurgisch-experimentellen Eingriffen in der Postnatalperiode. Oryctolagus cuniculus (Lagomorpha), Canis familiaris (Carnivora)
d Biometrische Organuntersuchungen und Osteogenese. Mesocricetus auratus (Rodentia)

FANTONI, A. M.D. – Lab. di Radiobiol. Anim., C.S.N. – Casaccia, C.P. 2400, 00100 ROMA, Italy

FARGEIX, N. Dr.,és Sci. – Lab. de Biol. Anim., Univ. de Clermont, B.P. 45, 63170 AUBIÈRE, France
a Germ cells and asymmetry of gonads. (Aves)

FARINA, Miss E. Dr. – Zool. Inst., Univ. of Palermo, Via Archirafi 18, 90123 PALERMO, Italy
a Haploid embryos produced by UV irradiation

FARINELLA (FERRUZZA), Mrs. N. D.Sc., Prof. – Zool. Inst., Univ. of Palermo, Via Archirafi 18, 90123 PALERMO, Italy
a Hybridization. (Asciidae)
b Xenoplasmic transplantation. (Amphibia)

FAUCOUNAU, Mrs. N. Lic.,és Sci. – Lab. de Biol. et d’Histol., Univ. de Bordeaux II, Place de la Victoire, 33 BORDEAUX, France
a Le rôle teratogène des hormones thyroïdiennes. (Aves)

FAULHABER, Miss I. E. W. Ph.D., Prof. – Inst. für Biochem. und Molek. Biol., Fachbereich 1 (Vorklinik), Freie Univ. Berlin, Arnimallee 22, 1 BERLIN 33, B.R.D. (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)

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, Ledeganckstr. 35 9000 GENT, Belgium
a Mechanism of maturation and segmentation divisions. Artemia salina (Anostraca, Crustacea)

a Experimental tetatogy and teratological screening (Rodentia)

FEDECKA (BRUNER), Mrs. B. Dr.,és Sci. – Inst. d’Embryol et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France
a Enzyme synthesis and activation during development. Gallus gallus (Aves)

FEIERTAG (KOPPEN), Mrs. C. C. M. Drs. – Genet. Inst., State Univ., Biol. Centrum, Kerklaan 30, HAREN (Gr.), Netherlands
a Oogenesis and fertilization; parthenogenesis. Tetranychus urticae (Acari, Arachnida)

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

FELIX, J. M. D.E.S., Dr.3e Cycle – Lab. de Physiol. Anim., Univ. de Reims, B.P. 347, 51062 REIMS Cedex, 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)

FELLON, Dame Honor B. – Dept. of Pathol., Div. of Immunol., Univ. of Cambridge, Lab. Block, Addenbrooke’s Hosp., Hills Rd., CAMBRIDGE CB2 2Q0, England
IsDB

FERRIER, Miss A. M.D. – Lab. of Embryol. and Cytogenet., Univ. Clinic of Gynecol. and Obstet., Geneva Univ., 20 rue Alcide-Jenster, 1211 GENEVE 4, Switzerland
a Spontaneous and induced abortions. Homo sapiens (Primates)

FERRIER, V. Lic.,és Sci. – Lab. de Biol. Gén., Univ. Paul-Sabatier, 118 Route de Narbonne, 31077 TOULOUSE Cedex, France
a Hybridisation intergénérique. Pleurodeles spec., Salamandra spec., Tylototriton spec. (Urodela)

FERRINI, U. M.D., Prof. – Ist. di Zool. ‘Federico Raffaele’, Viale dell’Università 32, 00161 ROMA, Italy
Biochemical events in polyspermic eggs. Paracentrotus lividus (Echinoida) (with H. MANELLI and E. DE MATTHAEIS)

Phyto-chemistry of cmbryonic ribosomes. Gallus gallus (Aves) (with H. MANELLI)


a Morphogenetic mutants in the wing disc. Drosophila spec. (Diptera)

FICO, Mrs. A. A. D.Sc., Prof. – Dept. of Molec. Biol., Frec Univ. of Brussels, 67 rue des Chevaux, 1640 RHODE ST.GEENSE, Belgium

a Étude autoradiographique du métabolisme au cours de l’oogénèse. Rana spec. (Anura)
b Observations autoradiographiques sur l’oogénèse et la morphogénèse. Pleurodeles spec., Triturus spec. (Urodela), Rana fusca (Anura)
c Effects of actinomycin D and histones on early differentiation of oocytes. Xenopus laevis (Anura)
d DNA synthesis during early oogenesis. Xenopus laevis (Anura)
e Template activities of chromatin in meiotic cells. Xenopus laevis (Anura)
f Protein metabolism in early oogenesis. Xenopus laevis (Anura), Ambystoma mexicanum (Urodela)
g DNA, RNA, and protein metabolism in pachytene cells during amplification of rDNA (autoradiography). Xenopus laevis (Anura)

FILOGAMO, G. M.D., Prof. – Dept. of Human Anat., Univ. of Torino, Corso M.D’Azeglio 52, 10126 TORINO, Italy

a Development of neuro-muscular connections and effect of α-bungarotoxine. Gallus domesticus (Aves)

FILONI, 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, thioracil, and hypophysectomy. Xenopus laevis (Anura)
b Stimulation of central nervous system regeneration power by transplantation of neuroblasts into the ventricular cavities. Xenopus laevis, Rana esculenta, Bufo bufo (Anura)
c Lens regeneration. Rana esculenta, R. dalmatina, Bufo bufo, Discoglossus pictus (Anura)
d Histology of normal and regenerated midbrain. Same species as b

cyclus

FISCHBERG, M. Dr.phil., Prof. – Stat. de Zool. Exp., Univ. de Genève, Rte de Malagnou 154, 1224 CHENE-BOUGERIES, Switzerland

FISCHER, A. Dr rer.nat. – Zool. Inst. der Univ., Weyertal 119, 5 KOLN 41, B.R.D. (Germany)
a Oocyste genetic activity with respect to orgene product. Platynereis dumerilii (Polyochaeta)
b Quantitative data on orgen-e activity by measurement of pterine pigment synthesis in the retina. Same species as a


a Action des rayons X et de l’hypothermie sur la morphogénèse des arcs aortiques. Gallus domesticus (Aves)
b Malformations. (Anura; Urodela)

FLEISCHHAUER, K. Dr.med., Prof. – Anat. Inst. der Univ., Abt. für Neuroanat., Nussallee 10, 53 BONN, B.R.D. (Germany)
a Postnatal development of the central nervous system: ependymy, subependymal layers, cerebral cortex. Felix domesticus (Carnivora), Homo sapiens (Primates)

FLINT, O. P. M.A. – Dept. of Zoöl., Univ. of Glasgow, GLASGOW G12 8QG, Scotland, U.K.
a Behaviour and differentiation of normal and mutant limb mesenchyme cells in vitro. Gallus gallus (Aves)
b Analysis of developmental mutants. Mus musculus (Rodentia)

FLÜCHTER, J. Dr rer.nat. – Bayerische Landesanstalt für Fischerei, Weilheimerstr. 8a, 813 STARNBERG, B.R.D. (Germany)
a Requirements for rearing larvae in very small containers. Solea solea (Teleostei)
b Rearing of fry. Lucioperca spec., Perca spec., Silurus spec., Coregonus spec. and others (Teleostei)

FLYNN, T. THOMSON, D.Sc., Prof. – address unknown

FONTAINE, Miss J. – Lab. d’Embryol., Univ. de Nantes, 38 Bd.Michelet, B.P.1044, 44037 NANTES CEDEX, France

a La différenciation des cellules a calcitonine et du glomus carotidi. Gallus gallus, Coturnix c. japonica (Aves)

FONITANA, F. Dr nat.sci. – Ist. di Zool., Univ. di Ferrara, Via Previdi 24, 44100 FERRARA, Italy

a Nuclear DNA change during moultting cycle. Schistocerca gregaria (Orthoptera)
b In vitro culture of embryonic cells; aggregation. Same species as a

FORD, P. J. D.Phil. – Dept. of Molec. Biol., Univ. of Edinburgh, King’s Buildings, Mayfield Rd., EDINBURGH EH9 3JR, Scotland, U.K.
a The synthesis of proteins by ovary in organ culture. Xenopus laevis (Anura)
b Control of nucleic acid synthesis in oogenesis, especially 5s RNA. Xenopus laevis (Anura)
c Synthesis and assembly of ribosomes during oogenesis, especially 5s RNA and associated proteins. Xenopus laevis (Anura)

FORSBERG, J.-G. Prof. – Inst. of Anat., Univ. of Bergen, Arstadvei 19, 5000 BERGEN, Norway

a Regulative mechanisms behind epithelial differentiation in the genital region. Mus musculus, Rattus spec. (Rodentia)
b Antigen content of the Müllerian epithelium. Mus musculus (Rodentia)

c Influence of antiandrogen substances on the differentiation of the male genital tract. Rattus

spec. (Rodentia)

d Heterologous transplantation. (Mammalia)

FORSSKAHL, B. Ph.Mag. – Dept. of Zool., Univ. of Helsinki, P.Rautatiekatu 13, 00100 HELSINKI

10, Finland

a Metamorphosis: imaginal disc formation and development, changes in endocrine organs (histology

and ultrastructure) in relation to different developmental cycles. Heteropeza pygmaea

(Cecidomyiidae, Diptera)

FORTAK, W. M.D. – Dept. of Histol. and Embryol., Acad. of Med., ul. Narutowicza 60, ŁÓDŹ, Poland

FORTI, G. Prof. – Ist. Botanico, Univ. di Bari, BARI, Italy

FOSSE, G. Dr.odont., Prof. – Anat. Inst., Univ. of Bergen, Arstadvei 19, 5000 BERGEN, Norway

a Growth of the head region (Rodentia)

FOURCHE, FORTI, a

FOURCHE, FORTI, a

FOWLER, FRAGOULIS, a

FRANCOIS, FRASCHINI, a

FRASER, FRASCHINI, a

FRENCH, a

FREUND, a

FRANCOIS, FRASCHINI, a

FRASER, FRASCHINI, a

FRENCH, a

FREUND, a
b Der Maxillo-Mandibuläre Apparat nach chirurgisch-experimentellen Eingriffen in der Postnatalperiode. Ortygolagus cuniculus (Lagomorpha), Canis familiaris (Carnivora)

FREYSSINET, G. Dr.spéc. - Sect. de Biol. Génér. et Appl., Univ. de Lyon 1, 43 Bd. du 11 Novembre 1918, 69621 VILLEURBANNE, France

a Les protéines ribosomiques durant la différenciation du chloroplaste. Euglena gracilis (Euglenophyceae)

FRIANT, Mrs. M. Dr.es Sci., Dr.en Méd., Prof. - Ecole d'Anthropologie, 1 Place d'Iéna, 75 PARIS XVe, France

a Development of the pelvic bones. (Reptilia; Aves; Mammalia)
b Development of the teeth. (Mammalia)
c Development of the brain. (Mammalia)
d Development of the pterygoid. (Aves)
e Development of cartilage, bone, and horn. (Vertebrata)
f Development of Meckel's cartilage. (Mammalia), Homo sapiens (Primates)

GABAJEVA, Mrs. N. S. Cand.biol.sc. - Dept. of Embryol., Leningrad State Univ., Mendelevsky St. 5, 199144 LENINGRAD, U.S.S.R.
a Organ and development of egg membrane. Asciensen fuldenstädtii (Chondrostei)
b Follicular epithelium morphology during oogenesis. Same species as a

GABRIEL-ROBEZ (KREMER), Mrs. O. Dr.en Méd. - Inst.d'Embryol., Univ. de Strasbourg, 4 rue Kirschleger, 67085 STRASBOURG, France

a Teratogenic effects of xenobiotics and oestrogens. (Aves, Mammalia)
b Urogenital system abnormalities. Mus musculus (Rodentia), Ortygolagus cuniculus (Lagomorpha)

GABRION (TROTIGNON), Mrs. J. B. M.es Sci. - Lab. dHistol. et d'Embryol., Univ. de Montpellier, 2 rue Ecole de Médecine, 34000 MONTPELLIER, France

a Neoteny: thyroid gland, hypophysis, skin, genital tract, and comparison with organs of normal animals (electron microscopy, cytochemistry, physiology). Triturus helveticus (Urodela)

a Morphology, cytochemistry, and autoradiography of oogenesis, especially nuclear apparatus behavior during oocyte growth. (Teleostei), (Fringillidae, Fassierformes, Aves)

GAILLARD, J. A. M.D. - Lab. d'Anat. Pathol. du Centre Hospitalier d'Evreux, rue Saint-Louis, 27 EVREUX, France

a Embryonic tumors; germ cell tumors; dyssembryomas of ovary and testis; blastematos tumors. Homo sapiens (Primates)
b Comparative developmental morphology of embryos and first stages of normal ova. Homo sapiens (Primates)
c Extra-embryonic structures in embryos. Homo sapiens (Primates)
d Experimental teratomas. Mus musculus (Rodentia)

GAILLARD, P. J. M.D., Prof. - Lab: for Cell Biol. and Histol., State Univ., Rijnsburgerweg 10, LEIDEN, Netherlands ISDB

a Hormones and bone development (organ culture, enzyme chemistry, isotope techniques). Mus musculus (Rodentia)
b Imidazol and its derivatives and bone development (organ culture). Same species as a

GAINO, Miss E. Dr.Biol.Sc. - 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)

GAJO, Miss M. M.D. - Dept. of Anat., Univ. Med. School, Kossuth L.40, SZEGED, Hungary

a Developmental histochemistry and electron microscopy of the autonomic ground plexus. Rattus rattus (Rodentia) (with B. CSILLIK, E. KNYIHAR and G. KÁLMÁN)

GALAND, G. D.E.S. - Lab. de Physiol. Anim., Univ. de Reims, B.P. 347, 51062 REIMS Cedex, France

a Functional development of small intestine. Rattus norvegicus (Rodentia)

GALLERA, J. D.Sc. - Lab. d'Embryol. Expér., Inst. d'Histol., Univ. de Genève, 20 rue de l'Ecole de Médecine, 1211 GENEVE 4, Switzerland ISDB

a Mechanisms involved in the induction process. Gallus domesticus (Aves)
b Comparison between the inductive capacities of the presumptive endoblast and mesoblast cells located in the primitive streak. Same species as a
c Alteration of the prospective fate and the inductive power of the definitive streak node. Same species as a
d Subcellular changes during early morphogenesis. (Aves) (with G. NICOLET)

GALLIEN, Cl. L. Dr.es Sci. - Lab. d'Embryol., Univ. Paris VI, 4 place Jussieu, 75230 PARIS Cedex 05, France

a Chronological study of nuclear activity after transplantation; analysis of enzyme systems. (Urodela)
b Electron microscopy of nuclear transplantation. Pleurodeles waltl (Urodela)

GALLIEN, L. Dr.es Sci., Prof. - Lab. d'Embryol., Univ. Paris VI, 4 place Jussieu, 75230 PARIS Cedex 05, France ISDB

a Nuclear anomalies after interspecific nuclear transplantation. Pleurodeles waltl, P. poireti, Ambystoma mexicanum, A. dumerilii (Urodela)
b Differentiation in explants and compatibility between different strains. Hydractinia echinata (Hydrozoa)

GALLO, G. - Ist. di Biol. Gen., Fac. di Med., Univ. di Roma, Policlinico Umberto l, 00100 ROMA, Italy

a Attempts to grow and to develop the caryopsis under anoxic conditions. (Gramineae)

LONDON SE1 7EH, England
da Development of peripheral nervous tissues in the foetus. Homo sapiens (Primates)
b Development of blood vessels in the central nervous system. 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)

GARDENGHI, G. Dr., Prof. – Inst. of Zool., Univ. of Bologna, Via S.Giacomo 9, 40126 BOLOGNA, Italy
a In vitro culture of larval gonads. Bufo bufo (Anura)
b Hormonic regulation of ovarian and Bidder's organ oogenesis. Same species as a

a Determination during early development. Mus musculus (Rodentia)
b Mechanism of X-chromosome inactivation. Mus musculus (Rodentia)

GARDNER, R. L. Ph.D. – Marshall Lab., Dept. of Physiol., Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3E, England

GAREL, J.-M. Dr. – Lab. de Physiol. Comp., Univ. de Paris VI, 4 place Jussieu, 75230 PARIS Cedex 05, France
a Parathyroid hormone and calcitonin: secretion, metabolism, and physiological role, especially in Ca, Mg, and P metabolism, before and after birth. (Mammalia)

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 Morphogenetic movement and cell adhesion. Dictyostelium discoideum (Acrasiales)
b Tissue-specific sorting-out of embryonic cells. Gallus domesticus (Aves)

a Incorporation of tritiated thymidine in gonads in organ culture of normal animals and after treatment with x-rays or steroid hormones. Gallus domesticus, Anas platyrhynchos (Aves)
b Gonadal growth during and after sexual differentiation. Same species as a

GASSER, F. Dr.Biol. – Lab. de Biol. Génér., Univ. Paul-Sabatier, 118 Route de Narbonne, 31077 TOULOUSE Cedex, France
a Genetical aspects of protein differentiation in embryonic and larval stages. Pleurodeles waltti (Urodela) (with J. C. BEETSCHEN)

GAUDECKER, Miss B. von Dr. rer.nat. – Anat. Inst. der Univ., Olshausenstr.40–60, 23 KIEL, B.R.D. (Germany)
a Ultrastructure and histochemistry of preupal and pupal salivary glands. Drosophila melanogaster (Diptera)

GAUGUIN, J. M.D., Prof. – Anat. Dept. C, Univ. of Copenhagen, 1 Universitetsparken, 2100 COPENHAGEN Ø, Denmark
a Development of the ultimobranchial body. Mus musculus, Rattus spec. (Rodentia)

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)

a Amniotic fluid analysis. Homo sapiens (Primates)
b Analysis of urinary estrogens during pregnancy. Homo sapiens (Primates)

GEELINK, J. A. G. Drs. – Psychopathol. and Neuropyschol. Lab., Dept. of Neurol., Univ. of Nijmegen, Berg en Dalseweg 105, Nijmegen, Netherlands
a History of the teratogenetic effect of vitamin A on young embryos, especially cephalic mesoderm, neural plate, and yolk sac placenta. Rattus norvegicus (Rodentia)
b Histological description of an hydrocephalic brain with meningoencephalocoele and aqueductal malformation. Oryctolagus cuniculus (Lagomorpha)

GEHRING, W. J. Ph.D., Prof. – Biozentrum der Univ. Basel, Abt. Zellbiol., Klingelbergstr. 70, 4056 BASEL, Switzerland
a Cell determination and differentiation in embryos and imaginal discs. Drosophila spec. (Diptera)

centrum ‘De Uithof’, UTRECHT, Netherlands
a Metabolism and respiration of egg and embryo. Lymnaea stagnalis (Gastropoda)
b Influence of various kations on development. Same species as a
c Mechanisms of cytodifferentiation in cleaving eggs. Same species as a
d Germinal localization in eggs. Dentalium spec. (Scaphopoda); Patella spec. (Gastropoda)

GENDEREN, H. H. van Drs. – Bot. Lab., State Univ., Lange Nieuwst.106, UTRECHT, Netherlands
a Tuber induction by plant hormones in axenic culture. Solanum spp., Dioscorea spec., Begonia evansiana (Angiospermae)

GENIS-GÁLTEZ, J. M. Med.Dr., Ph.D., Prof. – Dept. of Anat., Fac. of Med., Univ. of Sevilla, SEVILLA, Spain

37
Ontogenesis of the brain. (Cetacea)

GILLOT (PERDRIX), Mrs. S. – Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69 VILLEURBANNE, France


GINTER, E. K. Dr. – Lab. of Exp. Genet., Inst. of Med. Genet., Kashirskoye Chaussee 6a, 115478 MOSCOW, U.S.S.R.

a Sperm ultrastructure and acrosome reaction. Acipenser stellatus (Chondrostei) (Diptera)
b Cortical reaction of the egg and fertilization. Ambystoma mexicanum, Triturus vulgaris (Urodela)

Interaction of homoeotic and non-homoeotic genes during development. Same species as a

GIORDI, F. Dr. Biol. Sci. – Chair of Histol. and Embryol., Univ. of Pisa, Via Volta 4, 56100 PISA, Italy

a Structure and function of lampbrush chromosomes. Rana spp. (Anura)
b Oogenesis. Drosophila melanogaster (Diptera)


c Swiluppo dei meccanismi eritropoietici durante la vita neonatale. Oryctolagus cuniculus (Lagomorpha)

GIPOULOIX, J. D. Dr. ès Sci. – Lab. de Biol. Anim. A, Univ. Bordeaux I, Av. des Faculté, 33405 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)
d Etude expérimentale des facteurs de la migration des cellules du blastème de l'uretère primaire.

GIROUD, A. Prof. – Lab. d'Histol.-Embryol. B, Fac. de Méd., 45 rue des Sts. Pères, 75 PARIS VI, France

a Late influences on the developing nervous system. Rattus spec. (Rodentia)
b Observations on arthrogryposis. Rattus spec. (Rodentia), Bos taurus (Artiodactyla)
c Malformations in early aborted fetuses. Homo sapiens (Primates)

GIUDICE, G. M.D., Prof. – Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

a Protein and RNA synthesis during early development. Paracentrotus lividus (Echinoidae)
b Cell free maturation of ribosomal RNA of oocytes. Same species as a
c Giant RNA in the cytoplasm of embryos. Same species as a
d Regulation of DNA synthesis in dissociated cells. Same species as a

GLAS, P. M.Sc. – Dept. of Anat. and Embryol., State Univ. of Groningen, Oostersingel 69, GRONINGEN, Netherlands

a The early development of the commissures in the medial telencephalic area. Mus musculus (Rodentia)


a Egg and embryo development, especially electron microscopy concerning vitellogenesis. Coryden-
drium parasiticum (Hydrozoa)
b Gene physiology, Y chromosome, Drosophila spp. (Diptera)
c Genetic regulation of differentiation; male germ line cells. Drosophila spp. (Diptera)

g GLENISTER, T. W. D.Sc., Ph.D., Prof. – Dept. of Anat., Charing Cross Hosp. Med. School, Lab. Block, Fulham Palace Road, LONDON W6 8RF, England

a Reaction of genital tract tissues to hormones in vitro. (Rodentia; Lagomorpha; Primates)
b Blastocyst implantation in vitro. (Rodentia; Lagomorpha; Primates)
c Behaviour of trophoblasts in vitro. (Rodentia; Lagomorpha; Primates)
d Development of embryos in vitro. (Rodentia; Lagomorpha; Primates)

e Ultrastructure of embryo-maternal relationships during implantation. (Rodentia; Lagomorpha; Primates)

GLOOR, H. J. Ph.D., Prof. – Stat. de Zool. Exp., Univ. de Genève, 154 Rte de Malagnou, 1224 CHÈNE-BOUGERIES, Switzerland


a Myogenesis. Gallus domesticus (Aves)

GODET (NONNENMACHER), Mrs. J. – Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69621 VILLEURBANNE, France

a La différenciation cellulaire dans le tissu sanguin et les diverses formes d’hémoglobine. Gallus domesticus (Aves)
a Differentiation of germ cells in early oogenesis (quantitative and stereological analysis). Tetrodontophora bielanensis (Collembola)

GOLICHENKO, V. A. Cand.sci. – Chair of Embryol., Biol. Fac., State Univ. of Moscow, Lenin Hills, MOSCOW 117234, U.S.S.R.
a Development of dermal melanophores, their structure, biochemistry, physiological regulatory mechanisms, and behaviour. Rana temporaria, Xenopus laevis (Anura)


GOMOT, L. Dr.és Sci., Prof. – Lab. de Zool., Univ. de Besançon, Place Maréchal Leclerc, 25030 BESANCON, France
a Développement embryonnaire de la glande uropygienne. (Aves) (avec J. BRIDE)
b Différenciation sexuelle des hybrides. (Aves) (avec A. DERAY)
c Organogenèse de la glande mammaire. Oryctolagus cuniculus (Lagomorpha) (avec A. PROPPER)
d La différenciation sexuelle. Helix aspersa (Pulmonata, Gastropoda)
e Le développement in vivo et in vitro du coeur. Rana temporaria, Xenopus laevis (Anura) (avec M. BRIDE-VUILLET)
f Evolution histophysiologique de l'appareil reproducteur au cours de l'ontogenèse chez des hybrides stériles. Cairina moschata x Anas platyrhynchos (Aves) (avec C. R. MARCHAND)
g Détermination de la sexualité. Paludina vivipara (Prosobranchia, Gastropoda) (avec B. GRIF-FOND)

GONTCHAROFF, Miss M. Prof. – Lab. de Biol. Cell., Univ. de Reims, B.P. 347, 51062 REIMS-Cedex, France
a Regeneration. Lineus ruber (Anopla, Nemertea)
b Analogues of DNA in embryonic development. Strongylocentrotus purpuratus (Echinoidae)
c Regulation of cell division. Physarum polycephalum (Eumycetozoa)

GONZALEZ-SANTANDER, R. Dr.med. – Inst. Cajal, Velázquez 144, MADRID 6, Spain

GOODWIN, B. C. Ph.D. – School of Biol. Sci., Univ. of Sussex, Falmer, BRIGHTON BN1 9QG, England
a Analysis of field phenomena in early gastrulae by grafting techniques, temperature perturbation, and electrical stimulation. Xenopus laevis (Anura)
b Morphogenetic movements during gastrulation and neurulation. Xenopus laevis (Anura)
c Electrophysiology and tracer kinetics of polarity, polar transport, and morphogenesis in regenerating segments. Acetabularia mediterranea (Chlorophyceae)

a Influence of albumen of different breeds on embryonic and postembryonic development. Gallus domesticus (Aves)
b The overembryonic albuminous crater during embryonic development, especially graphite dust adhesion to the crater; formative processes in albuminous and yolk covers. Gallus domesticus (Aves) (with P. S. CHANTURISHVILI, Tbilisi)

GÖTTING, K. J. Dr.reer.nat., Prof. – I.Zool. Inst., Fachber. Biol., Univ. Giessen, Stephanst. 24, 63 GIESSEN, B.R.D. (Germany)
a Electron microscopy of oogenesis in marine forms. ( TELEOSTEI)
b Viviparity. Zoarcus viviparuns (Teleostei)

GOTTSCHEWSKI, G. H. M. Dr.phil.habil., Prof. – Max-Planck-Inst. für Immunbiol., Stefan-Meier-Str. 8, 78 FREIBURG i.Br., B.R.D., (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. (Lagomorpha, Rodentia)

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

GOTZOS-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)

GOTZOS, 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)
b Action of antigimetic substances on cleavage. Mus musculus (Rodentia)

GOUIN, F. J. Dr.és Sci. – Musée Zool. de l’Univ. et de la Ville, 29 Bd. de la Victoire, 67000 STRASBOURG, France
a Descriptive and comparative embryology and postembryonic morphogenesis. (Myriapoda; Insecta)

GOUIN, F. J. Dr.és Sci. – Musée Zool. de l’Univ. et de la Ville, 29 Bd. de la Victoire, 67000 STRASBOURG, France
b Review of all work in descriptive, comparative and/or experimental embryology and post-embryonic morphogenesis. (Myriapoda; Onychophora; Insecta)

GOVAERE, Miss M. C. M.Sc. – Lab. d’Embryol., Univ. Paris VI, 4 place Jussieu, 75230 PARIS
Metabolism Multiple Effects Beeinflussung In Development Embryogenesis ISDB

Cyst (Ail PARIS 75230 France) and (BERNARD), J. CUOMO, B. Putorius, P. et Inst., de du France - delayed implantation: 1. light and electron microscopy of the blastocyst and uterine epithelium; 2. histochemistry of the reproductive tract. Mustela erminea (Carnivora)

Light and electron microscopy of pre and post implantation changes in the uterus. Putorius p. furo (Carnivora)

development and structure of extra-embryonic membranes: placental labyrinth, paraplacental chorion, and haemaphagous organ (light and electron microscopy). Putorius p. furo (Carnivora)

GULLUNI (CUOMO), Mrs. M. Dr. - Ist. di Biol. Gen., Fac. di Med., Univ. di Roma, Policlinico Umberto I, 00100 ROMA, Italy

Effects of gravity acceleration during growth of primary root. Vicia faba (Papilionaceae)

Effects of l-asparaginase during rejection of embryonic and larval transplants. Rana esculenta (Anura), Triturus taeniatus (Urodela)

GUMPEL (PINOT), Mrs. M. Dr.èes Sci. - Inst. d'Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France

La croissance et la différenciation du bourgeon de membre in vitro. Gallus gallus (Aves)

Rapports mésenchyme axial - mésenchyme latéral dans l'organogenèse du membre. Same species as a

c Organogenèse du mésonephros. Gallus gallus, Coturnix c. japonica (Aves) (avec Y. CROSILLE et C. MARTIN)


Embryology. (Amphibia)


Experimental, morphological, cytochemical, and autoradiographic study of oocyte maturation. (Clupeiformes, Perciformes, Cypriniformes, Teleostei)

GUSTAFSON, T. Fil.Dr., Prof. - Wenner-Gren Inst., Norrtullsgatan 16, 113 45 STOCKHOLM, Sweden

Control of morphogenetic movements and of larval muscular and ciliar activity by acetycholine and serotonin: graded variation of sensor pacemaker, conductive and contractile activities along the animal-vegetal axis and its relation to behaviour. Pammecinus millarius (Echinidea)


Fine structure and hormonal activity of intact and cultured embryonic adrenal cells of different species. Felis domestica Carnivora), Rattus spec. (Rodentia), Homo sapiens (Primates)

Fine structure and hormonal activity of cultured embryonic hypophysis. Homo sapiens (Primates)

HABROVA (VILÍMKOVÁ), Mrs. V. RNDr. - Dept. of Exp. Zool., Charles Univ., Viničná 7, 12844 PRAHA 2, Czechoslovakia

Nucleic acids and subcellular particles in oogenesis and early development. (Amphibia) (with J. NEDVÍDEK)

HACCIUS, Miss B. Dr., Prof. - Inst. für spez. Bot. der Univ., 65 MAINZ, B.R.D. (Germany)

Beinflussung der Entwicklung von Embryonen durch Chemikalien (Wachstumsregulatoren; Phytokinine). Eranthis hiemalis (Ranunculaceae)

In vitro Kultur von Geweben. Nicotiana spec. (Solanaceae), Vincetoxicum spec. (Asclepiadaceae)

Embryogenesis of pollen-embryos. Nicotiana spec. (Solanaceae)

Adventive embryos from cultivated ovules. Vincetoxicum spec. (Asclepiadaceae)

HACH, P. M.D. - Inst. of Embryol., Charles Univ., Albertov 4, 128 00 PRAHA 2, Czechoslovakia
a Peri- and postnatal differentiation of rough endoplasmic reticulum in acinar pancreatic cells (ratio free : bounded ribosomes). Rattus rattus (Rodentia)
b Differentiation and development of pigment granules and melanocytes in normal tissue and in tumours of different origin (incl. biochemistry). Rana esculenta (Anura), Mus musculus (Rodentia), Homo sapiens (Primates)

HADJISI, P. Dr. – Lab. d’Histol., Fac. de Méd. de Paris, 45 rue des Saints-Pères, 75 PARIS VI, France
a Development of the ovary. (Mammalia)
b Histochemistry and reactivity of developing arteries. (Mammalia)
c Histochemistry and ultrastructure of developing brown adipose tissue. (Mammalia)
d Ultrastructure and morphometry of the embryonic aortic wall. Rattus spec. (Rodentia), Oryctolagus cuniculus (Lagomorpha)
e Pre-collagen and pre-elastin production by embryonic and post-natal aortic muscle cells (electron-autoradiography, histoenzymology). Rattus spec. (Rodentia)

HADORN, E. Dr.Phil., Prof. – Zool.-Vergl. Anat. Inst., Univ. Zürich, Künstlergasse 16, 8006 ZURICH, Switzerland
a Determination, transdetermination and differentiation in cells of imaginal discs. Drosophila melanogaster (Diptera)

HAFFEN, Stenger, Mrs. K. E. Dr.es Sci. – Unité de Rech. de l’INSERM, Av. Mollière, 67200 STRASBOURG/ Hautepierre, France
a Determination of effective high hydrostatic pressures and low temperatures on embryonic organs. Gallus domesticus (Aves)
b Biosynthesis of steroid hormones in embryonic gonads. Gallus domesticus (Aves)

HAGENBÜCHLE, O. lic.phil.nat. – Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlist.8, 3012 BERN, Switzerland
a RNA synthesis in larval cell cultures. Xenopus laevis (Anura) (with R. WEBER, G. RYFFEL and U. SCHIBLER)

HAGENMAIER, H. E. Dr.reser.nat. – Inst. für Zool., Rhein.-Westf.-Techn. Hochschule, Birkenweg 16, 51 Aachen, B.R.D. (Germany)
a Biochemistry of batching. Salmo trutta, S. gairdneri (Teleostei)
b Structure and chemistry of the chorion. Salmo gairdneri, Perca fluviatilis (Teleostei)

HAGET, A. Dr.es Sci., Prof. – Lab. de Zool. Expér., Univ. de Bordeaux I, Av. des Facultés, 33405 TALENCE, France
a Activation du système ovulaire. Leptotinotarsa spec. (Coleoptera)
b Ségrégation et migration des initiales germinales. Same species as a
c Différenciation ultrastructurale des lignées cellulaires. Same species as a

HAGSTROM, B. E. Fil.Dr. – Dept. of Pharmacol. and Toxicol., AB KABI, 104 25 STOCKHOLM 30, Sweden
a The effect of drugs and environmental factors on development and morphogenesis (experimental study; electron microscopy). (Echinidea), marine spp. (Teleostei)
b Teratogenesis and mutagenesis, especially in early development. Laboratory animals (Mammalia), Homo sapiens (Primates)


HALBA, R. M.Sc. – Dept. of Vert. Zool., Univ. of Warsaw, Krakowskie Przedmieście 26/28,
WARSAWS 64, Poland

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 melanogaster (Diptera)
c Fusion of cells from carotypically different established cell lines. Drosophila melanogaster (Diptera)

HAMBURGER, K. Cand.mag. – Biol. Inst., Carlsberg Found., 16 Tagensvej, 2200 COPENHAGEN N, Denmark
a Respiratory metabolism during early development (gradient divider technique). Rana oxyrrhinhus, R. platyrhinhus (Anura)

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, W. J. Prof. (Emer.) – 45 Wolsey Rd., Moor Park, NORTHWOOD, Middlesex, England
a Placenta. Callithrix jacchus (Primates)

HÄMMERLING, J. Dr.phil., Prof. (Emer.) – Max-Planck-Inst. für Zellbiol., Anton-Dohrn-Weg, Postfach 1009, 294 WILHELMSHAVEN, B.R.D. (Germany)
a Nucleo-cytoplasmic relationships, especially cytoplasmic regulation of genetical information. Actinobacteria spec. (Chlorophyceae)

HANCOCK, 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 Developmental pathology of hybrid placenta. Capra hircus x Ovis aries (Artiodactyla)
c Immunological aspects of foetal-maternal relationships exemplified by hybrid gestation. Capra hircus x Ovis aries (Artiodactyla) (with P. T. McGOVERN)

HANKE, W. Dr., Prof. – Zool. Inst. II der Univ., Kaiserstr.12, 75 KARLSRUHE 1, B.R.D.
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)

Influence of hormones on metamorphosis; effects of different hormones depending on the stage of development. Ambystoma spec. (Urodela), Xenopus laevis (Anura)


Nucleic acid metabolism (chiefly DNA) during maturation of oocytes (autoradiography, biochemistry). (Amphibia)

HANOQ (QUERTIER), Mrs. J. A. Dr. en Sci.Biol. – Dept. of Molec. Biol., Free University of Brussels, 67 rue des Chevaux, 1640 RHÔDE ST. GENÈSE, Belgium ISDB

Mechanisms of in vitro maturation, Xenopus laevis (Anura)

HANSEN-DELKESKAMP, Mrs. E. Dr. – Fachber. Biol., Univ. Regensburg, Postfach 397, 84 REGENSBURG 2, B.R.D. (Germany)

Metabolism of oocytes, eggs, and embryos. Gryllus domesticus (Orthoptera)

HANSSON MILD, K. Fil.Lic. – Dept. of Zoophysiol., Univ. of Umeå, S 901 87 UMFA, Sweden

Permeation, diffusion of water and osmoregulation. Rana spp. (Anura)

tCortical tension. Rana spp. (Anura)


Temporal aspects in the process of neural induction by the young head process. Gallus domesticus (Aves)


Regeneration blastemata induced in heterotopic positions and their development. Ambystoma mexicanum (Urodela)

Differentiation and de-differentiation during regeneration. Same species as a

HARRICANE (VORS), Mrs. M. C. Dr.spec. – Lab. d’Histol. et d’Embryol. Univ. de Montpellier, 2 rue École de Médecine, 34000 MONTPELLIER, France

Goji apparatus in oocytes (electron microscopy, histochemistry, enzymology, autoradiography). Triturus helveticus (Urodela)

HARRIS, J. W. S. Ph.D. – Dept. of Anat., Sch. of Med., Royal Free Hosp., 8 Hunter St., LONDON WC1N 1BP, England ISDB

Morphogenesis of nose and palate. Mus musculus, Rattus spec., Mesocricetus auratus (Rodentia), Homo sapiens (Primates)

Effect of trophoblast on uteroplacental blood vessels. Mesocricetus auratus (Rodentia), Homo sapiens (Primates)


Control mechanisms during activation and expression of globin genes in erythroid cell development in foetal liver. Mus musculus (Rodentia)

HARRISON, R. G. D.M., Prof. – Dept. of Anat., Univ. of Liverpool, P.O.Box 147, LIVERPOOL L69 3BX, England

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

Reproduction, gonads, placenta, endocrine organs. Phoca spec., (Pinnipedia), Tursiops spec., (Cetacea)

HART, Miss G. Dr., Prof. – Inst. für Entw.physiol., Univ. zu Köln, Gyrhofstr. 17, 5 KOLN 41, B.R.D. (Germany)

Interactions between genes and environment in controlling morphogenesis of leaves. Antirrhinum majus (Scrophulariaceae)

Growth of callus, and differentiation in tissue cultures of different mutants. Oenothera hookeri (Onagraceae), Antirrhinum majus (Scrophulariaceae)


no embryological work in progress

HARTMANN, R. Dr.rec.nat. – Zool. Inst. der Univ., Weyertal 119, 5 KOLN 41, B.R.D. (Germany)

Light and electron microscopy of spermatheca development in connection with endocrine ablations. Gomphocerus rufus, Syrphula fuscovittata (Acridinae, Orthoptera)


Biochemistry of spermatozoa. Oryctolagus cuniculus (Lagomorpha), Ovis aries, Bos taurus (Artiodactyla)

HARTWIG, H. Dr.phil., Prof. – Zool. Inst. der Univ., Weyertal 119, 5 KOLN 41, B.R.D. (Germany)

44
b Epithelzysten. Same species as a
c Gewebsbildung. Capreolus capreolus (Artiodactyla)


HATIER (AUTELIN), Mrs. R. Lic.és Sci. – Lab. de Biol. Méd., Univ. de Nancy 1, 30 rue Lionnois, 54 NANCY, France

a Reproduction, sex differentiation, endocrinology, and periodicity. Platynereis spec., Ophryotrocha spec. and other spp. (Polychaeta)

HAUSER, R. F. Ph.D., Prof. – Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlist.8, 3012 BERN, Switzerland
a The role of the subcommissural organ in normal development and regeneration of axial structures. Xenopus laevis (Anura), (Vertebrata)
b Regeneration of the spleen; effects of spleenectomy on blood formation and metamorphosis. Xenopus laevis (Anura)

a Relationship between embryo and corpus luteum. Ovis aries (Artiodactyla)
b Maturation of follicular oocytes in vitro. Ovis aries (Artiodactyla)

a Cellular interaction in tissue culture

HEDLUND, K. O. Fil.kand. – Zool. Inst., Univ. of Uppsala, Box 561, 75122 UPPSALA 1, Sweden
a Ultrastructure of outgrowing nerve fibers in vitro and in vivo. Gallus domesticus (Aves), Ambystoma mexicanum (Urodela)

HEERSCHE, J. N. M. Dr. – Lab. for Cell Biol. and Histol., State Univ., Rijnsburgerweg 10, LEIDEN, Netherlands
a Fluctuation in cyclic-3'AMP levels in embryonic bone after prolonged exposure to parathyroid hormone (radioimmunoassay). Rattus spec., Mus musculus (Rodentia)
b Hormonal regulation of calcium transport in the shell gland. Gallus domesticus, Coturnix coturnix japonica (Aves)

HEESEN, D.te Dipl.-Biol. – Zool. Inst. der Univ., Badestr. 9, 44 MÜNSTER/Westf., B.R.D. (Germany)
a Yolk system, studied by electrophoresis, immunotests, radio-isotopes. Brachydanio rerio (Teleostei)

HEIZMANN, P. Dr.Ing. – Sect. de Biol. Génér. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69621 VILLEURBANNE, France
a Métabolisme des acides nucléiques. Euglena gracilis (Euglenophyceae)

HELFENBEIN, L. L. B.Sc. – Dept. of Biol., Kharkov State Univ., Dzerjinsky Square 4, KHARKOV, U.S.S.R.

HELMING, P. J. Dr. – Dept. of Genet., Univ. of Nijmegen, Toernooiveld, Nijmegen, Netherlands
a Changes in nuclear protein patterns related with gene activation. Drosophila hydei (Diptera)
b RNA metabolism in newly activated puff's. Drosophila hydei (Diptera)

HEMMINGS, W. A. D.Sc. – Zool. Dept., Univ. Coll. of N.Wales, BANGOR, Caerns., Wales, U.K.

a Protein transport to the foetus. Oryctolagus cuniculus (Lagomorpha)
b Uterine secretion. Oryctolagus cuniculus (Lagomorpha)

HENDELBERG, J. Fil.Dr. – Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPSASLA 1, Sweden
a Spermiogenesis. (Turbellaria, Trematoda, Cestoda)
b Alterations in the epidermal ultrastructure during early development. Stylostomum ellipse, Chilidia groenlandica, Paraphanostoma submaculatum and others (Turbellaria)
c The ultrastructure of the protonephridia during larval development. Diphyllobothrium dendriticum (Cestoda)

a Development of the supraorbital glands. Pygoscelis adeliae (Aves)
b H2-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., Prof. – Lab. de Biol. Anim. et Histol. Comp., Univ. Libre de Bruxelles, Av. F. D. Roosevelt 50, 1050 BRUXELLES, Belgium

HERNANDEZ (VERDUN), Mrs. D. F. Dr, 3e Cycle – Lab. de Biol. de la Reprod., Univ. de Paris VI, B.P.261, 75827 PARIS-Cedex 17, France
a Ultrastructure and morphology of the placental syncytium. Mus musculus (Rodentia)

HERP, F. van Ph.D. – Dept. of Zool., Cathol. Univ., Toernooiveld, NIJMEGEN, Netherlands
a Sensitivity of larval and juvenile stages to neurohumoral substances. (Decapoda, Crustacea)
b Development of the neurosecretory system. (Decapoda, Crustacea)

a Experimental analysis of metamorphosis. Actinotrocha spec. (Phoronidea)

a Development of the brain. Homo sapiens and other spp. (Mammalia)

b Gene regulation of differentiation; male germ line cells. Drosophila spp. (Diptera)

c Regeneration of cell death to genesis of form in the limb: 1. suppression and extension of necrosis in talpid3 and wingless mutants; 2. insulin effects on cell death and on emergence of pattern of choroido tin SO4 synthesis (autoradiography). Gallus domesticus (Aves)

b Autoradiography (35SO4 uptake) of emergence of chondrogenic pattern in the limb, and its significance for the evolution of lungfish paddle into amphibian limb. Ambystoma mexicanum (Urodela)

HINRICHSEN, K. Dr.med., Prof. – Lehrstuhl für Anat.I, Ruhr-Univers., Buscheyst., Postfach 2148, 4630 BOCHUM-Querenburg, B.R.D. (Germany)
a Thymus and lymphatic system, cell regeneration and migration. Mus musculus (Rodentia)
b Morphogenesis of epithelial organs. Mus musculus (Rodentia), Homo sapiens (Primates)

HINCHLIFFE, J. R. Ph.D. – Zoology Dept., Univ. Coll. of Wales, Penglais, ABERYSTWYTH SY23 3DA, Wales, U.K.
a Contribution of cell death to genesis of form in the limb: 1. suppression and extension of necrosis in talpid3 and wingless mutants; 2. insulin effects on cell death and on emergence of pattern of choroido tin SO4 synthesis (autoradiography). Gallus domesticus (Aves)

a Early differentiation; transplantation, in vitro culture. Rattus norvegicus (Rodentia) (with N. SKREB)

HOFMANN, D. K. Dr rer.nat. – Inst. für Entw. physiol., Univ. zu Köln, Gyrhofstr. 17, 5 KÖLN 41, B.R.D. (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 stages. 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
Polysaccharide metabolism, especially glycoproteins and mucopolysaccharides. Rana spp. (Anura)

HOHL, H. R. Dr.sc.nat., 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)

a Cell determination and differentiation in embryos and imaginal discs. Drosophila melanogaster (Diptera)

a Scanning electron microscopy of giant chromosomes. Chironomus spec. (Diptera)

a Developmental biochemistry, especially energy reserves in the larvae, during and shortly after metamorphosis. Ostrea edulis (Lamellibranchia), other spp. (Invertebrata)

HOLM, K. A. Fil.Dr. – Zoology 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, Arstadvei 19, 5000 BERGEN, Norway
a Odonontogenesis. Esox lucius (Teleostei)

HOLSTEIN, A. F. Dr.med. – Anat. Inst. der Univ. Hamburg, Martinistr. 52, 2-HAMBURG 20, W.Germany

HOLT (SULEY), Mrs. A. C. E. Ph.D. – Dept. of Zool., Reading Univ., Whiteknights Park, READING RG6 2AJ, England
a Developmental genetics, especially of variegated phenotypes. Mesocricetus auratus (Rodentia)

HOLTER, H. Ph.D. – Biol. Inst., Carlsberg Found., 16 Tagensvej, 2200 COPENHAGEN N, Denmark

a Eye development. Zora (Zoridae; Philodromidae, Araneida)

a Transfilter induction of lenses, neural and retinal tissues by eye rudiments in gastrula ectoderm
the and the dependence of their appearance 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) (with G. V. LOPASHOV)
c Specific assymilatory induction by lens epithelial cells in gastrula ectoderm. Rana temporaria
(Anura)
d Change in the spectrum of inductive abilities in the course of the differentiation of retina. Rana
temporaria, Xenopus laevis (Anura) (with A. A. SOLOGUB)
e Conditions of the initiation of development and the positioning of axial rudiment in the early
blastoderm. Leuciscus beri (Cyprinidae), Epilatys shaperi (Cyprinodontidae, Teleostei)

HORNBLAD, P. Y. M. – 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)

HORNY, 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)

HÖRSTADIUS, S. Fil.Dr., Prof. (Emer.) – Zool. Inst., Univ. of Uppsala, Box 561, 75122 UPPSALA
I, Sweden

a A determination in the egg: the gradients and the processes behind them, particularly the effect on
embryonic development of morphogenetic substances isolated from the eggs. Paracentrotus
lividus (Echinidea)

HORSTMANN, E. Dr.med. et phil., Prof. – Anat. Inst. der Univ. Hamburg, Martinistr. 52, 2000
HAMBURG-Eppendorf, W. Germany

HORTON, J. D. Ph.D. – Dept. of Zool., Univ. of Durham, Science Labs., South Rd., DURHAM DH1
3LE, England

a The role of the thymus in the ontogeny of immunity and the mechanism of graft rejection and
tolerance (alloimmune responses of animals thymectomized at extremely early stages of
lymphoid organ maturation). Xenopus laevis (Anura)

HORVÁTH, Miss C. M.D. – Inst. of Histol. and Embryol., Med. Univ., Tüzoltó u. 58, BUDAPEST
IX, Hungary

a Teratogenesis. Gallus domesticus (Aves), Rattus rattus, Mus musculus, Mesocricetus auratus
(Rodentia)
b Effect of teratogens on chromosomes. Rattus rattus (Rodentia)

HOUILLON, Ch.-Dr. ésc. Prof. – Lab. de Biol. Anim. (2e sect), Univ. de Paris, 12 rue Cuvier, 75
PARIS Ve, France

a Etude quantitative de quelques hydrolases lysosomiques de l’épithélium intestinal au moment de
la métamorphose naturelle ou provoquée: électrophorèse d’isoenzymes; comportement des acides
nucléiques (autoradiographie). Discoglossus spec., Xenopus laevis (Anura)

HOUSSAINT, Miss E. – Lab. d’Embryol., Univ. de Nantes, 38 Bd.Michelet, B.P.1044, 44037
NANTES CELDEX, France

a Différenciation biochimique des hépatocytes. Gallus gallus (Aves)
b Etude expérimentale du développement du foie. Gallus gallus (Aves), Mus musculus (Rodentia)
c Cultures d’hépatocytes d’embryons. Gallus gallus, Coturnix c. japonica (Aves)

HOYES, A. D. Ph.D. – Anat. Dept., St. Mary’s Hosp. Med. School, Norfolk Place, LONDON W.2,
England

a Ultrastructure of the chorion laeve and decidua. Homo sapiens (Primates)
b Ultrastructure of haematopoesis in the liver and bone marrow. Homo sapiens (Primates)

HRABE, V., RNDr., Csc. – Dept. of Morphol., Inst. of Vertebr. Zool., Czechoslov. Acad. of Sci.,
Květná 8, BRNO, CZECHOSLOVAKIA

der Wirbeltiere, Bernatst. 15, 3005 BERN, Switzerland

a Biometrie des Schädel. Canis familiaris (Carnivora), Capreolus capreolus, Rupicapra rupicapra
(Artiodactyla)
b Postembryonales Wachstum. Canis familiaris (Carnivora)
c Geschlechtszyklus. Rupicapra rupicapra (Artiodactyla)

d Fortpflanzung und Geschlechtszyklus. Sciurus vulgaris (Rodentia)
e Fortpflanzung und Reproduktionsleistung. Lepus europaeus (Lagomorpha), Canis familiaris
(Carnivora)

HUBERT, J. Dr.ès Sci. – Lab. de Biol. Anim., Univ. de Clermont, B.P. 45, 63170 AUBIÈRE, France

a Lignée germinale chez l’embryon, le jeune et l’adulte; étude descriptive et expérimentale,
ultrastructure. Lacerta vivipara, Anguis fragilis (Lacertilia), Vipera aspis (Ophiida)

HUCHON, Miss D. E. Dr.ès Sci. – Lab. d’Embryol., Univ. Paris VI, 4 place Jussieu, 75230 PARIS
Cedex 05, France

a Serum lipoprotein in relation with yolk formation. Discoglossus pictus (Anura)

HUELTIN, C. – Lab. de Biol. Anim., Fac. des Sci., Univ. Paris Sud, 91405 ORSAY, France

a Développement de l’appareil génital masculin et féminin de la larve. Tenebrio molitor
(Coleoptera)

HUELTIN, M. Lab. de Biol. Anim., Fac. des Sci., Univ. Paris Sud, 91405 ORSAY, France

a Régénération (influence des rayons X, du système nerveux). Astera zibbosa (Asteroidea)

HULTIN, J. M. T. Fil.Dr. – Wenner-Gren Inst., Norrutullsgatan 16, 113 45 STOCKHOLM, Sweden
ISDB

a Protein and nucleic acid metabolism in early development. Artemia salina (Anostraca, Crustacea),
a Influence of food, light, temperature, and hormones on the male sexual apparatus during the resting period. Microtus arvalis, M. agrestis (Microtidae, Rodentia), Apodemus agrarius, A. flavicollis, Mus musculus (Muridae, Rodentia)

HUREAU, J. Prof. – Lab. d’Anat., Univ. Paris V – René Descartes, 45 rue des Saints Pères, 75 PARIS Vle, France

HURLLE GONZALEZ, J. M. M.D. – Serv. de Embriol. Exper., Dept. de Anat., Fac. de Med., SANTANDER, Spain


HYATT, Mrs. P. J. B.Sc. – Anat. Dept., Bristol Univ., University Walk, BRISTOL BS8 1TD, England

a Electron microscopy of gastrula cells during neural induction. Xenopus laevis (Anura)

IANNELLO, Miss A. – Dr.rer.nat. – Ist. di Anat. Umana Norm., Univ. di Catania, Via Biblioteca 4, 95124 CATANIA, Italy

a Sviluppo delle ossa interparietali e preinterparietali. Homo sapiens (Primates)


a Relative duration of embryonic periods in connection with the morphogenetic function of nuclei and yolk. Misgurnus fossilis, Exon lucus and other spp. (Teleostei), Ambystoma mexicanum (Urodela)

IKONICOFF (KAPLAN), Mrs. L. Dr.en Méd., Dr.3e Cycle – Lab. de chim. Hormi,, Maternité de Port-Royal. 123 Bd. de Port Royal, 75014 PARIS, France

a Localisation immunohistochemique de HCG (human chorionic gonadotropin) et HCS (human placental lactogen) dans le placenta après marquage à la peroxydase. Homo sapiens (Primates)

b Localisation ultrastructurale de l’HCS dans le placenta avant et après culture. Homo sapiens (Primates)

ILIES, A. Dr.Biol.Sci. – Inst. d’Histochim. Méd., Univ. René Descartes, 45 rue des Sts. Pères, 75270 PARIS Cedex 06, France

a Normal and pathological necrotic areas in embryonic development. Homo sapiens (Primates)

b Normal and pathological development of the embryo. Homo sapiens (Primates)

IMMERS, J. Fil.Dr. – Wenner-Gren Inst., Norrtullsgatan 16, S-113 45 STOCKHOLM, Sweden

a Biochemical factors in embryonic and larval development, particularly the role of mucopolysaccharides. Paracentrotus lividus (Echinoidea)

b Changes in interaction between proteins and nucleic acids in the course of early development. Paracentrotus lividus, Psammochinus miliaris (Echinoidea)

c Interaction of animal-vegetal morphogens with respect to double gradient concept. (Echinoidea)

IOANNOU, J. M. Ph.D. – Dept. of Anat., School of Med., Thoresby Place, LEEDS LS2 9NL, England

ISTAMBÖLÜ, A. Mès Sci. – Lab. de Bot., Univ. de Provence, Centre St.Charles, Place Victor Hugo, 13003 MARSEILLE, France

a La dominance des graine et des bourgeons. Olea europaea (Oleaceae)

IVANOFF, Miss A. – Lab. d’Embryol., Univ. de Nancy I, 31 rue Lionnois, 54 NANCY, France

IVANOV, E. A. – Chair of Embryol., Biol. Fac., State Univ. of Moscow, Lenin Hills, MOSCOW 117234, U.S.S.R.

a Experiments on the segmentation of the axial mesoderm. Rana temporaria (Anura), Gallus domesticus (Aves)

IVANOV, V. I. Dr. – Lab. of Exp. Genet., Inst. of Med. Genet., Kashirskoye Chaussee 6a, 115478 MOSCOW, U.S.S.R.

a Determination of imaginal disc cells in normal and mutant strains. Drosophila melanogaster (Diptera)

b Interaction of homoecotic and non-homoecotic genes during development. Same species as a

IVANOVA (KASAS), Mrs. O. M. Dr.biol.sci., Prof. – Dept. of Embryol., Leningrad State Univ., Mendelevsky St. 5, 199164 LERINGRAD, U.S.S.R.

a Comparative embryology. (Invertebrata) Synoicum pulmonaria (AsciIdiacea)

b Asexual reproduction. Synoicum pulmonaria (Asciidae)

IVEMARK, B. I. M.D., Prof. – Dept. of Pediat. Pathol., Karolinska sjukhuset, 104 01 STOCKHOLM 60, Sweden

IZMAIKLOW, Miss R., Dr. – Inst. of Plant Cytol. and Embryol., Jagiellonian Univ., św. Jana 20, 31–018 KRAKÓW, Poland

a Control of apomixis (cytology, embryology, experimental studies). Alchemilla spec. (Compositae)

JÄÄSKELÄINEN (KARKINEN), Mrs. M. M.D. – Lab. of Exp. Embryol., III. Dept. of Pathol., Univ. of Helsinki, Haartmaninkatu 3, 00290 HELSINKI 29, Finland

a Virus-induced cataract. Gallus gallus (Aves) (with L. O. SAXEN)

JACOB, H. J. Dr.med. – Lehrstuhl für Anat. 1, Ruhr-Univers., Buscheystr., Postfach 2148, 463 BOCHUM-Querenburg, B.R.D. (Germany)

a Development of vertebral column. Gallus domesticus (Aves)

b Differentiation of somites. Gallus domesticus (Aves)


a Ultrastructural and functional aspects of nucleolus in larval salivary gland cells. Smittia parthenogenetica (Chironomidae, Diptera), and in developing oocytes. Xenopus laevis (Anura)
ontogenesis of the central nervous system. (Vertebrata)

b Elaboration of an appropriate method for testing the teratogenic activity of drugs. Gallus domesticus (Aves), Rattus norvegicus, Mus musculus (Rodentia)

c Embryotoxic effects of normal and pathological serum of different species including man. Gallus domesticus (Aves)

d Analysis of the teratogenic action of histone and histone fractions. Gallus domesticus (Aves), Mus musculus (Rodentia)

JENSEN, P. V. M.Sc. – Inst. of Gen. Zool., Univ. of Copenhagen, 15 Universitetsparken, 2100 COPENHAGEN Ø, Denmark

a Ultrastructural changes in metamorphosing hearts. Calliphora erythrocephala (Diptera)

b DNA amount and DNA synthesis in the individual cells of the metamorphosing heart. Same species as a

JINNÉRŠOT, D. P. A. Fil.mag. – Zool. Inst., Univ. of Uppsala, Box 561, 75122 UPPSALA 1, Sweden

JIRSOVA, Miss Z. M.D. – Inst. of Embryol., Fac. of Med., Charles Univ., Albertov 4, 128 00 PRAGA 2, Czechoslovakia

a Egg transplantation (electron microscopy and cytochemistry of egg transport and implantation in experimental conditions). (Mammalia)

b Electron microscopy and cytochemistry of tubal epithelium differentiation. (Rodentia; Carnivora), Homo sapiens (Primates)

JOHANNISSON, R. Dr. – Inst. für Allgem. Biol., Univ. Düsseldorf, Ulenbergstr. 127-129, 4000 DÜSSELDORF, B.R.D. (Germany)

a The synthetic capacity and the structure of oocytes and nurse cells; the deposition of yolk protein in the oocyte. Daphnia magna (Cladocera, Crustacea)

b Gene physiologie, Y chromosome. Drosophila spp. (Diptera)

c Genetic regulation of differentiation; male germ line cells. Drosophila spp. (Diptera)


a Biosynthesis of contractile proteins during myogenesis in vitro. Mus musculus, Rattus spec. (Rodentia), Homo sapiens (Primates)

JOHNEN, Miss A. G. Dr.phil., Prof. – Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, B.R.D. (Germany)

a Die Wirkungsspezifität abnormer Induktoren in der Entwicklung. Triturus vulgaris, Ambystoma mexicanum (Urodela)

b Die Bedeutung des Zeitfaktors beim Induktionsvorgang. Same species as a

c Untersuchungen über die Kompetenzverhältnisse beim Ektoderm. Ambystoma mexicanum, Triturus vulgaris, T. alpestris, T. helveticus (Urodela)


a Electron microscopy of abnormal tissues, brain biochemistry and neuroendocrinology of animals carrying mutant genes. Mus musculus (Rodentia)

b Ambystoma mexicanum (Collemboza)


a Differentiation of primordial germ cells (qualitative and stereological analysis). Tetrodontophora bielanensis (Collemboza)

JONES, (HOLT), Mrs. F. 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 cytochalasin B on electrophoretic mobility and adhesion of embryonic cells. Gallus gallus (Aves)

b Control of cellular movement and adhesion in haemocytes. Patella vulgata (Gastropoda)

c Cell aggregation and sorting out. Hydra spp. (Hydrozoa)


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

c Location of polyadenylated messenger RNAs by in situ hybridization of poly-U(H3) and mRNA complementary cDNAs. (Insecta), Rattus spec., Mus musculus (Rodentia), Homo sapiens and other spp. (Primates)


a Spore development. (Rhodophyta and other Algae)

b JONG, Miss G. de M.Sc. – Genet. Inst., State Univ., Opaalweg 20, UTRECHT, Netherlands

a α-amylase activity during larval development and its influence on competition between strains. Drosophila melanogaster (Diptera)

b Allometric growth of the eye. Rana pipiens (Anura)

c Development of the dentition. (Blenniidae, Teleostei)
a Malformations of the vascular system of brain and head. Mus musculus, Rattus norvegicus (Rodentia) (with J. BUGGE).

KNYÍHÁR, Miss E. M.D. — Dept. of Anat., Univ. Med. School, Kossuth L.40, SZEGED, Hungary

developmental histochemistry and electron microscopy of the autonomic ground plexus. Rattus rattus (Rodentia) (with B. CSILLIK, M. GAJÓ and G. KÁLMÁN).

KOC, P. Ph.D. — Zool. Inst. der Univ., Ketzerbach 63, 355 MARBURG/Lahn, W. Germany

KOCHE-RECKER, Mrs. U. Dr rer. nar. — Zentrum für Klin. Morphol., 79 ULM (Donau), oberer Eselsberg, B.R.D. (Germany)

Zool. Inst. der Univ., Röntgenring 10, 87 WÜRZBURG, B.R.D. (Germany)

a Determination of ectoderm in solutions of inducing substances. Triturus alpestris (Urodela)
b Effects and mechanisms of the mesodermal inducing factor. Triturus alpestris, Ambystoma mexicanum (Urodela)

KOCHER, W. Dr., Prof. — Zool. Inst. der Univ., Röntgenring 10, 87 WÜRZBURG, B.R.D. (Germany)

a Patterns of effects of alkylating substances (especially of triethylenemelamine, TEM) and their treatment-phase specificity during early development and organogenesis. Gallus domesticus (Aves)
b Pattern formation in selection-lines of the polydactyly mutant. Mus musculus (Rodentia)
c Phenocopy of the gene effects of polydactyly by means of TEM-treatment. Same species as b
d Interactions between the gene polydactyly and the teratogenic effects of TEM. Same species as b
e Effects of various genes on the realization of sporadic, gene- and teratogene-induced polydactylism. Same species as b
f Effects of cyclophosphamide (Endoxan) on limb morphogenesis. Same species as b

KOČOVA (PECHÁČKOVÁ), Mrs. J. Dr.Med. — Inst. of Histol. and Embryol., Charles Univ., Karlovská 48, PLZEŇ, Czechoslovakia

a The development of the venous system. Homo sapiens (Primates)

KOČEKE, H. U. Ph.D., Prof. — Zool. Inst. der Univ., Ketzerbach 63, 355 MARBURG/Lahn, W. Germany

a Embryology. Cyclops spec. (Copepoda, Crustacea)
KOHNEN, P. J. Ph.D. — Dept. of Zool., Univ. of Turku, 20050 TURKU, Finland

KOHN, Mrs. A. Mgr. — Dept. of Exp. Embryol., Inst. of Obstet. and Gynecol. Med. Acad., Karowa, 2, 00-315 WARSZAWA, Poland

a Influence of the relative age of gametes on embryonic development. Mus musculus (Rodentia)

KONJN, Th. M. Ph.D. — Zool. Lab., Unit of Cell Biol. and Morphogen., State Univ., Kaiserstr.63, LEIDEN, Netherlands

a Chemotaxis, cell aggregation and differentiation. (Acrasiales)
b Effect of adenosine-3',5'-monophosphate and other cyclic nucleotides on morphogenesis. Dictyostelium discoideum (Acrasiales) (with S. W. de LAAT, Hubrecht Lab., UTRECHT)

c Electrophysiology of development. (Acrasiales)

KONYUKHOV, B. V. Dr.biol.sci., Prof. — Phenogenet. Lab., Inst. of Gen. Genet., Acad. of Sci. of the USSR, Profsoyuznaya St.7 (1), MOSCOW 117312, U.S.S.R.

a Developmental study of mutational effects of genes which lead to eye and skeletal abnormalities. Mus musculus (Rodentia)
b Genetic control of cell proliferation and differentiation. Same species as a


a Regulation of the metabolism and inactivation of ecdysone. Calliphora erythrocephala (Diptera), Locusta migratoria (Orthoptera)
b Purification and characterization of enzymes catalizing single reaction steps in ecdysone metabolism. (Insecta)

KOPEC, Miss J. Ph.D. — Inst. of Zool., Univ. of Wrocław, ul.Sienkiewicza 21, 50-335 WROCŁAW, Poland

a Nucleoli in oogenesis. Enchytraeus albipus (Oligochaeta)

KOPP, F. Dr.en Méd. — Lab. d’Histol. et Embryol.II, Univ. d’Aix-Marseille, 27 Bd. Jean Moulin, 13385 MARSEILLE CEDEX 4, France

a Développement des gonades. Gallus domesticus (Aves), (Mammalia)
a Embryonic development of the bursa Fabricii. Gallus domesticus (Aves)

KÖRNER, H. K. Dr. rer. nar. — Biol. Inst.1 (Zool.) der Univ., Katharinenstr. 20, 78 FRIEBURG, B.R.D. (Germany)

a Experimental developmental morphology of symbiotic organs (mycetomes). Euscelis plebejus and other spp. (Cicadina, Homoptera)
b Host-symbiont relationships. Same species as a

KORCHUKIN, L. I. Dr.Med.Sci., Prof. — Lab. of Developm. Genet., Inst. of Cytol. and Genet., Pravda St.9, ap.36, NOVOSIBIRSK 630090, 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. virilis (Diptera)
c Regeneration of the neural retina with special reference to isozymic patterns of LDH. Triturus
Comparative study of regeneration, asexual reproduction, and somatic embryogenesis. Leucosolenia complicata, Sycon lingua, Halichondria panicea and other spp. (Porifera)

Development of embryos cultivated in vitro. Halisarca dujardina, Baicalospongia bacillifera (Porifera)

KOŚCIELSKI, B. Ph.D. — Inst. of Zool., Univ. of Wrocław, ul. Sienkiewicza 21, 50–335 WROCŁAW, Poland

a Embryology. (Turbellaria, Apterygota, Insecta)
b Nucleoli in oogenesis. Lymnaea spec. (Gastropoda)


a Gametogenesis, sex cycles, and spawning ecology. Perca fluviatilis, Licioperca lucioperca, Acerina cernua, Rutulus rutulus, Abramiis brahma, Scardinius erythrophthalmus, Cyprinus carpio, Tinca tinca, Carassius carassius, Esox lucius, Coregonus lavaretus and others (Teleostei)

KOSKIMIES, O. J. M.D. — Children's Hosp., Stenbäckinkatu 11, 00290 HELSINKI 29, Finland

a Virus-induced abnormalities in embryonic development. Homo sapiens (Primates) (with L. O. SÄXEN, Univ. of Helsinki)

KOSTOVIC (KNEŽEVIC), Mrs. Lj. M.D. — Inst. of Histol. and Embryol., Fac. of Med., Univ. of Zagreb, Salata 3, P.O.Box 166, 44001 ZAGREB, Yugoslavia

a Temporal sequence of appearance of collagen and elastin fibrils and basement membranes, their pattern organization and relation to morphogenetic events during onogenesis. Rattus norvegicus (Rodentia) (with A. SVAJGER)

KOKZ, M. M.D. — Inst. of Neurol. and Sensory Organs, Med. Acad., 49 Przybyszewskiego St., 60 355 POZNAŃ, Poland

a Histochemistry of glia cells in the developing nervous system. Rattus norvegicus (Rodentia), Oryctolagus cuniculus (Lagomorpha)

b Histochemical mapping of the developing brain. Rattus norvegicus (Rodentia)

KRAAN, G. P. B. Ph.D. — Lab. of Developm. Biochem., Dept. of Pediat., State Univ., Bloemsingel 10, GRONINGEN, Netherlands

a Transport of l-lactate from foetus into the maternal circulation, in relation to regeneration of the maternal NAD". Rattus spec. (Rodentia)

KRÁL, B. RNDr. — Dept. of Morphol., Inst. of Vertebr. Zool., Czechoslov. Acad. of Sci., Květná 8, BRNO, Czechoslovakia

KRATOCHWIL, K. Dr.phil. — Inst. für Molekularbiol., Abt. Biol., Österreich, Akad. der Wissensch., Akademiestr. 26, 5020 SALZBURG, 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 Č. Dr.phil. — Brain Anat. Inst., Untere Zollgasse 71, (Waldau), 3072 OSTERMUNDIGEN-BF, Switzerland

a Ontogenesis of the brain. (Cetacea)

KRAUS, R. M.D. — Inst. of Embryol., Charles Univ., Albertov 4, 128 00 PRAHA 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)

KRAUSE, G. Dr.phil., Prof. — Zool. Inst.I der Univ., Röntgenring 10, 87 WURZBURG, B.R.D. (Germany)

a Experimental duplicitas cruciata. Tachycines asynamorus (Orthoptera)
b Potency of germ band development in vitro. Bombyx mori (Lepidoptera)
c Regulation mechanism of egg diapause. Bombyx mori (Lepidoptera)
d Ooplasmic and blastemic reaction systems. Pimpla turionellae (Hymenoptera)

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)

d Development of the heart and great vessels. (Aves; Mammalia), Homo sapiens (Primates)

b Experimental malformations and regeneration of blood vessels. Same species as b

KRESS, Miss A. Ph.D. — Anat. Inst. der Univ., Pestalozzistr. 20, 4056 BASEL, Switzerland

a Vitellogenesis and early degeneration of eggs. (Amphibia

b Variability of egg-capsule volumes during development. (Opisthobranchia, Gastropoda)

KRITCHINSKAYA, Miss E. B. Cand.biol.sci. — Dept. of Embryol., Leningrad State Univ., Mendeleevsky St. 5, 199164 LENINGRAD, U.S.S.R.

a Asexual reproduction, regeneration, and somatic embryogenesis. Dugesia tigrina (Turbellaria), Aeolosoma spec. (Oligochaeta)

KROEGER, H. Dr rer.nat., Prof. — Inst. für Genet., Univ. des Saarlandes, 6 SAARBRÜCKEN 11, B.R.D. (Germany)

a Puffing patterns in giant chromosomes and the mechanism by which they are evoked and controlled. Chironomus thummi, Ch. tentans (Diptera)
a Effect of total and partial UV-irradiation on cleavage and morphogenesis. Lyrnnaea stagnalis, Bithynia tentaculata (Gastropoda)
b Repair processes in eggs after UV-irradiation. Lyrnnaea stagnalis (Gastropoda)
LABOUR, G. R. - Lab. de Zool., Centre d'Orsay, Univ. Paris-Sud, 91405 ORSAY, France
a Cytology of fat body development, with special reference to cell ultrastructure and cytochemistry. Leptinotarsa decemlineata (Coleoptera)
LABROUSSE, J. P. Dr.3eme cycle - Lab. d'Embryol., Univ. Paris VI, 4 place Jussieu, 75230 PARIS Cedex 05, France
a Gene amplification in oocytes. Pleurodeles waltlII (Urodelata)
LABROUSSE, Miss M. Dr.es Sci. - Lab. d'Embryol., Univ. Paris VI, 4 place Jussieu, 75230 PARIS Cedex 05, France
a Nuclear anomalies after interspecific nuclear transplantation. Pleurodeles waltlII (Urodelata)
LACROIX, J. C. - address unknown
LADAS, A. A. Dr. - Inst. für Landwirtsch. Zool. und Biennenk. der Univ., Melbweg, 53 BÖNN, W.Germany
LAFONT, R. D. A. M.S. - Lab. de Zool., Ecole Norm. Supérieure, 46 rue d'Ulm, 75230 PARIS Cedex 05, 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. Pieris brassicae (Lepidoptera)
a Electron microscopy of gonocytes and oogonia in the embryo. Homo sapiens (Primates)
b Duration of meiotic phases in ovaries cultured in vitro (autoradiography). 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. D.Sc. - Station Zool., Univ. de Paris VI, 06230 VILLEFRANCHE SUR MER, France
a Biochemical aspects of embryonic determination (studies of animalizing and vegetalizing agents). Paracentrotus lividus (Echinodermata)
LAMMER, G. J. Med.drs. - Dept. of Anat. and Embryol., Univ. of Nijmegen, Geert Grooteplein N. 21, NIJMEGEN, Netherlands
a The development of some basal telencephalic areas. Cricetus barbarense grisaeus (Rodentia)
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 The nature of dimethylsulfoxide as solvent in tests with teratogens. Gallus domesticus (Aves)
d Role of molecular shape in teratogenesis, studied with substituted pyridines
LANSTROM, U. - Dept. of Zoophysiol., Univ. of Umeå, S 901 87 UMEA, Sweden
a Oxygen uptake during embryogenesis. Tubifex spp. (Oligochaeta), Xenopus laevis (Anura) (with S. LOUVTRUP)
LANOT, R. Dr.es Sci. - Lab. de Zool., Univ. de Nancy I, Case Off.140, 54037 NANCY Cedex, France
a Malformations axiales: analyse causale de l'action tératogène du bleu trypan et de la RNA-se. Gallus gallus (Aves)
b Analyse causale de la somitogénèse. Gallus gallus (Aves)
a Effect of viral infections on foetal and neonatal weight. Rattus spec., Mus musculus (Rodentia)
LARINK, K. Dr - Zool. Inst. der Techn. Univ., Pockelsstr. 10a, 3300 BRAUNSCHWEIG, B.R.D. (Germany)
a Cleavage and organogenesis. Ophryotrocha (Polychaeta)
b Embryology. (Leptosomatidae; Machilidae, Thysanura)
LARSSON, K. S. Odont. D., Prof. - Lab. of Teratol., Karolinska Inst., S-104 01 STOCKHOLM 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)
LA SPINA, Miss R. D.Sci. - Ist. di Zool., Univ. di Palermo, Via Archirafi 18, 90123 PALERMO, Italy
a Fine structure of unfertilized eggs and egg fragments. Ascidia malaca, Phallusia mamillata (Asciidae)
b Analysis of the colour pattern. Discoglossus pictus (Anura)
The morphogenetic processes giving rise to phyllotactic patterns of the shoot apex. (Pteridophyta; Spermatophyta)

Developmental instructions for cellular interactions and divisions considered from the point of view of automata and language theory.

Mathematical models for the transition from vegetative to flowering condition in complex inflorescences. (Angiospermae)

a Identification of loci of ossification of skull; development of stress lines in vertebræ (radiography, microradiography, staining). Bos taurus (Artiodactyla)
b Descriptive and comparative anatomy of the developing lung. Bos taurus (Artiodactyla), Canis familiaris, Felis domesticus (Carnivora)

LINSKENS, H. F. Dr., Prof. – Dept. of Bot., Univ. of Nijmegen, Toernooiveld, Nijmegen, Netherlands
a Physiological and biochemical mechanism of the fertilization barrier during pollen tube growth, pollen germination, and in the ovule. Petunia spec. (Solanaceae), Lilium spec. (Liliaceae)
b Induction of meiotic division. Ulva spec. (Chlorophyceae), (Saccharomycetales), Lilium spec. (Liliaceae)

LINTERN-MOORE, Mrs. S.M. Ph.D. – Finsen Lab., Finsen Inst., 49 Strandboulevard, 2100 COPENHAGEN Ø, Denmark
a Development of the infant ovary.
b Role of the thymus in ovarian development. Mus musculus (Rodentia)

LIOSNER, L. D. Dr.biol.sci. – Inst. of Human Morphol., Acad. of Med. Sci. of the U.S.S.R., Shchepkin St. 61/2, MOSCOW 125110, 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. Oryctolagus 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. Perca fluviatilis, Cyprinus carpio (Teleostei)

a Electron microscopy of the process of cell death. Gallus domesticus (Aves)


LOCCI, Miss P. Dr.biol.sci. – Inst. of Histol. and Gen. Embryol., Univ. of Perugia, Via del Giochetto, 06100 PERUGIA, Italy
a Immunochemical and chromatographic research on transfer of albumen and yolk proteins into the embryo. Gallus domesticus (Aves)

LOFBERG, J. E. Fil.llic. – Zool. Inst., Univ. of Uppsala, Box 561, S-75122 UPPSALA 1, Sweden
a Electron microscopy of the process of neurulation. Ambystoma mexicanum (Urodela), Ciona intestinalis, Clavelina lepadiformis (Asciidiacea)

LOHANN, K. Dr.rer.nat. – Zool. Inst. of Univ., Weyertal 119, 5 KÖLN 41, B.R.D. (Germany)
a Cytology 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

LOMBARD (DES GOUTTES), Mrs. M. N. Drès Sci. – Unité de Physiol. Cell., INSERM, Inst. du Radium, Bâtiment 110, 91405 ORSAY, France
a Induction of kidney tubules in metanephrogenetic mesenchyme. Mus musculus, Rattus norvegicus (Rodentia)
b In vitro response of fetal Leydig cells to purified follicle stimulating hormone; loss of this response during postnatal development in relation to maturation of hypotalamic neurons controlling the secretion of interstitial cell stimulating hormone. Same species as a
c Steroidogenetic cells in developing ovary (cytology, light and electron microscopy, histochemistry of Δ.-3β-hydroxysteroid dehydrogenase). Mus musculus (Rodentia)
d Factors affecting in vitro 3H-thymidine uptake by embryonic and postembryonic hepatic cells. Rattus norvegicus (Rodentia)

LÖNNING (VADER), Mrs. S. Dr.phil. – Inst. of Biol. and Geol., Univ. of Tromsö, 9001 TROMSÖ, Norway
a The effect of drugs and environmental factors on development and morphogenesis (experimental study; electron microscopy). (Echinoidea), marine spp. (Teleostei)

LOPAHOV, G. V. Dr.biol.sci., Prof. – Inst. of Developm. Biol., Acad. of Sci. of the U.S.S.R., Vavilov St. 26, MOSCOW 117334, U.S.S.R., ISDB
a Inductive interactions of the cells in differentiating retina by means of combinations of cells of the eye rudiment and the gastrula ectoderm. Rana temporaria (Anura) (with O. A. HOPERSKAYA)
b Metaplastic potencies of embryonic and larval eye for lens and retina regeneration. Anoplichthys jordani (Teleostei) (with A. A. SOLOGUB)
c Stimulation of metaplasia of the pure pigmented epithelium of adults into retina by means of agents from newly differentiated retina. Rattus norvegicus (Rodentia) (with A. A. SOLOGUB)
d Determination of the site of formation of the falciform process by means of creation of
MAISONHAUTE, C. – Lab. de Zool., Centre d’Orsay, Univ. Paris-Sud, 91405 ORSAY, France
a Effects of actinomycin injected into the egg. Leptinotarsa decemlineata (Coleoptera)
b Cell cycle in early embryogenesis. Same species as a

MAJORCA (MONTELEONE), Mrs. A. Dr.Sci. – Zool. Inst., Univ. of Palermo, Via Archirafi 18, 90123 PALERMO, Italy
a Cytology of hybrids. (Ascidiaea; Amphibia)

MÄKENEN (LÖNNEBERG), 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. RAEKALLO)
b Histochemical studies on bone regeneration (fracture healing). Rattus spec., Cavia spec. (Rodentia) (with J. RAEKALLO)
c Enzyme histochemistry of skin transplants (allografts and homografts). Rattus spec., Cavia spec. (Rodentia) (with J. RAEKALLO)
d Biochemistry of vascular response in experimental wound healing. Rattus spec., Cavia spec. (Rodentia) (with J. RAEKALLO)
e Acceleration of wound healing with zinc sulphate. Rattus spec. (Rodentia) (with J. RAEKALLO)

MALAPRADE, Miss D. – Lab. d’Embryol., Univ. de Nancy I, 31 rue Lionnois, 54 NANCY, France

a Chemotaxis and aggregation; solubilization and function of receptor. Dictyostelium discoideum (Acraisiales)

MALECKA, Mrs. J. – Inst. of Plant Cytol. and Embryol., Jagiellonian Univ., św. Jana 20, 31–018 KRAKÓW, Poland
a Mode of reproduction in apomicts (cytology, embryology, experimental studies). sections Palaustre, Erythrosperma, Alpina of Taraxacum (Compositae)

MALESA, Miss A. – Dept. of Exper. Embryol., Inst. of Obstet. and Gynecol., Med. Acad., Karowa 2, 02-315 WARSZAWA, Poland
a Early development of eggs; experimental induction of chromosomal aberrations. Mus musculus (Rodentia)

MALET, P. M.D. – Lab. d’Histol.-Embryol., Fac. de Méd., Bd. Winston Churchill, B.P. 38, 63 CLERMONT-FERRAND, France

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 primary induction. Xenopus laevis (Anura)

MALIKOVA, Mrs. I. G. – Dept. of Embryol., Leningrad State Univ., Mendeleevsky St. 5, 199164 LENINGRAD, U.S.S.R.
a Restoration processes at different stages of ontogenesis. Dinophilus spec. (Archiannelida), Pygospio elegans (Polychaeta)

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. – Dept. of Molec. Biol., Free Univ. of Brussels, 67 rue des Chevaux, 1640 RHOIDE ST. GENÈSE, Belgium

MALCUSO, V. Dr.Sci., Prof. – Ist. di Biol. Gen., Univ. di Palermo, Via Divisi 83, 90133 PALERMO, Italy
a Histochemistry and ultrastructure of oogenesis and embryology. (Ascidiaea) (with M. GIANGUZZA and G. DOLCEMASCOLO)

MANDARON, P. M. Lic.êts Sci. – Lab. de Zool., Dépt. de Biol., Univ. Sci. et Méd. de Grenoble, B.P.53, 38041 GRENOBLE, France
a Mechanisms of evagination and differentiation of imaginal discs in different culture media. Drosophila melanogaster (Diptera)
b Effect of ecdysteroids on DNA, RNA, and protein synthesis in in vitro cultured imaginal discs. Same species as a

MANDEL, P. Prof. – Centre de Neurochimie, C.N.R.S., 11 rue Humann, 67085 STRASBOURG Cedex, France
a Differentiation of nerve cells in culture derived from cerebral cortex, spinal ganglion, sympathetic ganglion; factors influencing cell growth. Gallus domesticus (Aves), Mus musculus, Rattus spec.
b Development of neurotransmitters (aminergic, cholinergic) and of the synthesizing enzymes in the brain of inbred strains and mutants. Mus musculus (Rodentia)

MANELLI, H. Ph.D., Prof. – Ist. di Zool. 'Federico Raffaele', Univ. di Roma, Viale dell'Università 32, 00161 ROMA (7), Italy

a Embryonic erythropoiesis. Bufo bufo, Rana esculenta, Xenopus laevis (Anura). Gallus gallus (Aves)

b Differentiation and developmental correlations between hypophysis, adrenals, and gonads. Rana esculenta (Anura), Gallus gallus (Aves) (with L. MASTROLIA, E. MILANO-GRASSI, and F. ACCORDI)

c Biochemical events in polyspermic eggs. Paracentrotus lividus (Echinoidae) (with U. FERRINI and E. De MATTHAEIS)

d Physico-chemistry of embryonic ribosomes. Gallus gallus (Aves) (with U. FERRINI)

MANFREDI 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 nervous system. (Mollusca)

b Histophotometric quantitative determination of nuclear DNA (Feulgen reaction) during the development of central nervous system. Helix pomatia (Gastropoda), Rattus norvegicus (Rodentia)

MANGIA, F. Dr.biol. – Inst. of Histol. and Gen. Embryol., Univ. of Roma, Via Borelli 50, 00161 ROMA, Italy

MÁNKOWSKA, E. Mgr. – Inst. of Exper. Embryol., Inst. of Obstet. and Gynecol., Med. Acad., Karowa 2, 00–315 WARSZAWA, Poland

a The effect of embryotoxic and teratogenic agents on embryonic development, especially streptococcal alpha-toxins and insecticides. Mus musculus, Rattus spec. (Rodentia)

b Influence of some pesticides on embryonic development. Lepus europeus (Lagomorpha)


a Biochemistry of the male reproductive organs and semen. (Mammalia)

b Comparative biochemistry of reproduction. (Mollusca; Elasmobranchii), various large domestic, small laboratory, and wild animals (Mammalia)

c Physiology and biochemistry of spermatozoa. Octopus dolefini (Cephalopoda)

d Coenzymes in spermatozoa. Ovis aries, Bos taurus, Sus domesticus (Artiodactyla), Equus caballus (Perissodactyla)

MANNING, Miss M. J. Ph.D. – Dept. of Zool., Univ. of Hull, HULL HU6 7RX, England

a Maturation of immunocompetence correlated with development of the lymphoid tissues: removal of the thymus and exposure to antigenic stimulation (allografts, protein antigens etc.) at different larval stages; in vitro studies of the immunological capabilities of lymphocytes. Xenopus laevis (Anura)

MANSUETO (BONACCORSO), Mrs. C. Dr.nat.sci., Prof. – Zool. Inst., Univ. of Palermo, Via Archirafi 18, 90123 PALERMO, Italy

a Investigations on the embryonic development by use of radio-isotopes. Ciona intestinalis (Asciidea)

b Action of actinomycin D on embryonic development. Sabellaria alveolata (Polychaeta)


MARAUD, R. Dr. en Méd., Dr.es 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 de la thyroide embryonnaire. (Aves)

MARCEL, R. Dr.es Sci. – Serv. de Biol. Anim., Univ. des Sci. et Techn. de Lille, B.P.36, 59650 VILLENEUVE D'ASCQ, France

a Biochemistry of trophic factor and specific inhibition of cephalic and caudal regeneration. Eisenia fetida (Oligochaeta)

b Ultrastructure of nerve cells during regeneration. Same species as a

c Immunofluorescence of factors governing morphogenesis. Same species as a

MARCHAND, C. R. Doct.3e Cycle – Lab. de Zool., Univ. de Besançon, Place Maréchal Leclerc, 25030 BESANÇON, France

a Evolution histophysiologique de l'appareil reproducteur au cours de l'ontogenèse chez des hybrides stériles. Cairina moschata x Anas platyrhynchos (Aves) (avec L. GOMOT)

MARCHISIO, P. C. M.D. – Ist. di Istol. ed Embriol. Gen., Univ. di Torino, Corso Massimo d'Azeglio 52, 10126 TORINO, Italy

a Chromatography and electrophoresis of proteins in the optic lobes of eye deprived animals during pre- and postnatal development. Gallus domesticus (Aves)

b The biochemical factors involved in the control of optic centre differentiation, with special attention to the role of retinal fibres (experimental investigation). Gallus domesticus (Aves)

c The axoplasmic transport of proteins along the optic pathway of embryos and the effects of flow inhibitors on the morphological and chemical differentiation of tectum opticum neurons. Gallus domesticus (Aves)

d The synthesis of the neurotubular protein during the development of the central nervous system and its relationship with other parameters of maturation in nerve cells. Gallus domesticus (Aves)

e Axonal transport of RNA and its characterization in the optic pathway of the embryo. Gallus domesticus (Aves)
MARCOU (ALLUM), Mrs. A. E. J. B.V.Sc., M.R.C.V.S. - Dept. of Anat., Univ. of Liverpool, P. O. Box 147, LIVERPOOL L69 3BX, England
a Effects of enriched and deprived environments on the development of synaptic size and density in the non-visual cerebral cortex. Rattus norvegicus (Rodentia)

MARIN (LEWIN), Mrs. L. Dr.ès Sci. - Lab. d'Embryol. Expér. du Coll. de France et du C.N.R.S., 11 Place M. Berthelot, 75 PARIS Ve, France
b 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 mésochymes hétéologues sur l'évolution ultrastructurale de l'épithélium. Gallus gallus (Aves) (avec F. DAMERON)

MARIENI, Mrs. M. Dr. - Ist. di Anat. Comp., Univ. di Perugia, Via A. Pascoli, 06100 PERUGIA, Italy
a Ultrastructure of the cocoon. Dugesia lugubris (Tubellaria)

MARIINI, Miss M. Dr.Biol.Sci. - Ist. di Anat. Comp., Univ. di Modena, Via Berengario 14, 41100 MODENA, Italy
b Growth and differentiation of the subcommisural organ. (Teleostei)
c Differentiation of Rohon-Beard cells. Salamandra spec. (Urodela)
d Differentiation of the dorsal cells in the spinal cord. (Teleostei)

a The use of enzyme preparations for the analysis of the role of acetylcholine and biogenic monoamines in early embryogenesis. Strongylocentrotus nudus (Echinoidea) (with G. A. BUZNIKOV)
b The products of enzymic deamination of serotonin and catecholamines as potential regulators of cleavage divisions. Strongylocentrotus nudus, S. intermedius (Echinoidea)

MARRARO (CARNAZZA), Mrs. M. L. - Ist. di Anat. Umana Norm., Univ. di Catania, Via Biblioteca 4, 95124 CATANIA, Italy
a Structural changes of allantoic membrane epithelium submitted to the action of different agents. Gallus domesticus (Aves)
b Pineal gland homoplastic graft in chorioallantoic membrane. Same species as a

MARRÉ, E. - Ist. di Sci. Bot. dell'Univ., Cat.dI Fisiol.Vegetale, Via Giuseppe Colombo 60, 20133 MILANO, Italy

a Differentiation and growth of the pigment epithelium of the retina, especially DNA synthesis, cell division, and mechanisms of cell polyploidization. Rattus norvegicus (Rodentia) (with O. G. STROEVA)

MARSK, L. M.D. - Lab. of Teratol., Karolinska Inst., S-104 01 STOCKHOLM 60, Sweden
a Perinatal vascular changes in the digestive system. Rattus norvegicus (Rodentia)
b Transplantation of fertilized ova. Mus musculus (Rodentia)

MARTHY, H. J. Ph.D. - Lab. Arago, Univ. de Paris VI, 66650 BANYULS-sur-Mer, France
a Determination, regulation, localization, and stability of primordial pattern. Loligo vulgaris (Cephalopoda)

MARTIN (FORGET), Mrs. C. Lic.ès Sci. - Inst. d'Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France
a Experimental morphogenesis of embryonic kidney. Gallus gallus (Aves) (with Y. CROISILLE and M. GUMPEL)

MARTIN, G. - Lab. de Physiol. et Génét. des Crustacés, Univ. de Poitiers, 40 av. du Rector Pineau, 86022 POITIERS, France
a Contrôle neurohumoral de la différenciation sexuelle et de la mue. Isopoda, Crustacea)

a In vitro and in vivo growth, determination and differentiation of teratoma cells

MARTIN, R. P. Dipl.d'Étud.Approf. - Lab. d'Embryol., Unité de Sci., Univ. de Caen, 14032 CAEN, France
a Renouvellement et différenciation des cellules de l'épithélium intestinal. Ambystoma mexicanum (Urodela)

MARTÍNEK, J. M.D. - Inst. of Embryol., Charles Univ., Albertov 4, 128 00 PRAHA 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. Same species as a
c Ultrastructure and histochemistry of ovary differentiation; development of ovum and follicle cells. Rattus spec. (Rodentia)

MARTINOVITCH, P. N. Ph.D. - Dept. of Exp. Histol. and Org. Cult., Inst. of Nucl. Sci., 'Boris Kidric', Vinca, P. O. Box 522, BEOGRAD, Yugoslavia

ISDB
France

a Teratogenic action of parathion: effect on bovine amines, catecholamines and glycogen (histochemistry, electron microscopy). Gallus domesticus (Aves)

MELEHOVA, Mrs. O. P. – Chair of Normal of Embryol., Biol. Fac., State Univ. of Moscow, Lenin Hills, MOSCOW 117234, U.S.S.R.

a Processes involving free radicals in normal and pathological development. Rana temporaria, R. esculenta (Anura) and other Vertebrata

MELLER, K. Dr.med., Prof. – Lehrstuhl für Anat.I, Ruhr-Univ., Buscheyst., Postfach 2148, 463 BOCHUM-Querenburg, B.R.D. (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 nerve cells (autoradiography). Gallus domesticus (Aves)


a The role of normal and experimentally induced necrosis in teratogenesis

b Cytomorphological 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 Development of cerebral vesicles. Gallus domesticus (Aves)

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 hypoglycémiant, antimétabolites. Rattus spec. (Rodentia) (avec H. TUCHMANN-DUPLESSIS)

b Influence de la cortisone sur la gestation et le développement foetal. Same species as a

c Influence des alcaloïdes du Rauwolfia, de la résépine et de la désépitrine sur le développement. Same species as a (avec H. TUCHMANN-DUPLESSIS)

d Influence des neuroleptiques sur les malformations congénitales. Rattus spec., Mus spec. (Rodentia), Oryctolagus cuniculus (Lagomorpha)

e Diabète experimentale et gênesse. (Mammalia)

f Influence des antimétaboliques sur la gestation. (Rodentia) (avec H. TUCHMANN-DUPLESSIS)

MERKER, H. J. Dr.med., Prof. – Anat. Inst. der Freien Univ. Berlin, Kön.-Luise-Str. 15, 1 BERLIN 33, B.R.D. (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, B.R.D. (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, G. Dr. – Lab. of Molec. Embryol., Consiglio Naz. delle Ricerche, Via Toiano 2, 80072 ARCO FELICE (Napoli), Italy

ISDB

a Mechanism of protein synthesis activation after fertilization. (Echinoidea)

b Regulation of thyroglobulin synthesis at translational and transcriptional level in normal and neoplastic thyroid. (Mammalia)

c Regulation of protein synthesis in brain. (Mammalia)

MEUSY, J. J. D.E.S. – Lab. d’Evol. des Etres Organisés, Fac. des Sci., 105 Bd. Raspi, 75 PARIS Vle, France


MGLINETZ, V. A. Dr. – Lab. of Exp. Genet., Inst. of Med. Genet., Khariszkoye Chaussee 6a, 115478 MOSCOW, U.S.S.R.

a Determination of imaginal disc cells in normal and mutant strains. Drosophila melanogaster (Diptera)

b Interaction of homoectic and non-homoectic genes during development. Same species as a

MICCARELLI (SBRENNA), Mrs. A. Dr.Biol. – Ist. di Zool., Univ. di Ferrara, Via Prevati 24, 44100 FERRARA, Italy

a Hormonal control of embryonic development. Schistocerca gregaria (Orthoptera)

b Effect of juvenile hormone mimetics on embryos and embryonic cells. Same species as a


a Locomotion and behaviour of epithelial cells in tissue culture. Gallus gallus (Aves), Mus musculus (Rodentia)

MIGLIORINI (BRUSCHELLI), Mrs. G. Dr.Sci.Biol. – Ist. di Biol. Gener., Univ. di Perugia, Via del Giochetto, 06100 PERUGIA, Italy

a Malformazioni embrionali da vitamina A. Bufo vulgaris (Anura)

BUDAPEST VIII, Hungary


a) Immunology and immunochemistry of antigens in the retina during development. Gallus domesticus (Aves)
b) Immunofluorescence of tissue antigens in retina and brain primordia. Gallus domesticus (Aves)

MILAIRE, J. M. D., Prof. - Lab. d'Anat. et d'Embryol. Hum., Univ. Libre de Bruxelles, 97 rue aux Laines, 1000 BRUXELLES, Belgium

a) Development of the apical ectodermal ridge in limb buds (electron microscopy). Rattus spec. (Rodentia)
b) Autorigraphy of mesodermal growth in thin sections of limb buds. Rattus spec. (Rodentia)
c) Experiments on the regulative properties of the forelimb buds. Pleurodeles waltlII (Urodela)
d) Behaviour in vitro of limb bud components. Rattus spec. (Rodentia)

d) Pathogenesis of preaxial polydactyly induced in hindlimb buds by hadacidin. Mus musculus (Rodentia)
f) Pathogenesis of preaxial hyperdactyly in heterozygotes for the Xr gene. Mus musculus (Rodentia)

MILANO-GRASSI, Mrs. E. Dr. Biol. Sci. - Ist. di Zool. 'Federico Raffaele', Viale dell'Universita 32, 00161 ROMA (7), Italy

a) Differentiation and developmental correlations between hypophysis, adrenals, and gonads. Rana esculenta (Anura), Gallus gallus (Aves) (with H. MANELLI, L. MASTROLIA, and F. ACCORDI)
b) Experiments on differentiation of embryonic gonads. Rana esculenta (Anura), Gallus gallus (Aves)

MILES, V. J. B.Sc. - Dept. of Anat. and Embryol., Univ. Coll. London, Gower St., LONDON WC1E 6BT, England

a) Nucleic acid metabolism in oocytes. Gallus domesticus (Aves)

MILKOVIĆ (ZULI), Mrs. K. Ph.D., Prof. - Inst. of Biol., Fac. of Med., Univ. of Zagreb, Šalata 3, P. O. Box 166, 14001 ZAGREB, Yugoslavia

a) Development and function of the pituitary-adrenocortical system in foetuses and neonate (biochemistry, histology, histochemistry). Rattus norvegicus (Rodentia) (with R. KLEPAC, M. PERUZOVIC and B. DOMAG)
b) Effects of perinatal influences, especially adrenocorticoids, on emotionality, active and passive avoidance conditioning. Rattus norvegicus (Rodentia) (with M. PERUZOVIC)

MILLONIC, G. M.D. - Lab. of Molec. Embryol., Consiglio Naz. delle Ricerche, Via Toiano 2, 80072 ARCO FELICE (Napoli), Italy

a) Electron microscopy of early development. Paracentrotus lividus, Arbacia lixula (Echinoidea)
b) Fine structure of cilia and stereocilia in embryos. Same species as a
c) Electron microscopic histochemistry of alcaline phosphatase during embryogenesis. Same species as a
d) Oogenesis. Ascidia malaca (Ascidiae)

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)

MINGANTI, A. Dr., Prof. - Ist. di Anat. Comp., Univ. di Genova, Via Balbi 5, 16126 GENOVA, Italy

a) Cholinesterase and phosphatase activities in eggs and embryos. Balanus spec., Lepas spec. (Cirripedia, Crustacea)

MIRCOV, Mrs. O. M.D. - Dept. of Med. Biol., Med. School, P-ţa 23 August 1, TIMIŞOARA, Rumania

a) Development of facial primordia. Gallus domesticus (Aves)

MIRRE, C. M.és Sc. - Lab. d'Histol. et Embryol. II, Univ. d'Aix-Marseille, 27 Bd. Jean Moulin, 13385 MARSEILLE CEDEX 4, France

a) Development des gonades. Gallus domesticus (Aves), (Mammalia)


a) Cytological changes in pigment epithelium cells in the course of their transformation into neural retina during eye regeneration: RNA and DNA synthesis, cell cycles, the synthesis of general and specific protein products. Triturus cristatus, T. vulgaris, Pleurodeles waltlII (Urodela)
b) Regeneration of the neural retina with special reference to isozymic patterns of LDH. Triturus cristatus (Urodela) (with L. I. KOROCHKIN)

c) DNA synthesis and cell cycles during eye development, especially development of regional differences in neural retina and pigment epithelium. Acipenser stellatus, A. gueldenstättI (Chondrostei) (with E. A. BABURINA, O. G. STROEVA, and V. F. SINITSINA)


a) Biochemical mechanism underlying heterocyst pattern. Anabaena spec. (Cyanophyceae)

MITCHISON, J. M. Sc.D., Prof. -Dept. of Zool., Univ. of Edinburgh, West Mains Rd., EDINBURGH EH9 3JT, Scotland, U.K.

MITOLO, V. M.D. - Inst. of Human Anat., Fac. of Med., Univ. of Bari, Policlinico, 70124 BARI, Italy

a) 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.
c) Computer simulation of growth and morphogenesis of the limb buds. Gallus domesticus (Aves)
d) Growth of spinal cord. Gallus domesticus (Aves)
a Hypothalamic control of the thyroid function in the neonate. Oryctolagus cuniculus (Lagomorpha), Cavia porcellus (Rodentia)
b Influence of encephalotomy on adrenocortical and thyroid function in the fetus. Oryctolagus cuniculus (Lagomorpha), Rattus spec., Cavia porcellus (Rodentia)
MOCQUARD, J. P. Dr. – Lab. de Physiol. et Génét. des Crustacés, Univ. de Poitiers, 40 av. du Recteur Pineau, 86022 POITIERS, France
Etude statistique de la croissance et de la mue; action des facteurs externes sur les systèmes neuro-sécréteurs. Porcellio dilatatus, Ligia oceanica (Isopoda, Crustacea)
Recherches sur l'expression mathématique des lois de la croissance relative, plus particulièrement des organes soumis aux hormones sexuelles. Same species as a
MODAK, S. P. Dr. és Sc.Biol. – Inst. Suisse de Rech. Expérir. sur la Cancer, rue Bugnon 21, 1011 LAUSANNE, Switzerland
MODLINSKI, J. A. M.Sc. – Dept. of Embryol., Zool. Inst., Univ. of Warsaw, Krakowskie Przedmiescie 26/28, WARSZAWA 64, Poland
Fertilization and early development. Mus musculus (Rodentia)
MOE, H. M.D., Prof. – Anat. Dept. C, Univ. of Copenhagen, Universitetsparken 1, 2100 COPENHAGEN Ø, Denmark
Differentiation of ameloblasts. Rattus norvegicus (Rodentia)
MOFFAT, D. B. M.D., Prof. – Dept. of Anat., Univ. Coll., Cathays Park, CARDIFF CF1 1XL, Wales, U.K.
Postnatal development of kidney. (Mammalia)
MOHR, H. Dr.reer.nat., Prof. – Biol. Inst.II, Lehrst. für Bot., Univ., Schänzlest.9, 78 FREIBURG/Br., B.R.D. (Germany)
Mechanism of phytochrome action at the level of phytochrome-mediated enzyme induction and enzyme repression, and its action to development. Sinapis alba ( Cruciferae)
MOLD (SZIRMAI), Mrs. K. M.D. – Inst. of Histol. and Embryol., Med. Univ., Tüzoltó u. 58, BUDAPEST IX, Hungary
Teratogenesis. Gallus domesticus (Aves), Rattus rattus (Rodentia)
MOLOTKOVA, Z. Ph. – Inst. of Human Morphol., Acad. of Med. Sci. of the USSR, Shchepkin St. 61/2–18, MOSCOW 125110, U.S.S.R.
immunological relationships between mother and foetus. Rattus norvegicus (Rodentia), Papio hamadryas, Macaca mulatta, Homo sapiens (Primates)
Humoral interactions between maternal (reticulo-endothelial) and leucopoietic system of mother and foetus. Rattus norvegicus (Rodentia), Macaca mulatta ( Primates)
MONESI, V. M.D., Prof. – Ist. di Istol. ed Embriol. Gen., Univ. di Roma, Città Universitaria, 00185 ROMA, Italy
MONNICKENDAM, Miss M. A. M.Sc. – School of Biol. Sci., Univ. of East Anglia, University Plain, NORWICH, NOR 88C, England
Control of cell division. Xenopus laevis (Anura), Amphimia means, Triturus cristatus (Urodela)
MONROY, A. M.D., Prof. – Lab. of Molec. Embryol., Consiglio Naz. delle Ricerche, Via Toiano 2, 80072 ARCO FELICE (Napoli), Italy ISDB
Changes in molecular organization of the egg surface during maturation, fertilization, and early development. Ascidia macula (Ascidiae), Xenopus laevis (Anura)
Relation between molecular organization of the cell surface and DNA replication. Paracentrotus lividus (Echinoidae)
MOOR, R. M. Ph.D. – A.R.C. Unit of Reprod. Physiol. and Biochem., Univ. of Cambridge, 307 Huntingdon Rd., CAMBRIDGE, CB3 0QJ, England
The development and manipulation of the early embryo. (Mammalia)
The survival and development of embryonic and somatic cells after introduction into eggs and blastocysts. Oryctolagus cuniculus (Lagomorpha), Ovis aries (Artiodactyla)
Developmental capacity of single blastomeres. Oryctolagus cuniculus (Lagomorpha), Bos taurus, Ovis aries (Artiodactyla)
MOORE, G. P. M. Ph.D. – Finsen Lab., Finsen Inst., 49 Strandboulevarden, 2100 COPENHAGEN Ø, Denmark
Functional changes in genetic activity during oogenesis: autoradiography of RNA synthesis in the ovary; RNA polymerase activity in oocytes; RNA synthesizing capacity of the oocyte in relation to the size of the oocyte and its nucleus. Mus musculus (Rodentia)
Electron microscopy of normal myoblasts undergoing active fusion, and myoblasts from dystrophic origin, especially cellular relationships in explant cultures. Gallus domesticus (Aves), Mus musculus (Rodentia), Homo sapiens (Primates)
Surface properties and behaviour of embryonic cells. Gallus gallus (Aves)
MORACZEWSKI, J. Ph.D. – Dept. of Cytol., Zool. Inst., Warsaw Univ., Krakowskie Przedmiescie 26/28, WARSZAWA 64, Poland
Asexual reproduction and developmental morphology. (Catenulidae, Turbellaria)
MORATA, G. M.Sc. – Sect. Developm. Genet., Inst. of Genet. and Anthropol., Velazquez 144, MADRID 6, Spain
Heredity of determinative decisions in clones of imaginal disc cells. Drosophila melanogaster (Diptera)
MORGAN, P. R. B.Sc., B.D.S. – Dept. of Anat., Sch. of Med., Royal Free Hosp., 8 Hunter St.,
a Cell interaction in embryos. Paracentrotus lividus (Echinoidae)

b Ribosomal RNA synthesis in embryogenesis. Same species as a

c RNA synthesis in regenerating liver, especially mitochondrial RNA. Rattus spec. (Rodentia)

Drs. rer. nat. Cytophotometry

ISDB

a Cytophotometry on embryonic fibroblasts: DNA content as a function of oxygen concentration. Gallus domesticus (Aves)

MUTOLO, V. M. D. – Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

a Cell interaction in embryos. Paracentrotus lividus (Echinoidae)

b Ribosomal RNA synthesis in embryogenesis. Same species as a

c RNA synthesis in regenerating liver, especially mitochondrial RNA. Rattus spec. (Rodentia)

MYSTKOWSKA-BACZKOWSKA, Mrs. E. T. Dr. biol. – Dept. of Exper. Embryol., Inst. of Obstet. and Gynecol., Medical Academy, Karowa 2, 00–315 WARSZAWA, Poland

a The interdependence between somatic and germinal tissues of the gonad in experimentally obtained chimaeras. Mus musculus (Rodentia)

b Embryonic development. Cleithronomys glareolus (Rodentia)

NAAKTEGBOREN, C. Dr. – Dept. of Obstet. and Gynecol., Univ. of Amsterdam, Wilhelmina Gasthuis, AMSTERDAM, Netherlands

a Foetal growth as a dependent of placental size and uterine characteristics. Ovis aries (Artiodactyla), Rattus spec. (Rodentia) and other Mammalia

b Electrophysiology in the uterus in the perinatal period, studied in vivo. Canis familiaris (Carnivora), Ovis aries (Artiodactyla), Oryctolagus cuniculus (Lagomorpha)

NADAL, Cl. Dr. en Méd., Dr. es Sci. – Unité de Physiol. Cell., INSERM, Inst. du Radium, Bâtiment 110, 91405 ORSAY, France

a Substances regulating the number of hepatic cells during life and the regeneration after partial hepaectomy. Rattus norvegicus (Rodentia)

b Hepatic polyploidy, its development during life and its control system. Rattus norvegicus (Rodentia)

NAGEL, J. D. Sc. – Lab. de Physiol. Anim., Univ. de Reims, B.P. 347, 51062 REIMS Cedex, France

a Hemopoietic function of the foetal liver; factors controlling its progressive disappearance. Rattus norvegicus (Rodentia) (with R. L. JACQUOT)


a Expression des spécificités interspécifiques et action de facteurs spécifiques sur les stades embryonnaires précoces. Triturus alpestris, T. palmaus, Ambystoma mexicanum (Urodela)


Models for control of development at the multicellular level; theoretical study combined with experiments. (Acrasiales; Amphibia)

NARDI, Miss I. Dr. Biol. Sci. – Chair of Histol. and Embryol., Univ. of Pisa, Via A. Volta 4, 56100 PISA, Italy

a Mitotic and lambbrush chromosomes, especially RNA/DNA hybridization. Triturus spp. (Urodela)

NAVARRATNAM, 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., Prof. – Dept. of Marine Biol., Univ. of Liverpool, PORT ERIN, Isle of Man, U.K.

a Developmental aspects of behaviour. Callinectes sapidus, Macropipus spec. (Decapoda, Crustacea)

b Nucleic acids and subcellular particles in oogenesis and early development. (Amphibia) (with V. HABROVÁ)

b Transplantation of nuclei in relation to nucleic acids. (Amphibia) (with F. SLÁDEČEK)

NEEDHAM, A. E. D. Sc. – Dept. of Zool., Univ. of Oxford, South Parks Rd., OXFORD OX1 3PS, England

a Beryllium chloride and regeneration. Polycelis nigra (Turbellaria)

NEEDHAM, J. Dr., Prof. (Emer.) – Gonville and Caius Coll., CAMBRIDGE, England

NEUBERT, J. Dr. rer. nat. – Inst. für Flugmedizin der DVFLR, Kölnerstr. 70, 53 BONN-Bad Godesberg, B.R.D. (Germany)

a Effect of simulated weightlessness on ultrastructure of the embryonic vestibular organ. (Anura) (with W. BRIEGLEB)

b Teratogenic and genetic anomalies induced by simulated weightlessness (fast running clinostat). Tribolium confusum (Coleoptera) (with W. BRIEGLEB)

NEUMANN, D. Dr. rer. nat., Prof. – Zool. Inst. der Univ., Weyertal 119, 5 KÖLN 41, B.R.D. (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, 13003 MARSEILLE, France

b Experimental morphology of pinnate leaves: 1. prevention of division of leaflet primordia by
Determination on flower bilateralism (microsurgical method). Pismum sativum (Leguminosae)

NEV, A. T. Ph.D. – Marshall Lab., Dept. of Physiol., Univ. of Cambridge, Downing St.,
CAMBRIDGE CB2 3EG, England ISDB

NEWTH, D. R. Ph.D., Prof. – Dept. of Zool., Univ. of Glasgow, GLASGOW G12 8QC, Scotland, U.K. ISDB

a Properties of primordial germ cells. Xenopus laevis (Anura)
b Transplantation immunobiology. Xenopus laevis (Anura)

NEYFAKH, A. A., Dr. biol.sc., Prof. – Lab. of Biochem. Embryol., Inst. of Developm. Biol., Acad. of
Sci. of the USSR, Vavilov St. 26, MOSCOW 117334, U.S.S.R.

Médecine, 1211 GENEVE 4, Switzerland ISDB

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. Gallus
domesticus (Aves)
c Role of Hensen’s node in somitic differentiation. Gallus domesticus (Aves)
d Subcellular changes during early morphogenesis. Gallus domesticus (Aves) (with J. GALLERA)

NICOTRA, Miss A. Dr.biol. – Ist. di Zool. ‘Federico Raffaele’, Viale dell’Università 32, 00161
ROMA (7), Italy

a Interactions between mitochondrial transcription and early embryonic differentiation. Para-
centrotus livdus (Echinoidea)
b Nuclear protein changes during spermatogenesis. Same species as a (with E. De MATTHAEIS)

Buitenveldert, Netherlands

a Ontogenetic malformations of the heart. Sus scrofa, Bos taurus (Artiodactyla)
b Pathological development of heart and vessels. Same species as a
c Pathological development of bone. Sus scrofa (Artiodactyla)
d Neonatal circulation. Sus domesticus (Artiodactyla)
e Teratology. (Mammalia), Homo sapiens (Primates)
f Development of the subneural apparatus. Rattus spec. (Rodentia), Oryctolagus cuniculus
(Lagomorpha)
g Regeneration of terminal nerves and motor end plates. Same species as f

NIELSEN, Cl. Dr.phil. – Marine Biol. Lab., Univ. of Copenhagen, Strandpromaden, 3000
HELSINGØR, Denmark

a Life histories; comparison with Ectoprocta; phylogenetic implications. Loxosoma spec.,
Loxosomella spec., Pedicellina spec., Barentsia spec. (Endoprocta), Alcyonidium spec., Flustrel-
lidra spec. (Ectoprocta)
b Ciliary mechanisms of adults and larvae. Loxosoma spec., Loxosomella spec., Pedicellina spec.,
Barentsia spec. (Endoprocta), Alcyonidium spec., Electra spec. (Ectoprocta)

NIUWKOOP, P. D. Phil. Dr., Prof. – Hubrecht Lab. (Intern. Embryol. Inst.), Uppsalalaan 1,
Universiteitssenren ‘De Uithof’, UTRECHT, Netherlands ISDB

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. Discoglossus pictus, Xenopus laevis (Anura)
(with E. C. BOTERENBROOD, K. HARA, and G. A. UBBELS)

NIGON, V., Dr.ès Sci., Prof. – Sect. de Biol. Génér. et Appl., Univ. de Lyon 1, 43 Bd. du
11 Novembre 1918, 69621 VILLEURBANNE, France

a Météabolisme dans les diverses phases de l’évolution. Euglina gracilis (Euglenophyceae)
b Différenciation des erythrocytes. Gallus domesticus (Aves)

NIKAWA, N. M.D. – Lab. of Embryol. and Cytogenet., Univ. Clinic of Gynecol. and Obstet.,
Geneva Univ., 20 rue Alcide-Jenetz, 1211 GENÈVE 4, Switzerland

a Oral contraceptives and chromosomal abnormalities in spontaneous abortions. Homo sapiens
(Primates)
b Phenotype and unusual chromosome abnormalities in abortions. Homo sapiens (Primates)
c Determination of parental contribution of extra chromosomes. Homo sapiens (Primates)

NIJWEIDE, P. J. Drs. – Lab. for Cell Biol. and Histol., State Univ., Rijnburgerweg 10, LEIDEN,
Netherlands

a Calcium and strontium metabolism of embryonic calvarium periost. Gallus domesticus (Aves),
Rattus spec. (Rodentia)

NIKITIN, N. S. Dr. – Dept. of Embryol., Leningrad State Univ., Mendeleevsky St.5, 199164
LENINGRAD, U.S.S.R.

a Morphogenetic potentiality of somatic cells. Ephydatia fluviatilis (Porifera)
b Development of culture media for dissociated cells. (Porifera)

NIKITIONA, Mrs. L. A. Cand.biol.sci. – Inst. of Developm. Biol., Acad. of Sci. of the U.S.S.R.,
Vavilov St. 26, MOSCOW 117334, U.S.S.R.

a Analysis of developmental potencies of nuclei in sequential stages of oogenesis by means of their
transplantation into enucleated eggs. (Acipenseridae, Chondrostei; Amphibia)

NOACK, W. Dr. – Anat. Inst. der Freien Univ. Berlin, Köln.-Luise-Str. 15, 1 BERLIN 33, B.R.D.
(Germany)
a Development and experimental teratology of lung and muscles. Rattus spec., Mus musculus
(Rodentia)

73

PEHLEMMANN, F. W. Dr. – Anat. Inst. der Univ., Olshausenstr. 40–60, 23 KIEL, B.R.D. (Germany)

a Ultrastructural morphogenesis and functional morphometry of endocrine glands (adeno-hypophysis, adrenal, thyroid). Rana temporaria, Xenopus laevis (Anura)
b Ultrastructure of amitosis. Rana temporaria (Anura), Homo sapiens (Primates)

PELLING, C. Dr. – Max-Planck Inst. für Biol., Abt. Beermann, Spemannstr. 34, 74 TÜBINGEN, B.R.D. (Germany) ISDB

PERKOWSKA (MOSER), Mrs. E. Ph.D. – Zaulke 28, Zoliborz, WARSAWA, Poland

a Intranuclear structures and their relation to oxyphosphorylation in growing oocytes (histochemistry). Silphidae spp. (Coleoptera)


PERRIER, Mrs. H. D.E.S. – Lab. de Physiol. Anim., Univ. de Reims, B.P. 347, 51062 REIMS Cedex, France

a Electron microscopy of the foetal and perinatal pancreas. Rattus norvegicus (Rodentia)

PERRY, Miss M. M. B.Sc. – Inst. of Anim. Genet., Univ. of Edinburgh, West Mains Rd., EDINBURGH EH9 3JN, Scotland, U.K.

a Study of certain features of developing embryos os by electron microscopy. (Amphibia)
b Electron microscopy of mutants. Drosophila spp. (Diptera)
c Microfilaments in developing embryos. Triturus alpestris (Urodela), Xenopus laevis (Anura) (with G. G. SELMAN)

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

PERUZOVIC (GRADT), Mrs. M. Grad. – Inst. of Biol., Fac. of Med., Univ. of Zagreb, Šalata 3, P.O. Box 166, 41001 ZAGREB, Yugoslavia

a Development and function of the pituitary-adrenocortical system in foetus and neonate (biochemistry, histology, histochemistry). Rattus norvegicus (Rodentia) (with K. MILKOVIC)
b Effects of perinatal influences, especially adrenocorticoids, on emotionality, active and passive avoidance conditioning. Rattus norvegicus (Rodentia) (with K. MILKOVIC)

PÉTAVY, G. – Lab. d’Entomol. et d’Eco physiol. Expér., Univ. de Paris XI, 91405 ORSAY, France

a Histology and cytotoxochy of yolk, yolk cells, amnion, and serosa; their relations with the embryo during blastokinesis and definitive dorsal closure. Locusta migratoria (Orthoptera)
b Analysis of hydration of the egg in relation with organization of the yolk system and structure of envelopes, especially the serosal cuticle. Locusta migratoria (Orthoptera)

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 Follicle growth initiation. Mus musculus (Rodentia)
c The effect of low protein diet on early development of reproductive organs. Mus musculus (Rodentia)
d The effect of hormones (testosterone, oestrogen, gonadotropin) on ovarian development in infancy. Mus musculus (Rodentia)

PETERS, N. Dr. rer. nat., Prof. – Inst. für Hydrobiol. und Fisch. wiss., Univ. Hamburg, Olbersweg 24, 2 HAMBURG-Altona 1, B.R.D. (Germany)
a Effect of metabolic inhibitors on different developmental stages. Rivulus cynthiaeaeus, Anguilla anguilla (Teleostei)
b Development of eye-rudiments in cave-fish. Astyanax mexicanus (Characidiae, Teleostei)

PETERS, P. M.V.D. – Dept. of Teratol. and Pharmacol. Pathol., Natl. Inst. of Public Health, P. O. Box 1, BILTHOVEN, Netherlands

a Morphogenesis of malformations caused by retinoic acid: relation to dose and stage at treatment. Rattus norvegicus (Rodentia)
b Normal morphogenesis as standard for teratogenic procedures. Mus musculus (Rodentia)

PETERS, Th. Dr. med. – Anat. Inst. der Univ., Friedrichstr. 24, 63 GIESEN, B.R.D. (Germany)
a Alterations in tissue differentiation after x-ray-treatment. Triturus alpestris (Urodela)
b Intravitral microscopy of normal and x-ray treated gastrulae. Same species as a

PETRUCCI, D. – Inst. of Gen. Biol., Univ. of L’Aquila, L’AQUILA, Italy

PETRY, G. Dr. med., Prof. – Anat. Inst., Univ. Marburg, Robert-Koch-Str. 6, 355 MARBURG/Lahn, W. Germany

PETZOLDT, U. Dr. rer. nat. – Arbeitsgr. Prof. G. H. M. Gottschewski am Max-Planck-Inst. für Immunbiol., Stefan-Meier-Str. 8, 78 FREIBURG i.Br., B.R.D. (Germany)
a Protein and nucleic acid synthesis in early cleavage stages. 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 Embryophysiology of the circulation in the aortic arches and the heart. Gallus domesticus (Aves)
c Cell death in the development of the heart. Gallus domesticus (Aves), Rattus norvegicus (Rodentia), Homo sapiens (Primates)
d Teratogenic mechanisms of cardiovascular malformations. Gallus domesticus (Aves), Rattus norvegicus (Rodentia)

PFLUGFELDER, O. Dr. rer. nat., Prof. (emer.) – Inst. für Allgem. und Spez. Zool., Naturwissensch. 77
Differentiation of primordia analysed by the use of teratogenic substances. Cavia cobaya (Rodentia)


a Male and female meiosis. Mus spec., Acomys spec., Microtus spec. (Rodentia), Homo sapiens (Primates)

POLEZHAEV, L. V. Dr.biol.sci., Prof. ~ Inst. of Developm. Biol., Acad. of Sci. of the USSR, Vavilov St. 26, MOSCOW 117334, U.S.S.R. ISDB

a Regeneration of cranium bones. Mus domesticus, Rattus norvegicus, Oryctolagus cuniculus, Felis domestic, Canis familiaris (Mammalia)
b Regeneration of myocardium. Rattus norvegicus, Oryctolagus cuniculus, Felis domestic, Canis familiaris (Mammalia)
c Restoration of regeneration capacity of limbs after x-irradiation. Ambystoma mexicanum (Urodela) (with N. A. TEPLITZ and S. J. TUCHKOVA)
d Physiologial 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 scrofa (Artiodactyla)

a Morphogenesis during somatic embryogenesis. Obelia geniculata, O. flexuosa, O. Iovenii, Coryne Iovenii (Hydrozoa)


a Analyse factorielle appliquée à l’étude de la morphogenèse. Myzus persicae (Aphididae, Heteroptera)
b Analyse multivariée

POPOP, V. V. Dr.biol.sci., Prof. ~ Chair of Embryol., Biol. Fac., State Univ of Moscow, Lenin Hills, MOSCOW 117234, 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)

PORCELLI, Miss F. Dr. ~ Inst. of Histol. and Embryol., Univ. of Pavia, Piazza Botta 10, 27100 PAVIA, Italy

PORTMANN, A. Dr.Phil., Prof. (Emer.) ~ Zool. Anstalt der Univ., Rheinsprung 9, 4051 BASEL, Switzerland

POSWOVEC, Mrs. I. M.D., D.Sc., Prof. ~ Inst. of Histol. and Embryol., Fac. of Med., 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

PORMISIL, M. ~ Dept. of Anat., Freieu Univ., Kön.-Luisestr. 15, 1 BERLIN 33, B.R.D. (Germany)
a The pattern and biometrics of malformations. Mus musculus, Rattus spec. (Rodentia)

POHRHADI, R. M.D. ~ Lab. d'Histol-Embryol., Fac. de Méd., Bd. Winston Churchill, B.P. 38, 63 CLERMONT-FERRAND, France

POURBEAU (SCHNEIDER), Mrs. N. M. Drès Sci. ~ Lab. d'Embryol. Expér. du Coll. de France et du C.N.R.S., 11 Place M. Berthelot, 75 PARIS Ve, France ISDB

a Testicular interstitial cell tumour (ICT) grafted under the kidney capsule: 1. Development in this heavily vascularized region; 2. Attempt to masculinize the foetus by grafting ICT during pregnancy; 3. Injection of ICT-suspension into the tail vein of castrated males. Rattus norvegicus (Rodentia)
b Differentiation of Friend leukemia cells in the presence of DMSO (dimethylsulfoxide) in tissue culture. Mus musculus (Rodentia)


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 cytogeneration of tooth buds. Rattus norvegicus, Mus musculus (Rodentia)

POUWELS, Miss E. Biol.drs. ~ Dept. of Anat. and Embryol., Univ. of Nijmegen, Geert Grooteplein N. 21, NIJMEGEN, Netherlands

a Development of the cerebellum (light microscopy, electron microscopy). Salmo irideus (Teleostei)

PRAT, Miss M. Ph.D. ~ Cell and Molec. Biol. Lab., Dept. of Human Anat., Univ. of Torino, Corso M.d’Azeigio 52, 10126 TORINO, Italy

a Cell membrane differentiation; immunochemistry of surface macromolecules. Mus muscles (Rodentia)

PRATT, C. W. McE. M.D. ~ Anat. School, Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3DY, England

a Development of skeletal tissue. (Mammalia)
Pattern of sDNA and sRNA during the cell cycle, and during and after conjugation. Chilodonella cucullulus (Ciliata)

The mechanism of differentiation of the macronucleus starting from syncaryon. Chilodonella cucullulus (Ciliata)

RAECKALLIO, J. M.D., Prof. – Dept. of Forensic Med., Univ. of Turku, Kiiinamyllynkatu 10, 20520 TURKU 52, Finland
a Biochemical characterization of enzymes appearing in early wound healing. Rattus spec., Cavia spec. (Rodentia) (with P. L. MÄKENEN)
b Histochemistry of bone regeneration (fracture healing). Rattus spec., Cavia spec. (Rodentia) (with P. L. MÄKENEN)
c Enzyme histochemistry of skin transplants (allografts and homografts). Rattus spec., Cavia spec. (Rodentia) (with P. L. MÄKENEN)
d Biochemistry of vascular response in experimental wound healing. Rattus spec., Cavia spec. (Rodentia) (with P. L. MÄKENEN)
e Acceleration of wound healing with zinc sulphate. Rattus spec. (Rodentia) (with P. L. MÄKENEN)

RAFFIN, J. P. Dr. – Lab. d’Anat. Comp., Univ. Paris VII, 2 Place Jussieu, 75005 PARIS, France
a Development of the optic system. Gallus domesticus (Aves) (with P. CLAIRAMBAULT)

a Embryogenesis. Testudo graeca (Chelonia)

RAJTOVA, Miss V. M.V.Dr. – Anat. Inst., Vet.-Med. Fak., Komenského 71, KOŠICE, Czechoslovakia
a Morphogenesis of the chondrocranium. Ovis aries, Capra hircus (Artiodactyla)
b Skeletal development. Same species as a
c The transformation of Meckel’s cartilage. Ovis aries, Capra hircus (Artiodactyla); (Rodentia)

RAMSAW (KUNZ), Mrs. Y. W. Dr.phil. – Zool. Dept., Univ. Coll., Belfield, Stillorgan Rd., DUBLIN 4, Ireland
a Ultrastructure and histochemistry of developing retinal photoreceptors. Lebistes reticulatus (Teleostei)
b Haemopoiesis in the embryo. (Teleostei)

RANZI, S. Ph.D., Prof. – Lab. di Zool., Univ. di Milano, Via Celoria 10, 20133 MILANO, Italy

RANZILO, F. Dr., Prof. – Ist. di Zool., Univ. di Catania, Via Androne 81, 95124 CATANIA, Italy

RAPOLA, M. H. J. M.D. – Children’s Hosp., Univ. of Helsinki, I Stenbäck St., 00290 HELSINKI 29, Finland

RATER, Homo sapiens (Primates)

RAUNCH, L. Ph.D., M.D., Prof. – Ist. di Anat. Comp., Univ. di Ferrara, Via Scienze 17, 44100 FERRARA, Italy

Changes of hemoglobin and dehydrogenases during embryonic and postembryonic development (starch gel electrophoresis). Mugil spec., Chrysophrys spec., Labrax spec., Gasterosteus spec. (Teleostei)
b Electron microscopy of oogenesis. Aphanius fasciatus, Mugil spec. (Teleostei)

a Developmental genetics. Drosophila virilis (Diptera)

RAVEN, Chr. P. Ph.D., Prof. – Zool. Lab., State Univ. of Utrecht, Transitorium III, Universiteitscentrum ‘De Uithof’, UTRECHT, Netherlands

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)
a Computer simulation of embryonic development. (with J. J. BEZEM)

RAYNAUD, A. Dr.és Sci. – Serv. d’Embryol. Expér., Inst. Pasteur, 20 rue des Moulins, 95110 SANNONIS, France

Normal development of the genital tract in the embryo. Anguis fragilis, Lacerta viridis (Lacertilia); Tropidonotus tessellata, Vipera aspis (Ophidia)

Limb bud development (Lacerta viridis, L. scuca) and factors involved in the arrest of limb bud development. Anguis fragilis (Lacertilia); Python reticulatus (Ophidia)

Relationships between somites and the prospective limb territory, ablation and grafts of somites on explants of limb bud. Lacerta viridis, Anguis fragilis (Lacertilia); Cistudo europaea (Chelonia)

development of the phallicus. Lacerta viridis, Anguis fragilis (Lacertilia); Tropidonotus tessellata (Ophidia); (Chelonia)

c Capacities of differentiation in vitro of genital tract primordia. Same species as a

effects of sexual hormones on sexual differentiation of the embryo. Same species as a

g RNA and DNA synthesis of epidermal and mesodermal cells in the limb bud. Anguis fragilis, Lacerta viridis (Lacertilia) (with J. VASSE)

h 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-SERVINIER), Mrs. J. Dr.és Sci. – Serv. d’Embryol. Expér., Inst. Pasteur, 20 rue des Moulins, 95110 SANNONIS, France

Histochemistry of the functional differentiation of the endocrine glands in the embryo. Anguis fragilis (Lacertilia)
b 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)

REBER (PELLE), Mrs. A. – Lab. de Physiol. Anim., Univ. de Rouen, 10 Bd. de Broglie, 76130 MONT-SAINT-AIGNAN, France

a Raisons de la répartition des embryons le long des cornes utérines au 7e jour de gestation (ligature, transfert d’embryons). Rattus spec. (Rodentia)

REES (WALLEY), Mrs. L. J. Ph.D. – Marine Sci. Labs., Univ. Coll. of N. Wales, MENAI BRIDGE, Anglesey LL59 SEY, Wales, U.K.

da Developmental biology. (Cirripedia, Crustacea)

REGARD, Miss E. – Lab. de Biol.-Vertébr., Centre d’Orsay, Univ. de Paris XI, Bât. 441, 91405 ORSAY, France

a Etude biochimique et ultrastructurale de la glande thyroïde larvaire. Xenopus laevis (Anura), Ambystoma mexicanum (Urodela)
b Apparition et fonction de la peroxydase dans la glande thyroïde larvaire (histochimie ultrastructurale, biochimie). Organismes voir a

REMBOLD, H. Dr rer. nat., Prof. – Max-Planck-Inst. für Biochem., 8033 MARTINSRIED b. München, B.R.D. (Germany)
a Isolation of the determining substance responsible for queen bee establishment from royal jelly and from pupae and adults. Bombymor, 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)

RESSOUCHES (SELMÉS), Mrs. A. P. Dr. Biol. anim. – Lab. de Zool. Expér., Univ. de Bordeaux I, Av. des Facultés, 33405 TALENCE, France

a Développement embryonnaire. Issodes spec. (Coleoptera)

REVERBERI, G. D. Sci., Prof. – Zool. Inst., Univ. of Palermo, Via Archirafi 18, 90123 PALERMO, Italy

a The role of some enzymes in embryonic development (marine Invertebrata)
b Ultrastructure of the developing egg. (Amnedida; Mollusca; Ascidiacea)

RÉVESZ-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)

REYNAUD, G. R. Dr. spéc. – Lab. de Morphogénét. Anim., Univ. de Provence – Centre St. Charles, Place Victor Hugo, 13331 MARSEILLE-Cedex 3, France

a Etude des relations entre soma et gérmen. (Aves)

REYSS-BRION (DUCREAU), Mrs. M. Dr.ès Sci. – Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49 bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France

a Influence des rayons X sur le développement embryonnaire. Pleurodeles waltlii (Urodela), Gallus spec. (Aves)
b Influence des rayons X sur le pouvoir inducteur de la gastrula. Pleurodeles waltlii (Urodela)
c Effet des rayons X sur le développement de la peau embryonnaire. Gallus domesticus (Aves)


a Mechanisms of repair and physiological regeneration of the brain. Mus musculus, Rattus norvegicus (Rodentia)

RIBBERT, D. Dr. rer. nat. – Zool. Inst. der Univ., Badeestr. 9, 44 MÜNSTER/Westf., B.R.D. (Germany)

a Karyology and RNA spectra in egg follicle development (radio-isotopes, electrophoresis). Calliphora erythrocephala (Diptera)
b Chromosome cytology of germ line cells (polytene chromosomes). Same species as a


a Karyology and RNA spectra in egg follicle development (radio-isotopes, electrophoresis). Calliphora erythrocephala (Diptera)
b Chromosome cytology of germ line cells (polytene chromosomes). Same species as a


a Mode of action of ecdysone: RNA synthesis by isolated larval epidermis nuclei in different developmental stages and under the influence of ecdysone and ecdysone metabolites. Calliphora erythrocephala (Diptera)

RICHTER, R. H. Ph.D. – Eigerstr. 70, 3000 BERN, Switzerland

RIEB, J. P. – Musée Zool. de l’Univ. et de la Ville, 29 Bd. de la Victoire, 67000 STRASBOURG, France

a Premiers stades du développement embryonnaire; appareil circulatoire primitif (microcinématographie à l’accéléré). Brachydanio rerio (Teleostei)

RINALDI, Miss A. M. Dr. Biol. – Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

a Rate of protein synthesis in oocytes. Paracentrotus lividus (Echinidea)
b Giant RNA in polyribosomes of embryos. Same species as a

RINALDI, Miss L. Dr. Biol. – Ist. di Zool., Univ. di Parma, Via Università 12, 43100 PARMA, Italy

ISDB
RINAUDO, M. T. Prof. – Inst. of Biochem., Univ. of Turin, Via Michelangelo 27, 10126 TORINO, Italy

a Protocollagen proline hydroxylase in the embryonic eye, cartilage, and skin. Gallus domesticus (Aves)
b Lactate levels and lactate dehydrogenase in embryonic heart. Gallus domesticus (Aves)

RIPOLL, P. M.Sc. – Sect. Developm. Genet., Inst. of Genet. and Anthropol., Velazquez 144, MADRID 6, Spain

a Clonal behaviour of zygotic lethals in imaginal discs. Drosophila melanogaster (Diptera)
RISNES, S. – Anat. Inst., Univ. of Bergen, Årstadvei 19, 5000 BERGEN, Norway

a Odontogenesis. (Elasmobranchii)

ROBADEY (RIBAS), Mrs. M. – Dépt. d’Embryol. et Tératol. Exp., Inst. de Zool., Fac. des Sci., Univ. de Fribourg, 1700 Fribourg, Switzerland

a Morphogenèse du crâne et induction céphalique. Gallus gallus (Aves)
b Associations interspécifiques entre divers organes céphaliques. Gallus gallus, Coturnix spec. (Aves)

ROBECCHI GIACOBBI, M. G. M. D. – Dept. of Human Anat., Univ. of Torino, Corso M.D’Aze-glio 52, 10126 TORINO, Italy

a Development of ‘electric type’ synapses in nucleus tangentialis. Gallus domesticus (Aves)
ROBERT, L. M.D. – Lab. de Biochim. du Tissu Conjonctif, Univ. de Paris-Vel-de-Marne, 6 rue du Gal-Sarrail, 94 CRÉTEIL, France

a Differentiation of mesenchymal tissues, cornea, and aorta; regulation of the biosynthesis of intercellular macromolecules: collagen, elastin, proteoglycan, and structural glycoproteins. (Demospongiae, Porifera), Gallus domesticus (Aves), Mus musculus, Rattus spec., Sūs domesticus, Bos taurus, Homo sapiens (Mammalia)

a Molecular mechanism of cell free recognition (transplantation biology); role of structural glycoproteins, Mus musculus (Rodentia)

ROBERT, M. Dipl.Natw. – Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, B.R.D. (Germany)
a Regulation of gene activity and histone cytchemistry in giant chromosomes. Chironomus thummi, Ch. tentans (Diptera)

ROBERTSON, B. M.D. – Dept. of Pediat. Pathol., Karolinska sjukhuset, 104 01 STOCKHOLM 60, Sweden

a Development of imaginal buds. Drosophila spec. (Diptera) (with C. H. WADDINGTON)
b Electron microscopy of the nuclear organizer in the pupal bristle cells. Drosophila melanogaster (Diptera)

RODA, A. Prof. – Inst. F. Olóriz, Fac. of Med., Univ. of Granada, GRANADA, Spain

a Ultrastructural development of cerebellum. Gallus domesticus (Aves)
b First ultrastructural changes in the irradiated brain. Gallus domesticus (Aves)
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)

ROEST (WAGENAAR), Mrs. J. A. – 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. LOS)
b Cell interactions in the embryonic heart. Gallus domesticus (Aves) (with J. A. LOS)

ROGUEDA (VIGNAU), Mrs. J. Dr.Biol.anim. – Lab. de Zool. Expér., Univ. de Bordeaux 1, Av. des Facultés, 33405 TALENCE, France

a Expériences sur la morphogenèse embryonnaire de la tête. Carausius spec. (Phasmida)

ROGLJUSKA, 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

ROHENDORF, Mrs. E. Dr., CSc. – Dept. of Physiol., Inst. of Entomol., Czech. Acad. of Sci., Na Folimance 3, 12000 PRAHA 2, Czechoslovakia

a Endocrinology, reproduction, and embryology. Thermobia domestica (Thysanura)
b Endocrinology and reproduction. Leptotarsata descemineata (Coleoptera)

ROKTY, R. MUDr., CSc. – Inst. of Pathophysiol., Charles Univ., Lidická 1, 306 05 PLZEŇ, Czechoslovakia

a Interhemispherical connections between subcortical auditory centres, especially between medial geniculate bodies in development. Felis domestica (Carnívora), 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)

ROMANOVA, Mrs. L. K. Dr.med.sci. – Inst. of Human Morphol., Acad. of Med. Sci. of the USSR, Shchepkin St. 61/2, MOSCOW 125110, U.S.S.R.
a The restoration of lungs and liver. Rattus norvegicus, Mus musculus (Rodentia)
ROMANOVSKÝ, A. RNDr., D.Sc., Prof. – Dept. of Exp. Zool., Charles Univ., Viničná 7, 12444
Ontogenies, Heterogeneous Multiple Mutations


a Involvement of phytochrome and other photoreceptors in photomorphogenesis, studied in heterotrophic sterile culture of whole plants or parts of plants under different illumination. Lenma minor (Lemnaceae)

RÖMERT, P. Prof. – Anat. Dept.C, Univ. of Copenhagen, 1 Universit.-tsparken, 2100 COPEN-HAGEN Ø, Denmark

a Development of the ultimobranchial body. Mus musculus (Rodentia)

b Cell death during development. Mus musculus, Rattus spec. (Rodentia)

RONCALLI, Miss L. M.D. – Inst. of Human Anat., Fac. of Med., Univ. of Bari, Policlinico, 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)

c Modifications of vascular patterns following heterotopical grafts of limb bud apical ridge. Gallus domesticus (Aves)

ROOY, R. E. de Dr. – Lab. of Med. Chem., State Univ., Wassenaarseweg 62, LEIDEN, Netherlands

a Changes in amount and activity of the enzymes causing the synthesis and breakdown of brain lipids. Rattus spec. (Rodentia), Bos taurus (Artiodactyla), Homo sapiens (Primates)

ROSSI, A. Dr. – Ist. di Anat. Comp. ‘Battisti Grassi’, Univ. di Roma, Via A. Borelli 50, 00161 ROMA, Italy

a Development of the saccus vasculosus. Anguilla anguilla (Teleostei)

ROSTAND, J. – 29 rue Pradier, 92 VILLE D’AVRAY, France

b Parthenogenèse et gynogenèse; régulation chromosomique par le froid. (Amphibia)

c Mutations (polydactylie, ectrodactylie, etc.) and anomalies provoquées par le milieu extérieur (principalement ‘Anomalie P’), Rana esculenta et autres spp. (Amphibia)

c Action protectrice de la glycérine à l’égard de la congélation des cellules spermatiques. (Amphibia)


a Heterogeneous inducers on embryonic ectoderm. Gallus domesticus (Aves)

b Early embryonic development including immunology. Same species as a

ROTT, Mrs. N. N. Cand.biol.sci. – Inst. of Developm. Biol., Acad. of Sci. of the USSR, Vavilov St. 26, MOSCOW 117334, U.S.S.R.

a Changes of mitotic cycle in early embryogenesis as related to morphogenetic nuclear function and synthesis of RNA. Miscigurnus fossilis, Salmo gairdneri, Cyprinus carpio (Teleostei), Ambystoma mexicanum (Urodela)

ROUSSEL, C. Dr.en Méd. – Lab. d’Histol.-Embryol.A, Fac. de Méd., 45 rue des Sts.Pères, 75 PARIS VIe, France

a Mode d’action de certaines substances tératogènes (Triton WR 1339). (Mammalia)

b ROUSSEV, G. K. Dr., Prof. – Med. Res. Inst., Ovtcha Koupel, SOFIA 18, Bulgaria

a Ontogenèses, nouvelles embryogenèses. Triturus cristatus (Urodela)

b ROUX, Ch. Dr.en Méd., Prof. – Lab. d’Embryol., CHU Saint-Antoine, 27 rue Chaligny, 75 PARIS XIIe, France

a Teratogènes action of inhibitors of cholesterol synthesis. Rattus spec., Mesocricetus auratus, Mus musculus (Rodentia), Oryctolagus cuniculus (Lagomorpha)

b ROUY (GRABIF), Mrs. S. Dr.spec. – Lab. d’Histol. et d’Embryol., Univ. de Montpellier, 2 rue Ecole de Médecine, 34000 MONTPELLIER, France

a Multiple testis. Euprotocasp asper (Urodela)

b Anomalies in spermatozoa (ultrastructure). Homo sapiens (Primates)


b Ovum transplantation and artificial insemination. Oryctolagus cuniculus, (Lagomorpha), Bos taurus, Ovis aries, Sus domesticus (Artiodactyla) Homo sapiens (Primates)

b RUANO GIL, D. Dr., Prof. – Dept. of Anat., Univ. of Barcelona, C/. Casanova 143, BARCELONA 11, Spain

a Development of neural retina and lens. Gallus domesticus (Aves)

b RUCH, J. V. Dr.méd., Dr.és Sci., Prof. – Inst. d’Embryol., Univ. de Strasbourg, 11 rue Humann, 67085 STRASBOURG, France

b Epithelial-mesenchymal interactions, mitosis, and differentiation in teeth. Mus musculus (Rodentia)

b Action of dexamethasone in vivo and in vitro. Oryctolagus cuniculus (Lagomorpha); Mus musculus (Rodentia)


b RUÉ, G. – Lab. de Biol. Cell., Fac. des Sci., B.P. 347, 51 REIMS, France

b RUSSO-CIALA, S. Prof. – Inst. of Histol. and Embryol., Fac. of Sci., Univ. of Camerino, 62032 CAMERINO, Italy

b Cytochemistry and autoradiography of mesonephros regression. (Aves; Mammalia)

b Mechanism of metamorphosis: histolysis, especially lysosomal enzymes. Musca domestica
c Cytological aspects of gene amplification in oogenesis. Dytiscus marginalis and other spec. (Coleoptera)
d Cytchemistry and autoradiography of oogenesis, especially nucleic acid metabolism in nurse cells. (Diptera, Coleoptera)

a Cytological characteristic of the regenerating liver. Rattus norvegicus, Mus musculus, Cavia porcellus and other spp. (Rodentia)

RYCZKOWSKI, M. Doc., Dr. - Lab. of Plant Physiol. Jagiellonian Univ., Grodzka 53, KRAKÓW, Poland
a Changes of the oxygen tension (pO₂) in the ovule during inhibition and exponential phase of the embryo growth. Haemanthus katharinae, Clivia miniata (Angiospermae)
b Free amino acids in the environment of the embryo. Haemanthus katharinae, Clivia miniata, Aesculus hippocastanum, A. hybrida (Angiospermae)
c Photosynthesis in the developing embryo. Haemanthus katharinae (Angiospermae)
d Respiration rate of the developing ovule and embryo. Same species as a
e Osmotic gradient in the developing ovule. (Gymnospermae)

RYFFEL, G. Dr.phil. - Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlisstr. 8, 3012 BERN, Switzerland
a Thyroxine and RNA synthesis in tadpole tissues. Xenopus laevis (Anura) (with R. WEBER, U. SCHIBLER and O. HAGENBÜCHLE)
b Processing of RNA

RYLAND, J. S. Ph.D. - Dept. of Zool., Univ. Coll. of Swansea, Singleton Park, SWANSEA, Glamorgan, Wales, U.K.

RZEHAJK, K. Ph.D. - Dept. of Biol. and Embryol., Acad. of Med., ul. Kopernika 7, KRAKÓW, Poland

SAAG, P. T. van der M.Sc. - Hubrecht Lab. (Intern. Embryol. Inst.), Uppsalalaan 1, Universiteitsscentrum "De Uithof", UTRECHT, Netherlands
a Biosynthesis of soluble proteins in early development (isoelectric focusing, autoradiography). (Amphibia) (with S. K. BRAHMA)
b The role of cell membrane properties in the regulation of the cell cycle. Xenopus laevis (Anura) (with S. W. de LAAT)

SABBADIN, A. Dr., Prof. - Ist. di Biol. Anim., Univ. di Padova, Via Loredan 10, 35100 PADOVA, Italy
a Determination of polarity and bilateral asymmetry of the zoids. Botryllus schlosseri (Asciacea)

SABELLI, B. Dr. - Inst. of Zool., Univ. of Bologna, Via S.Giacomo 9, 40126 BOLOGNA, Italy
a Oogenesis in parthenogenetic and amphigonic eggs. Daphnia spec. (Cladocera, Crustacea)
b Reproduction and origin of germ cells. Mercierella enigmatica (Serpulidae, Polychaeta)

SACARRÃO, G. da FONSECA Dr.Sc., Prof. - Fac. de Ciências, Museu Bocage, Ruada Escola Politécnica, 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)

Regeneration of myocardium (biochemistry). Oryctolagus cuniculus (Lagomorpha)

ŠAFANDA, J. ing.chem. - Inst. of Pathophysiol., Charles Univ., Lidická, 306 05 PLZEN, Czechoslovakia
a Characteristics of the transport of 4-aminobutyric acid in developing brain. Rattus spec. (Rodentia)

a Effects of pituitary gonadotropins on the various phases of oogenesis, especially the correlations between meiosis and vitellogenesis. Salmo salar, Oncorhynchus gorbusha. Coregonus lavaretus pidschan (Clupeiformes), Acerina cernua (Perciformes, Teleostei)

SALÀ, M. Dr. Biol. Sci., Prof. - Ist. di Biol. Anim., Univ. di Padova, Via Loredan 10, 35100 PADOVA, Italy
a Later differentiation of embryonic mesenchyme cells in culture medium. Botryllus schlosseri (Asciacea)
b Migration of neural crest cells studied by means of localized radioactive marks. Triturus cristatus (Urodela)
c Embryonic and adult hemoglobin. (Anura)

a Role of chemical intercellular interactions in the 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)

SALUDA, Miss J. Dr. Sc. - Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France
a Formation expérimentale d’embryomes homoplastiques et hétéroplastiques. Gallus gallus (Aves), Rattus rattus (Rodentia)
b Influence réciproque des cellules cancéreuses et embryonnaires réunies sur un même hôte. Rattus rattus, Mus musculus (Rodentia)

SALVATORELLI, G. Ph.D. - Ist. di Anat. Comp., Univ. di Ferrara, Via Scienze 17, 44100
a Factors in foetal erythropoiesis. Gallus domesticus (Aves)
b Erythropoiesis and leucopoiesis during metamorphosis. Bufo bufo (Anura)
c Embryonic and foetal erythropoiesis. Cavia porcellus (Rodentia)
SALZGEBER, Miss B. Dr.és Sci. – Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 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’ypérite azotoë (chlorethylamine), 2) par la thalidomide (ptalimidoglutarimide). Same species as a
c Recherches sur la genèse des malformations de membres, Gallus domesticus (Aves)
SANDER, K. Ph.D., Prof. – Biol. Inst. I (Zool.) der Univ., Katharinenstr. 20, 78 FREIBURG, B.R.D. (Germany)
a Early stages of embryogenesis: epigenetics of segment pattern, blastokinesis. Eucelis plebejus (Cicadina, Homoptera)
b Developmental physiology of embryonic mycetomes. Eucelis plebejus and other spp. (Cicadina, Homoptera)
a Experimental teratology and tératological screening. (Rodentia)
b Development of embryonic axial organs (somitogenesis). 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
d Development of homoeotic mutations. Same species as a
e Embryonic temperature sensitive lethals. Same species as a
SANJUAN GINEZÉ, J. – Dept. of Anat., Univ. of Barcelona, C/.Casanova 143, BARCELONA 11, Spain
a Embryonic development of the limbs. Gallus domesticus (Aves)
SANTAMARIA, P. M.Sc. – Sect. Developm. Genet., Inst. of Genet. and Anthropol., Velazquez 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)
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 fusarparagine during rejection of embryonic and larval transplants. Rana esculenta (Anura), Triturus taeniatus (Urodela)
SANYAL, S. Ph.D. – Dept. of Anat., Erasmus Univ., Postbox 1738, ROTTERDAM, Netherlands
a Phenogenesis of the retinal degeneration gene (rd) (enzyme histochemistry, electrophoreses, isozymes, protein separation, light and electron microscopy). Mus musculus (Rodentia)
a Regional differences in protein composition in early development (SDS polyacrylamide gel electrophoresis). Acheta domestica (Orthoptera)
b Activities of isolated RNA polymerases in relation to differential transcription in the developmental cycle. Physarum polycephalum (Eumycetozoa)
SAUNDERS, D. S. Ph.D. – Dept. of Zool., Univ. of Edinburgh, West Mains Rd., EDINBURGH EH9 3JT, Scotland, U.K.
a Photoperiodic control of development and diapause. Nasonia vitripennis (Hymenoptera), Sarcoptaga argyrosta (Diptera)
SAUSSEY, M. Dr.és Sci. – Lab. d’Embryol., Unité de Sci., Univ. de Caen, 14032 CAEN, France
a Regeneration, sexuality and diapause. Alolobophora icterica, A. spp. (Oligochaeta)
SAUZIN, Miss M. J. – Lab. de Biol. Anim., Fac. des Sci., Univ. Paris Sud, 91405 ORSAY, France
a Ultrastructure du blastème de régénération: la différenciation des néoblastes. (Planariidae, Tubellaria)
SAXÁN, Miss I. P. M. D.sc. – Lab. of Exp. Embryol., Ill. Dept. of Pathol., Univ. of Helsinki, Haartmaninkatu 3, 00290 HELSINKI 29, Finland
a Drug-induced teratogenesis in vitro. Mus musculus (Rodentia) (with L. O. SAXÁN)
b Epidemiology of cleft palate. Homo sapiens (Primates)
SAXÁN, L. O. M.D., Phili., Prof. – Lab. of Exp. Embryol., III.Dpt. of Pathol., Univ. of Helsinki, Haartmaninkatu 3, 00290 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. WARTIOVAARA and E. LEHTONEN)
c Drug-induced teratogenesis in vitro. Mus musculus (Rodentia) (with I. SAXÁN)
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. JÄÄSKELÄINEN)
GRENoble, France

a Experiments on the differentiation of the cutaneous sensory corpuscles. Gallus domesticus, Anas boschas (Aves)
b Development of cutaneous nerve supply and nerve compensation; neurotaxis. Gallus domesticus (Aves)

SAZHINA, Miss M. V. Cand.biol. – Phenogenet. Lab., Inst. of Gen. Genet., Acad. of Sci. of the USSR, Profsoyuznaya St.7 (I), MOSCOW 117312, U.S.S.R.
a Developmental study of mutant gene effects on cell proliferation. Mus musculus (Rodentia)

SBRENNAP, G. Dr.Biol. – Ist. di Zool., Univ. di Ferrara, Via Previati 24, 44100 FERRARA, Italy
ultrastructure of embryonic epidermis and epidermis differentiation during molting cycle. Schistocerca gregaria (Orthoptera)

SCHARLOO, 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
a Gene physiology, Y chromosome. Drosophila spp. (Diptera)
b Genetic regulation of differentiation; male germ line cells. Drosophila hydei, D. neoelydei (Diptera)

SCHARLOO, W. Ph.D., Prof. – Genet. Inst., Univ. of Utrecht, Opaalweg 20, UTRECHT, 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.es Sci. – Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France
a ISDB Ultrastructure of the lignified interstitielle dans les gonades. Gallus domesticus, Coturnix c. japonica (Aves)
b Biosynthesis in vitro of stéroïdes sexuels par l’ovaire et le testicule avant et après écllosion; effets des hormones gonadotropes. Coturnix c. japonica (Aves)

a Changes in the developmental-physiological competence of fat body nuclei during postembryonic development; influence of edcysone on DNA, RNA, and chromatin patterns, and on the activity of RNA-polymerases. Calliphora erythrocephala (Diptera)

SCHERT, 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. Exp. sur le Cancer, rue Bugnon 21, 1011 LAUSANNE, Switzerland
a ISDB SCHIBLER, U. lic.phil.nat. – Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlist.8, 3012 BERN, Switzerland
b Thryoxine and RNA synthesis in tadpole tissues. Xenopus laevis (Anura) (with R. WEBER, G. RYFFEL and O. HAGENBÜCHLE)
c Synthesis and maturation of (poly A)-rich RNA

SCHIEBLO, Th. H. Dr.med., Prof. – Dept. of Anat., Univ. of Würzburg, Koellikerstr. 6, 87 WÜRZBURG, B.R.D. (Germany)
a Chemo-differentiation of different parts of the brain (e.g. nucleus ruber) by enzyme-histochemical and experimental methods. Rattus norvegicus (Rodentia)
b Development of the terminal vascular bed of the heart. Rattus norvegicus (Rodentia)
c Electron microscopy of the full-term placenta. Homo sapiens (Primates)

SCHILH, J. Lic.es Sci. – Lab. de Zool., Univ. de Nancy I, Case Off. 140, 54037 NANCY Cedex, France
a Rôle du système nerveux dans l’induction d’un pharynx. Dugesia lugubris (Turbellaria)
b Rôles respectifs du système nerveux et des territoires dans la régénération. Dugesia lugubris (Turbellaria)

SCHIMMEL-PENNIG, K. – Abt. Embryonalpharmakol., Pharmakol. Inst., Freie Univ., Thielallee 69, 1 BERLIN 33, 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

SCHLUTER, G. Dr.med. – Anat. Inst. der Univ., Abt. für Neuroanat., Nussallee 10, 53 BONN, B.R.D. (Germany)
a Ultrastructure and function of early placenta. Mus musculus (Rodentia)
b Teratological effects of experimental placental dysfunction. Mus musculus (Rodentia)

SCHMIALEK, P. Dr.med., Dipl.Chem. – Zentralinst. Biochem./Biophysik, Freie Univ. Berlin, Arnimallee 22, 1 BERLIN 33, W.Germany
a Differentiation potentialities of cells. (Hydrozoa)
Tissue stability and metaplasia in the development of medusae buds. Podocoryne carnea (Hydrozoa)

Factors controlling regeneration in medusae. (Hydrozoa)


Embryology. Camelus bacterianus (Artiodactyla)

SCHMIDT, G. H. Dr.ren.nat. - Inst. für Angew. Zool., Univ.Würzburg, Röntgenring 10, 87 WURZBURG, B.R.D. (Germany)

a Postembryonic development of holometabolic forms, especially Formica polyctena, F. pratensis (Hymenoptera)

SCHNETTER, W. Dr.ren.nat. - Physiol. Lehrt., Zool. Inst. der Univ., Berlinerst. 15, 69 HEIDELBERG, B.R.D. (Germany)

b Early embryology. Leptinotarsa decemlineata (Coleoptera)

c Morphogenetic function of egg components; transplantation of nucleic and ooplasm. Same species as a

Synthesis of RNA and protein during early embryogenesis. Leptinotarsa spec. (Coleoptera), Calliphora spec. (Diptera), Pimpla spec. (Hymenoptera)

SCHOELLER (RACCAUD), Mrs. J., Drs. Sci., Prof. - Lab. de Physiol. des Insectes, Univ. Paris VI, 7 quai Saint Bernard, 75230 PARIS Cedex C5, France ISDB

a Experiments sur la céléphogenèse larvaire et imaginale. Calliphora spec. (Diptera)

b Etat de détermination des disques imaginaux. Calliphora erythrocephala (Diptera)

SCHOLL, A. Ph.D. - Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlislist.8, 3012 BERN, Switzerland

a Developmental genetics of isoenzymes. Chironomus spec. (Diptera), Xiphophorus spec. (Teleostei)


a Development. Limulus polyphemus (Xiphosura)

SCHÖNHERR, O. Th. Dr. - Lab. for Cell Biol. and Histol., State Univ., Rijnsburgerweg 10, LEIDEN, Netherlands

a Biosynthesis of androgens in foetal testes in vitro. Rattus spec., Cavia porcellus (Rodentia)

SCHOUTEN, A. A. Med.drs. - Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands

a Early differentiation of the endoderm. Mus musculus (Rodentia)

SCHOUTEN, S. C. M. Drs. - Genet. Inst., Univ. of Utrecht, Opaalweg 20, UTRECHT, Netherlands

b Development of quantitative characters. Drosophila melanogaster (Diptera)

SCHOWING, J. Dr.ès Sci., Prof. - Dépt. d’Embryol. et Tératol. Exp., Inst. de Zool., Fac. des Sci., Univ. de Fribourg, 1700 FRIBOURG, Switzerland

a Morphogenèse du crâne et induction céréphalique. Gallus gallus (Aves)

b Action des alcaloïdes de liliacées sur la morphogenèse de la tête. Gallus gallus (Aves), Mus musculus (Rodentia)

c Lésions du système nerveux embryonnaire par substances toxiques. Gallus gallus (Aves)

SCHREIBER, B. Prof. - Ist. di Zool., Univ. di Parma, Via Università 12, 43100 PARMA, Italy ISDB

SCHULTHEISS, H. Dr. - Zool. Inst.II, Univ. (T.H.) Kaiserstr.12, Postfach 6380, 75 KARLSRUHE 1, B.R.D. (Germany)

a Regulation of nitrogen metabolism by hormones during metamorphosis. Ambystoma spec. (Urodela), Xenopus laevis (Amura)

b Regulation of the skin diffusional permeability to water by hormones during metamorphosis. Same species as a

SCHUMACHER, G. H. Dr.sc.med., Dr.med.dent., Prof. - Anat. Inst., Med. Bereich, Univ. Rostock, Gertrudenstr. 9, 25 ROSTOCK 1, D.D.R. (Germany)

b Biometric Organous Untersuchungen und Osteogenese. Mesocricetus auratus (Rodentia)

c Craniogeheure und Osteogenese. Larus ridibundus, Gallus domesticus (Aves)

c Experimentelle Untersuchungen zur Frage von Organ- und Schädelveränderungen auf Grund statistischer Veränderungen in der Postnatalperiode (Amputation der Vorderextremitäten). Rattus norvegicus (Rodentia)

c Untersuchungen des postnatalen Schädel- und Organwachstums nach pränatalem Einfluß peristatischer Faktoren (Lärmeinwirkungen). Rattus norvegicus (Rodentia)

c Der Maxillo-Mandibuläre Apparat nach chirurgisch-experimentellen Eingriffen in der Postnatalperiode. Canis familiaris (Carnivora), Oryctolagus cuniculus (Lagomorpha)

SCHWARTZ, V. Dr.ren.nat., Prof. - Zool. Inst. der Univ., Hölderlinstr. 12, 74 TÜBINGEN, B.R.D. (Germany)

a DNA-content of the macronucleus and growth pattern in interphase shift with nuclear aging. Paramécium aurelia, P. bursaria (Ciliata)

SCHWEICHEL, J. U. Dr. - II. Anat. Inst. der Freien Univ. Berlin, Kön.-Luise-Str. 15, 1 Berlin 33, B.R.D. (Germany)

b 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-Instit. für Zellbiol., Anton-Dohrn-Weg, Postfach 1009, 294 WILHELMSHAVEN, B.R.D. (Germany)

a Biochemical aspects of nucleo-cytoplasmic interrelationships. Acetabularia spec. (Chlorophyceae)

b Autonomy of chloroplasts. (Algae)

c RNA synthesis in anucleate cells. (Algae)
d Cooperation between different subcellular components in morphogenesis. (Algae)

a Molecular biology and genetics of the Y-chromosome. Drosophila spp. (Diptera)


SCONZO, Miss G. – Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy
a RNA synthesis in early development. Paracentrotus lividus (Echinoidea)

b Giant RNA in the cytoplasm of embryos. Same species as a

SCRIBA, M. E. L. Ph.D., Prof. – Inst. für Zool., Rhein.-Westf.-Techn. Hochschule, Birkenweg 16, 51 AACHEN, B.R.D. (Germany)
a Developmental abnormalities caused by lethal factors. Drosophila melanogaster (Diptera)

SEĎAČEK, J. M.D., Ph.D. – Res. Lab. of Psychiat., Charles Univ., Albertov 5, 12800 PRAHA 2, Czechoslovakia
a Development of spontaneous and evoked passive activity of the central nervous system in the prenatal period. (Aves; Mammalia)
b Embryonic brain development: tissue compartmentation; cerebrospinal fluid; membrane ATPase system. (Aves; Mammalia)

SEHNAI, F. RNDr., CSc. – Dept. of Physiol., Inst. of Entomol., Czech. Acad. of Sci., Na Folimance 5, 12000 PRAHA 2, Czechoslovakia
a Comparative study of periods of sensitivity to hormonal analogues during gametogenesis and embryogenesis. Galleria mellonella, Celerio euphorbiae, Mamestra brassicae, Spodoptera litoralis (Lepidoptera), Leptinotarsa decemlineata, Hyllobius abietis, Coccinella septempunctata (Coleoptera), Syrphus corolla, Ceratitis capitata (Diptera)
b Hormonal control of metamorphosis – action of hormones on the cell cycle in target tissues, relationship between the action of juvenile hormone and edeysone and nucleic acid synthesis. Galleria mellonella (Lepidoptera), Tenebrio molitor (Coleoptera)

SEICHERT, V. MUDr. – Dept. of Anat., Charles Univ., U nemocnice 3, 12800 PRAHA 2, Czechoslovakia
a Experimental analysis of limb formation. Gallus domesticus (Aves)

SEIDEL, F. Dr.phil., Prof. (Emer.) – Zool. Inst. der Univ., Ketzerbach 63, 355 MARBURG/Lahn, W.Germany

a Experimentelle Analyse der Differenzierung des Mesenchyms: Entstehung der Vascularisation. Gallus gallus (Aves)

SEITZ, K. A. Dr.rer.nat. – Zool. Inst. der Univ., Ketzerbach 63, 355 MARBURG/Lahn, W.Germany


a Protein and RNA synthesis during metamorphosis: correlation with hormonal (ecdyson) secretion. Calliphora erythrocephala (Diptera)
b Mode of action of juvenile hormone. Periplaneta americana (Blattariae), Calliphora erythrocephala (Diptera)
c Transcription of chromatin from epidermis by insect DNA-dependent RNA polymerases. Calliphora erythrocephala (Diptera)
d Translation of m-RNA in an homologous in vitro system from Calliphora erythrocephala (Diptera)

SELLER, Miss M. J. Ph.D. – Paediat. Research Unit, Guy’s Hosp. Med. School, LONDON SE1 9RT, England

a Haematology of congenital anaemia in the W-series mutants. Mus musculus (Rodentia)
b Experimental teratology. (Mammalia)
c Experimental production of chimaeras by tissue transplantation. Same species as a
d Transplantation of liver to ectopic sites in newborns and adults. Mus musculus, Rattus spp. (Rodentia)


a Ultrastructural and experimental study of cleavage. Triturus alpestris (Urodela), Xenopus laevis (Anura)
b Role of microfilaments in morphogenesis of embryos. Triturus alpestris (Urodela), Xenopus laevis (Anura) (with M. M. PERRY)
c Morphology and lobe formation during the growth of hemicyllia. Micrasterias spp. (Desmidiaeae)

SEMBRAT, K. Ph.D., D.Sc., Prof. – Inst. of Zool., Univ. of Wroclaw, ul. Sienkiewicza 21, 50-335 WROCLAW, Poland

a Cytology and cytochemistry of partial metamorphosis. Triturus spec. (Urodela)
b Cytology and cytochemistry of gametogenesis. Embletonia pallida (Opisthobranchia, Gastro- poda)

SENDEL, Ph. Dr.ès Sci., Prof. – Lab. de Zool., Dépt. de Biol., Univ. Sci. et Méd. de Grenoble, B.P. 53, 38041 GRENOBLE, France

a Mechanisms of feather pattern development. Gallus domesticus (Aves)
b Ultrastructure of skin development and feather keratins. Gallus domesticus (Aves)
c Role of axial organs in limb and skin development. Gallus domesticus, Coturnix c. japonica, Anas boschas (Aves)
d Programmed cell death and phagocytosis in foot morphogenesis. Gallus domesticus (Aves)
SEN, D. G. Ph.D. – Dept. of Comp. Neurol., Zool. Anstalt der Univ., Rheinsprung 9, 4051 BASEL, Switzerland

SENTEIN, P. Dr.en Méd., Dr.es Sci., Prof. – Lab. d’Histol. et d’Embryol., Univ. de Montpellier, 2 rue Ecole de Médecine, 34000 MONTPELLIER, France ISDB

a Action of various antimitotics and low temperature on cleavage (light and electron microscopy). Triticus helveticus, Pleurodeles waltl ii (Urodela)
b Spermatogenesis and spermatozoa; ultrastructure and action of drugs. Homo sapiens (Primates), (Mammalia)

ŠERMAN, D. D.Sc. – Inst. of Biol., Fac. of Med., Univ. of Zagreb, Šalata 3, P.O.Box 166, 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)


da Developmental biology. Rattus norvegicus, Rattus (Rodentia), Vulpes vulpes, Alopex lagopus (Carnivora)

SERRANTINO (DI DINO), Mrs. G. Dr.rer.nat. – Ist. di Anat. Umana Norm., Univ. di Catania, Via Biblioteca 4, 95124 CATANIA, Italy

a Development of the ciliary ganglion in normal and anencephalic embryos. Homo sapiens (Primates)

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 Microchemistry and histochemistry of carbohydrate and intermediate metabolism enzymes in fetal skin, especially developmental changes of enzyme activities. Homo sapiens (Primates)


a Chromatin proteins: changes during embryonic development (fractionation by DNase; changes in RNAse activity) and biogenesis (immunohistochemistry). (Echinodermata)

ŠEVČENKO, Mrs. G. MUDr. – Inst. of Embryol., Charles Univ., Albertov 4, 128 00 PRAHA 2, Czechoslovakia

a Development of taste buds (electron microscopy, cytochemistry). Homo sapiens (Primates)
b Development and cytodifferentiation of the oesophageal epithelium (light and electron microscopy). Rattus rattus (Rodentia)


da Developmental enzymology. Drosophila spec. (Diptera)

SEYDEWITZ, H. H. Dr. – Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, B.R.D. (Germany)
a Relations between electrolyte milieu and gene activities in giant chromosomes; electrophysiology, especially ion sensitive electrodaxes. Chironomus thummi (Diptera)


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)

SHORO, A. A. M.Phil. – Dept. of Anat., St. Thomas’s Hosp. Med. School, LONDON SE1 7EH, England

a Production of limb deformities and growth retardation in the fetus with neuromuscular blocking agents. Rattus norvegicus (Rodentia)

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

SIDOROVA, Mrs. V. F. Dr.biol.sci. – Inst. of Human Morphol., Acad. of Med. Sci. of the USSR, Shechepkin St. 61/2, MOSCOW 125110, 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)

SIEBERS, A. M. Drs. – Bot. Lab., State Univ., Nonnensteeg 3, LEIDEN, Netherlands

a Cytotogy and histochemistry of cambium precursors in the hypocotyl; nature and mechanism of action of cambium inducing substance. Ricinus communis (Euphorbiaceae)

SIETSA, J. H. Dr. – Lab. of Bot., State Univ., Kerklaan 30, P.O.Box 14, HAREN (Gr.), Netherlands

a Composition of the cell wall (chemical analysis, enzymatic degradation). Schizophyllum commune (Basidiomycetes, Fungi)
b Effect of sterols on sexual propagation and morphogenesis. Pythium spec. (Oomycetes, Fungi)

SIEWING, R. o.Prof. – I. Zool. Inst. der Univ. Erlangen-Nürnberg, Universitätsstr. 19, 852 ERLangen, B.R.D. (Germany)
a Development of body-segmentation. (Brachiopoda, Phoroneidea)
b Metamorphosis. Actinotrocha spec. (Phoronidea)

SIGNORIAT, J. Dr.es Sci., Prof. - Lab. d'Embryol., Unité de Sci., Univ. de Caen, 14032 CAEN, France

a Study of nuclear differentiation and specific activities by means of nuclear transplantation. Ambystoma mexicanum (Urodela)

b 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, 94130 NOGENT-sur-MARNE, France

a Morphogenèse du tube digestif en culture in vitro, spécialement ultrastructure et enzymologie de l'estomac. Gallus spec. (Aves) (avec M. F. SIGOT)

b Stimulation de la différenciation glandulaire en vitro. Gallus spec. (Aves)

c Histoimmunologie de l'estomac embryonnaire. Gallus spec. (Aves)

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, 94130 NOGENT-sur-MARNE, France

a Cancérogenèse chimique du foie, étudiée en culture pour la caractérisation des cellules hépatiques. Gallus norwegicus (Rodentia)

c Ultrastructure et enzymologie de l'estomac de l'embryon. Gallus gallus (Aves) (avec M. SIGOT)

SILEN, L. K. P. Fil.Dr., Prof. - Zool. Inst., Univ. of Stockholm, Rödmansgatan 70 A, Box 6801, S-113 86 STOCKHOLM, Sweden

no embryological work in progress

SIMKISS, K. Ph.D., Prof. - Dept. of Zool., Univ. of Reading, READING RG6 2AJ, England

a Calcium pumps in the chorioallantoic membrane and their role in transporting ions from eggshell to embryo. Gallus domesticus (Aves)

b Electrolyte movements from chorion and from allantoic fluid to blood. Gallus domesticus (Aves)

SIMPSON, Mrs. P. B.Sc.(Hons.) - Inst. d'Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France

a Transdetermination in imaginal discs after long-term culture in vivo. Drosophila melanogaster (Diptera)

b Protein patterns in imaginal discs. Drosophila melanogaster (Diptera) (with E. J. C. SMITH)


a DNA synthesis and cell cycles during eye development, especially development of regional differences in neural retina and pigment epithelium. Acipenser stellatus, A. gildenstädti (Chondrostei) (with O. G. STROEVA, V. I. MITASHOV, and E. A. BABURINA)

SISTO DANEO, Miss L. - Dept. of Human Anat., Univ. of Torino, Corso M.D'Azeglio 52, 10126 TORINO, Italy

a Electron microscopy of the partially deafferentiated embryonic optic tectum. Gallus domesticus (Aves)

b Precocious neuromuscular functions in the embryo (electron microscopy). Gallus domesticus (Aves)


a Ultrastructure of oogonia and oocytes. Homo sapiens (Primates)


a Effect of gonadotropins and changes in the germinal vesicle and in the oocyte cytoplasm during maturation. (Acipenseridae, Chondrostei; Amphibia) (with T. A. DETTLAFF and T. B. AISEN-STADT)

b Role of karyolysis in the formation of the mature egg properties. Acipenser stellatus (Chondrostei), Misgurnus fossilis (Teleostei), Rana temporaria, Bufo spec. (Anura)

c Mechanism of action of gonadotropic hormones. Same species as b

ŠKREB, N. M.D., D.Sc., Prof. - Inst. of Biol., Fac. of Med., Univ. of Zagreb, Šalata 3, P.O.Box 166, 41001 ZAGREB, Yugoslavia

a Early differentiation; transplantation, in vitro culture, autoradiography. Rattus norvegicus (Rodentia) (with B. LEVAK, Lj. HOFMAN and A. ŠVAJGER, Inst. of Histol. and Embryol.)

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. DAMJANOV)

d Developmental capacities of tissues of the chorioallantoic membrane. Gallus domesticus (Aves) (with B. LEVAK and A. ŠVAJGER)

SLABY, O. D.Sc., Prof. - Inst. of Histol. and Embryol., Charles Univ., Karlovarska 48, PLZEŇ, Czechoslovakia

- temporarily: Cité Jean de la Fontaine, La Tour, ORAN, Algeria

(No embryological work in progress)

SLACK, Mrs. C. Dr.sc., Ph.D. - Dept. of Physiol., Royal Free Hosp. Med. School, LONDON W.1, England

SLÁDEČEK, F. RNDr., DSc., Prof. - Dept. of Exp. Zool., Charles Univ., Viničná 7, 12844 PRAHA 2, Czechoslovakia

a Transplantation of nuclei in relation to the development of antigenic characteristics. (Amphibia) (with A. ROMANOVSKÝ)

b Transplantation of nuclei in relation to nucleic acids. (Amphibia) (with J. NEDVÍDEK)

c Number of cell generations in relation to cell determination. (Amphibia)

SLÁMA, K. RNDr., CSc. - Dept. of Physiol., Inst. of Entomol., Czech. Acad. of Sci., Na Folimance
5, 12000 PRAHA 2, Czechoslovakia

a Action of juvenile hormone analogues on embryo development. Pyrrhocoris apterus and other spp. (Heteroptera)

b Hormonal control of metamorphosis – comparative study on the action of analogues of juvenile hormone and ecdysone; interactions of these hormones; study of hormone action using genetic methods. Pyrrhocoris apterus, Dysdercus cingulatus (Heteroptera), Tenebrio molitor, Dermestes vulpinus (Coleoptera)

SLÍPKA, J. Dr.Med., Dr.ren.nat., C.Sc. – Inst. of Histol. and Embryol., Charles Univ., Karlovská 48, PLZEŇ, Czechoslovakia

a The development and teratology of the branchial region. (Amniota, incl. Homo sapiens)

b The development of the bursa pharyngae from the standpoint of evolutionary morphology. Homo sapiens (Primates)

SMART, I. H. M. M.B.; Ch.B. – Dept. of Anat., Univ. of Dundee, DUNDEE DD1 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)

SMIRNOVA, Mrs. E. I. Cand.biol.sci. – Chair of Embryol., Biol. Fac., State Univ. of Moscow, Lenin Hills, MOSCOW 117234, U.S.S.R.
a Teratogenesis. Mus musculus, Rattus spec. (Rodentia)

SMITH (FARKAS), Mrs. A. F. Ph.D. – Dept. of Anat., Med., Univ. of Birmingham, Edgbaston, BIRMINGHAM B15 2TJ, England

a Ultrastructure of implantation. Mus musculus (Rodentia)
b Implantation and embryonic development under different hormonal regimes. Mus musculus (Rodentia)


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 Protein patterns in imaginal discs. Drosophila melanogaster (Diptera) (with P. SIMPSON)


a In vitro differentiatation. Echinococcus granulosus and other spp. (Cestoda)

a Differentiation in preimplantation stages (1 to 150 cells) in vivo and in vitro. Mus musculus (Rodentia)
b The interaction of genotypes in embryos of mixed genotypes in relation to implantation. Mus musculus (Rodentia)
c Effects of heteroploidy, especially on embryonic development. Mus musculus (Rodentia)

SOBOTKA, P. M.D., CSc. – Inst. of Pathophysiol., Charles Univ., Lidická 1, 306 05 PLZEŇ, Czechoslovakia

a Influence of amino acids, newly synthesized drugs, and other substances on electrogenesis of the central nervous system during early postnatal development. Rattus norvegicus (Rodentia)

SOLOGUB, Mrs. A. A. Cand.biol.sci. – Inst. of Developm. Biol., Acad. of Sci. of the USSR, Vavilov St.26, MOSCOW 117334, U.S.S.R.
a Metaplastic potencies of embryonic and larval eye for lens and retina regeneration. Anoptichthys jordani (Teleostei) (with G. V. LOPASHOV)
b Stimulation of metaplasia of the pigment epithelium of the larval and adult eye. Xenopus laevis (Anura), Leuciscus ber gi (Teleostei)
c Stimulation of metaplasia of the pure pigmented epithelium of adults into retina by means of agents from newly differentiated retina. Rattus norvegicus (Rodentia) (with G. V. LOPASHOV)
d Change in the spectrum of inductive abilities in the course of the differentiation of retina. Rana temporaria, Xenopus laevis (Anura), (with O. H. HOPERSKAYA)

a Onset of immunocompetence by phytohaemagglutinin-induced transformation of foetal lymphoid cells and haemolytic plaque-forming cells in vitro. Rattus norvegicus, Cavia porcellus (Rodentia)

SOLTER, D. M.D., D.Sc. – Inst. of Biol., Fac. of Med., Univ. of Zagreb, Šalata 3, P.O.Box 166, 41001 ZAGREB, Yugoslavia

a Preimplantation and early post-implantation stages; autoradiography, histochemistry, electron microscopy. Rattus norvegicus, Mus musculus (Rodentia) (with I. DAMJANOVIČ and N. ŠKREB)
b Differentiation of early post-implantation stages under the kidney capsule, teratocarcinogenesis, nature of embryonal carcinoma cells; transplantation, electron microscopy. Mus musculus (Rodentia) (with I. DAMJANOVIČ 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. DAMJANOVIČ)

SOLTYŃSKA (MARCINKOWSKA), Mrs. M. Dr. – Dept. of Cytol., Zool. Inst., Warsaw Univ., Krakowskie Przedmieście 26/28, WARSZAWA 64, Poland

a Ultrastructure of cell differentiation. (Turbellaria)

LE, Anomalies A
Chloroplast Morphogenesis Early !SD
Reaggregation Embryogenesis Migration Experimental ISDB
Degeneration Regeneration Comparative Developpement a
STEFANELLI, A. Dr., Prof.ord. - Ist. di Anat. Comp. 'Battista Grassi', Univ. di Roma, Via A.Borelli 50, 00161 ROMA, Italy ISDB
a Nervous microsystems in vitro. Gallus domesticus (Aves)
b Reaggregation of neuroblasts of different nature; morphology of new synapses. Gallus domesticus (Aves)
c Degeneration of nerve cells during metamorphosis. (Teleostei; Amphibia), Brachydanio rerio, Atherina mochon, Esox lucius (Teleosti), Xenopus laevis (Anura)
d Morphogenesis under high hydrostatic pressure. Paracentrotus lividus (Echinoidae), Rana esculenta, Bufo bufo (Anura)
STEGEMAN, Mrs. J. H. J. - Histol. Lab., Jan Swammerdam Inst., Univ. of Amsterdam, 1e Const.Huygensstr. 20, AMSTERDAM-W., Netherlands
STEGNER, H. E. Dr.med., Prof. - Univ.-Frauenklinik, Martinist. 52, 2 HAMBURG 20, B.R.D. (Germany)
a Ultrastructure of ovarian interstitial cells, fetal ovaries, and oocytes; oocytes culture in vitro. Cavia porcellus, Mus musculus (Rodentia), Oryctolagus cuniculus (Lagomorpha), Homo sapiens (Primates)
STÉPHAN, F. Dr.ès Sci., Prof. - Lab. de Zool., Univ. de Nancy I, Case Off. 140, 54037 NANCY Cedex, France
a Développement du système vasculaire. Gallus gallus (Aves)
b Evolution postembryonnaire du tégument. Calliphora erythrocephala (Diptera) (avec A. M. BAUTZ)
STÉPHAN (DUBOIS), Mrs. F. Dr.ès Sci. - Lab. de Zool., Univ. de Nancy I, Case Off. 140, 54037 NANCY Cedex, France ISDB
a Migration et différenciation des cellules de régénération. (Planariidae; Oligochaeta microdrilis; Polychaeta errantia)
b Anomalies de la régénération. Same species as a
ŠÍERBA, O. - Dept. of Morphol., Inst. of Vertbr. Zool., Czechoslov. Acad. of Sci., Květná 8, BRNO, Czechoslovakia
STERN (HOARE), Mrs. M. S. Ph.D. - Zool. Dept., Univ. Coll. of N.Wales, BANGOR, Caerns., Wales, U.K.
a Experimental studies in early mammalian embryos. Mus musculus, Rattus spec. (Rodentia)
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)
a Comparative development of visual units recorded from optic tecta, correlating the types of ganglion cell responses and resting discharge with anatomical structure of the retina. Xenopus laevis (Anura)
b Regeneration and development of retino-tectal maps in the larva. Xenopus laevis (Anura)
c A comparative study of the development of binocular vision. Xenopus laevis (Anura), Ambystoma tigrinum, Triturus spec. (Urodela)
d The effect of altered light conditions on the development of vision in larvae and the regeneration of the optic nerve in adults. Xenopus laevis (Anura)
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)
STRAUSS, F. M.D., Prof. - Dept. of Anat., Div. of Appl. and Topogr. Anat., Univ. of Bern, 26 Buehelst., 3012 BERN, Switzerland ISDB
a Comparative implantation and placentation. (Prototheria and Eutheria, Mammalia)
b Comparative anatomy of the female reproductive system. Same species as a
c Skeletal chondrification in connection to teratogenesis. Homo sapiens (Primates)
d Early differentiation of skeletal muscles. Homo sapiens (Primates)
STREET, H. E. D.Sc., Prof. - Bot. Labs., Univ. of Leicester, LEICESTER LE1 7RH, England
a Embryogenesis and organogenesis in tissue and cell cultures (biochemistry, histochemistry, electron microscopy). Daucus carota (Umbelliferae), Atropa belladonna, Nicotiana spp. (Solanaeae)
b Cytodifferentiation and its hormonal control in vitro; induction of synthesis of secondary metabolites using mutant cell lines derived from haploid cells. Nicotiana spp., Atropa belladonna (Solanaeae), Acer pseudoplatanus (Aceraceae)
c Chloroplast differentiation and development of autotrophic growth in vitro. Nicotiana spp., Atropa belladonna and other spp. (Angiospermae)
STROEVA, Miss O. G. Dr.biol.sci. - Lab. of Developm. Cytogenet., Inst. of Developm. Biol., Acad. of Sci. of the USSR, Vavilov St. 26, MOSCOW 117334, U.S.S.R.
Development and teratology of the iris and ciliary body in organ culture. Rattus norvegicus
Developmental histology of some organs of fetus and newborn. Homo sapiens (Primates)


SZYBEK (LWICKA), Mrs. Ch. – Tornblad-Inst. for Comp. Embryol., Biskopsgatan 7, 223 62 LUND, Sweden

a Post-natal development of ovary; interactions between follicle and ovocyte; in vitro culture and maturation of oocytes. Mus musculus (Rodentia)

TABAN, Ch. H. Dr.és Sci., Dr.méd., Prof. – Inst. d’Anat., Univ, de Genève, 20 Rue de l’Ecole de Med., 121 GENÈVE 4, Switzerland

a Action of antisera on regeneration. Triturus spec. (Urodela)
b 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)

TAMARELLE (GARAUDY), Mrs. M. Dr.Univ. – Lab. de Zool. Expér., Univ. de Bordeaux I, Av. des Facultés, 33405 TALENCE, France

a Développement embryonnaire. (Collemboła)

TARDENT, P. Dr.phil., Prof. – Zool.-vergl. Anat. Inst., Univ, Zürich, Künstergasse 16, 8006 ZURICH, Switzerland


a The mechanism of neural induction, especially the role of ectod- 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 Epithelio-endothelial interactions in limb development (histology, histochemistry, electron microscopy, transplantation). Xenopus laevis (Anura)
c Interactions between epithelial and connective tissues in tumour development, invasion and metastasis (histology, electron microscopy, transplantation). (Vertebrata)

TARKOWSKI, A. K. Ph.D., D.Sc., Prof. – Dept. of Embryol., Zool. Inst., Univ. of Warsaw, Krakowskie Przedmieście 26/28, WARSZAWA 64, Poland

a Preimplantation development in vivo and in vitro. Mus musculus (Rodentia)
b Virus assisted fusion of embryonic cells and of eggs with somatic cells. Mus musculus (Rodentia)
c Chromosomal aberrations in embryogenesis. Mus musculus (Rodentia)

TARROUX, P. J. – Lab. de Zool., Ecole Norm. Supérieure, 46 rue d’Ulm, 75230 PARIS CEDEX 05, France

a Ribonucleic acid metabolism in development of wing imaginal discs. Pieris brassicae (Lepidoptera)


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), Diemictys vividescens (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


a Structural and histochemical changes in placenta near term. Bos taurus, Ovis aries, Sts domestis (Artiodactyly), Equus caballus (Perissodactyly), Canis familiaris (Carnivora)


a Embryology, phylogenesis of development and reproduction. many spp. (Cottidae, Comephoridae, Paracottidae, Cottocomephoridae), Coregonus spp., Thymallus spp. (Salmonidae, Teleostei)

TEILLET, Miss M. A. – Lab. d'Embryol., Univ. de Nantes, 38 Bd.Michelet, B.P.1044, 44037 NANTES CEDEX, France

a Détermination des cellules des crêtes neurales (cellules ganglionnaires parasympathiques et cellules paraganglionnaires orthosympathiques). Gallus gallus, Coturnix c. japonica (Aves)

TEJEDO MATEU, A. – Dept. of Anat., Univ. of Barcelona. C/Casanova 143, BARCELONA 11, Spain

a Embryology of terminal ureter. Homo sapiens (Primates)

TEMPLE, D. – Lab. d’Histol. et d’Embryol., Univ. de Montpellier, 2 rue Ecole de Médecine, 34000 MONTPELLIER, France

a Development of the nucleus of primary spermatogonia. Triturus helveticus (Urodela)
b Bidder’s organ. Bufo spec. (Anura)

TENCER, Miss R. Dr.en Sci. – Lab. de Cytol. et Embryol. Moléc., Univ. libre de Bruxelles, 67 rue des Chevaux, 1640 RHODE-ST-GENÈSE, Belgium


a Restoration of regeneration capacity of limbs after x-irradiation (biochemistry). Ambystoma mexicanum (Urodela) (with L. V. POLEZHAEV and S. J. TUCHKOVA)

TERNEY, Miss U. K. Fil.lic. – Inst. of Zool., Univ. of Gothenburg, Fack, S-400 33 GOTHEN-
a Metabolism of tryptophane and 5-hydroxytryptamine (serotonin). Psammechinus miliaris, Strongylcentrotus droebachiensis, Paracentrotus lividus (Echinoidea)
b Embryological development of collagen. Same species as a

TONG, C. H. D.D.Sc., Prof. – Dept. of Oral Anat., Dental School, Northumberland Rd., NEWCASTLE upon Tyne NE1 8TA, England

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 (MULLER), Mrs. I. – Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands

a Experimental studies on skull morphogenesis. Gallus domesticus (Aves)
TÖRO, I. M.D., Prof. – Inst. of Histol. and Embryol., Med. Univ., Túzoltó u. 58, BUDAPEST IX, Hungary

a Experimental and physiological embryology; teratogenesis. Pleurodeles waltlii, Ambystoma mexicanum (Urodela), Gallus domesticus (Aves), Rattus rattus (Rodentia)


a Nucleo-histone changes during morphogenetic processes of regeneration. Dugesia lugubris (Turbellaria)
b Nucleo-histone changes during embryonic development and regeneration. Triturus cristatus (Urodela), Xenopus laevis (Anura)
c Morphogenetic inhibition in development, regeneration, and asexual reproduction. Dugesia lugubris, D. tigrina (Turbellaria)
d Effects of steroids on embryonic development and regeneration, especially DNA-histone changes. Xenopus laevis (Anura). Rattus spec., Mus musculus (Rodentia)
TRAMPUSCH, H. A. L. Ph.D. – Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands
TRNKOVÁ, Miss E. RNDr. – Dept. of Anat., Charles Univ., U nemocnice 3, 12800 PRAHA 2, Czechoslovakia

a Development of the flexor muscles in the hand. (Mammalia)

a Morphogenesis of the adenohipophysis. Gallus domesticus (Aves)
TROSH, W. – Inst. für Genet., Univ. des Saarlandes, 66 SAARBRÜCKEN 11, B.R.D. (Germany)

a Measurements of inorganic ions and their fluxes in cell nuclei during development. Chironomus thummi (Diptera)
a Immunocytochemistry of lens development. Xenopus laevis (Anura), Gallus domesticus (Aves) (with J. C. CAMPBELL and R. M. CLAYTON)
b Antigenic studies of lens regeneration. Xenopus laevis (Anura) (with J. C. CAMPBELL)
c Properties of lens mRNAs; regulation of stability. Gallus domesticus (Aves) (with R. M. CLAYTON and A. T. H. BURNS)

a The analysis of skeletal variation in animals selected for large or small size and controls. Mus musculus (Rodentia)

a Macro- and micromorphology of the female genital system. Dendrocoitus micenis (Coleoptera)

a Restoration of regeneration capacity of limbs after x-irradiation. Ambystoma mexicanum (Urodela) (with L. V. POLEZHAEV and N. A. TEPLITZ)
TUČHMAN-ĐUPELESS, H. Prof. – Lab. d’Histol.-Embryol. A, Fac. de Méd., 45 rue des Sts. Pères, 75 PARIS VIe, France

a Anencéphalie. Homo sapiens (Primates)
b Tératogénèse par sulfamidos hypoglycémiant, antimétabolites. Rattus spec. (Rodentia) (avec L. MERCIER)
c Influence des hormones sur le développement foetal. Rattus spec. (Rodentia)
d Influence des alcaloïdes du Rauwolfa, de la réserpine et de la désérispine sur le développement. Same species as b (avec L. MERCIER)
e Influence des neuroleptiques sur la fertilité et le développement foetal. Rattus spec., Mus spec. (Rodentia), Oryctolagus cuniculus (Lagomorpha)
f Diabète experimental et grossesse. (Mammalia)
g Influence des antimitotiques sur la gestation. (Rodentia) (avec L. MERCIER)
TUDOSE, Mrs. O. Dr.med. – Dept. of Med. Biol., Med. School, P-ţă 23 August 1, TIMIȘOARA, Rumania

a Vascular development in the embryonic central nervous system. Gallus domesticus (Aves)

a Growth, density changes and water flows in pre-implantation blastocysts. Ortyctolagus cuniculus (Lagomorpha)  


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. Mispurgus fossils (Teleostei)  

c Participation of nuclear and cytoplasmic substances in control of state of DNA in chromatin. Gallus domesticus (Aves), Rattus norvegicus (Rodentia)  

TURCAŁA, K. Dr. – Inst. of Plant Cytol. and Embryol., Jagiellonian Univ., św. Jana 20, 31–018 KRAKÓW, Poland  

a Endopolyploidy during endosperm differentiation. Bryonia dioica, Cucurbita pepo (Cucurbitaceae)  

b Embryology of a seed sterile population. Ranunculus penicillatus (Ranunculaceae)  


a In vitro myogenesis. Gallus domesticus (Aves), Rattus spec. (Rodentia)  


a Endocrinology, Xenopus laevis (Anura)  

TYSZKIEWICZ, Mrs. K. M. Sc. – Zool. Dept., Jagiellonian Univ., ul. Krupnicza 50, KRAKÓW 2, Poland  

a Embryogenesis of nervous system. Tetrodontophora bielanensis (Collembolea)  


a Cytochemical heterogeneity of the egg, cleavage stages and early embryo. Ambystoma mexicanum, Xenopus laevis (Amphibia)  

b Cytochemistry of the origin of dorso-ventral polarity of the egg: pigment movements during grey crescent formation and possible role of neurotransmitters. Xenopus laevis, Discoglossus pictus (Anura) (with P. D. NIEUWKoop)  

ULLMANN, Miss S. L. Ph.D. – Dept. of Zool., Univ. of Glasgow, GLASGOW G12 8QC, Scotland, U.K.  

a Superfetation and polyovular follicles. Mus musculus (Rodentia)  

b Ultrastructure of oogenesis. Tenebrio molitor (Coleoptera)  

ULTRICH, H. Dr.phil., Prof. – Dept. of Zool., Swiss Fed. Inst. of Technol., Universitätstr. 2, 8006 ZURICH, Switzerland  

a Morphology, physiology, and cytology of paedogenetic-bisexual reproduction cycle. Heteropeza pygmaea (= Oligarcas paradoxus) (Cecidomyiidae, Diptera)  

URBANI, E. Prof. – Ist. di Istol. ed Embriol., Univ. di Roma, Città Universitaria, 00185 ROMA, Italy  

a Biochemistry of differentiation. Drosophila melanogaster (Diptera), Gallus domesticus (Aves), Mus musculus (Rodentia)  

b Organization of imaginal discs. Drosophila melanogaster (Diptera)  

VACEK, Z. MUDr., D.Sc., Prof. – Inst. of Embryol., Charles Univ., Albertov 4, 128 00 PRAHA 2, Czechoslovakia  

a Electron microscopy and histochemistry of the placenta (comparative studies on the submicroscopic 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 musculus (Rodentia)  

VAGNETTI, Mrs. D. Dr. – Ist. di Anat. Comp., Univ. di Perugia, Via A.Pascoli, 06100 PERUGIA, Italy  

a Action of magnetic field on regeneration. Dugesia lugubris (Turbellaria)  

VAHS, W. Dr.phil., Prof. – Zool. Inst. der Univ., Weyertal 119, 5 KOLN 41, B.R.D. (Germany)  

a Quantitative cytochemistry of nucleic acids and proteins during induction and differentiation. Triturus vulgaris (Urodela)  

b Phase specific gene activites in the eyecup-lens-system of the developing embryo, as revealed by quantitative cytochemical DNA determinations. Salmo irideus (Teleostei), Triturus vulgaris (Urodela)  

c Ultrastructure of embryonic cells undergoing induction and differentiation. Same species as a  

VAKAFT, 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 vitro culture of blastodermal, normal and after experimental interventions; histochemistry: enzymes and mucopolysaccharides. Coturnix japonica, Gallus domesticus (Aves)
d Autoradiography of oogenesis. Mus musculus (Rodentia)

VALK, P. van der Drs. - Lab. of Bot., State Univ., Kerklaan 30, P.O.Box 14, HAREN (Gr.), Netherlands

a Ultrastructure and biochemistry of cell wall regeneration using protoplasts. Schizopyllum commune (Basidiomycetes, Fungi)

VANDEBROEK, G. D.Sc., Prof. - Lab. d'Embryol., Inst. de Zool., Univ. de Louvain, 59 rue de Namur, LOUVAIN, Belgium (ISDB)


a Germ cell determination during early embryogenesis, Drosophila subobscura (Diptera)

VAN GANSEN (RASMONT), Mrs. P. Prof. - Dept. of Molec.Biol., Free Univ. of Brussels, 67 rue des Chevaux, 1640 RHODE ST.GENESE, Belgium (ISDB)

a Ultrastructure of young ovaries at metamorphosis. Xenopus laevis (Anura)

b RNA synthesis during oogenesis and maturation (electron microscopy, autoradiography).

(Vasilliadis, Amphibia)

c Effect of rifamycin SV on rDNA synthesis and nucleolar structures in young oocytes (electron microscopy, autoradiography). Xenopus laevis (Anura)

d Biochemistry and ultrastructure of particulate glycogen purified from oocytes and embryos: degrading effects of amylase and deproteinization with trichloracetic acid. 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. (Hydroidae: Tricladidea, Turbellaria; Serpulidae, Polychaeta)

VASSE, J. Lic.és Sci. – Serv. d'Embryol. Expér., Inst. Pasteur, 20 rue des Moulins, 95110 SANNOIS, France

a Relationship between the somites and the primordia of the forelimbs. Testudo spec., Emys 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 C. PIEAU)

d Effects of metabolic inhibitors on embryonic development. (Reptilia)


a Dynamics of meiosis and mitosis in eggs. Strongylocentrotus drobachiensis, S. intermedius (Echinoidae)

b Production of diploid gynogenesis by means of heat treatment of oocytes at the first maturation division and of chemical treatment (with nitrogen mustard) of sperm. Acipenser gudensstädti, A. stellatus (Chondrostei)

VEINI, Miss M. M.Sc. – Zool. Lab., Univ. of Athens, Panepistimiopolis (Kouponia), ATHENS (621), Greece

a Differentiation tendencies of Hensen’s node in primitive streak and head process stages examined by coelomic transplantation of the node. Gallus domesticus (Aves)


a Immunological relationships between mother and foetus. Rattus norvegicus (Rodentia), Papio hamadryas, Macaca mulatta, Homo sapiens (Primates)

b Humoral interactions between analogous organs (reticulo-endothelial and leucopoietic system) of mother and foetus. Rattus norvegicus (Rodentia), Macaca mulatta (Primates)

VERDIER, G. P. J. Dr.spec. – Sect. de Biol. Gén. et Appl., Univ. de Lyon I, 43 Bd. du 11 Novembre 1918, 69621 VILLEURBANNE, France

a Métabolisme du mRNA lors de l’induction de la formation du chloroplaste à la lumière. Euglena gracilis (Euglenophyceae)

VERDONK, N. H. Ph.D. – Zool. Lab., State Univ. of Utrecht, Transitorium III, Univ.centrum ‘De Uithof’, URECHT, Netherlands

a Determination of bilateral symmetry in the head region. Lymnaea stagnalis (Gastropoda)

b Gene expression in early development. Lymnaea stagnalis (Gastropoda)

c Germlinal localization in eggs. Dentalium spec. (Scaphopoda); Patella spec. (Gastropoda)

d Development of isolated blastomerodes. Bithynia tentaculata (Gastropoda)


VERHOFSTAD, A. A. J. Med.drs. – Dept. of Anat. and Embryol., Univ. of Nijmegen, Geert Grooteplein N. 21, NIJMEGEN, Netherlands

a Differentiation of epinephrine- and nor-epinephrine-containing cells, in the adrenal medulla, (histochemistry). Mus rattus (Rodentia)

VERNET, G. Dr.Biol. – Lab. of Biol. Cell., Univ. de Reims, B.P.347, 51062 REIMS Cedex, France

a Synthesis of porphyrins during development. Lineus viridis (Nemertea)

b The roles of pigments (melanin, porphyrin, hemoglobin, and others), (Lineidae, Nemertea)

c Porphyrin synthesis in erythroid cells. Rattus spec. (Rodentia), Homo sapiens (Primates)

VERNET (CORNUBERT), Mrs. G. M. Dr.es Sci., Prof. – Lab. de Physiol. des Invertebrés, Univ. des Sci. et Techn. du Languedoc, 34 MONTPELLIER, France

VETTERLEIN, Miss M. M.B. – Inst. für Krebsforsch., Univ. Wien, Borschkegasse 8a, Postfach 72,
A-1090 WIEN, Austria

a Enzyme induction in embryonic and adult liver cells in vitro by steroid hormones. Rattus norvegicus (Rodentia)

VIJVERBERG, A. J. - 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, ecdysonote and juvenile hormone on morphogenesis of imaginal discs. Calliphora erythrocephala (Diptera)

VILANOVA TRIAS, J. - Dept. of Anat., Univ. of Barcelona, C/ Casanova 143, BARCELONA 11, Spain

a Effect of testosterone on development of genital system. Mus musculus (Rodentia)

VILLA, Miss L. Dr.Sci. - Zool. Inst., Univ. of Palermo, Via Archirafi 18, 90123 PALERMO, Italy

a Ultrastructure of spermatozoa and fertilization. Ascidia malaca (Ascidiae)
b Ultrastructure of oocyte and egg development. Chaetopterus spec., Sternaspis spec. (Polychaeta)

VINCE, Miss M. A. B.A. - Psychol. Lab., Univ. of Cambridge, Downing St., CAMBRIDGE CB2 3EB, England

a Effect of external stimuli on acceleration and retardation of development and hatching. Coturnix c. japonica, Colinus virginiana, Gallus gallus (Aves)
b Relation between activity and physiology in the onset of foetal lung ventilation. Same species as a

VISCUSO, Miss R. Dr. - Ist. di Zool., Univ. di Catania, Via Androne 81, 95124 CATANIA, Italy

VITTORELLI, Miss M. L. Dr.Biol. - Ist. di Anat. Comp., Univ. di Palermo, Via Archirafi 20, 90123 PALERMO, Italy

a Fusion of blastomeres. Paracentrotus lividus (Echinoidea)
b DNA synthesis in dissociated embryonic cells and their capability to react with concanavalin A. Same species as a

c Isolation of plasma membranes from blastula cells and detection of enzymatic activities. Same species as a


a Cytostatic effects of antibodies against embryonic and tumour-specific cell-surface antigens on cells cultured in vitro. Mus musculus (Rodentia), Homo sapiens (Primates)
b Control of cell growth in vitro by solubilized cell-surface material obtained from homologous embryonic and tumour cells and from heterologous cells. Same species as a

VOLLMAR, H. Dr.rer.nat. - Biol. Inst. I (Zool.) der Univ., Katherinenstr. 20, 78 FREIBURG, B.R.D. (Germany)
a Embryonic determination. Acheta domestica (Orthoptera)
b Morphogenetic movements during early embryogenesis. Same species as a

VOLLRATH, L. Priv.Doz., Dr.med. - Dept. of Anat., King’s College, Univ. of London, Strand, LONDON WC2R 2LS, England

VREEZEN, Miss W. J. Drs. - Dept. of Genet., Univ. of Leiden, Kaiserstr. 63, LEIDEN, Netherlands

a Selection on asymmetrical development of bristle patterns. Drosophila melanogaster (Diptera)

VRIES, O. M. H. de Drs. - Lab. of Bot., State Univ., Kerklaan 30, P.O.Box 14, HAREN (Gr.), Netherlands

a Biochemistry of wall formation, using extracts and protoplasts. Schizophyllum commune (Basidiomycetes, Fungi)

VUJANOVIC, N. L. M.D. - Immunol. Res. Center, Univ. of Belgrade, Vojvode Stepe 458, P.O.Box 979, 11000 BEograd, Yugoslavia

a Lymphoid tissue development. Gallus domesticus (Aves)

VYAZOV, O. E. Dr.med.sci., Prof. - Lab. of Embryol., Inst. of Human Morphol., Acad. of Med. Sci. of the USSR, Shcheinkl St. 61/2, MOSCOW 125110, 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)

WADA, S. Dr.rer.nat. - Zool. Inst., Univ. Düsseldorf, Mettmanner Str. 16–18, 4 DÜSSELDORF, B.R.D. (Germany)
a Morphogenesis of the compound eyes. (Arthropoda)


a Development of imaginal buds. Drosophila spec. (Diptera) (with E. M. ROBERTSON)
b Computer simulation of biological patterns (with R. COWE)

WAHLI, W. cand.phil. - Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlstr.8, 3012 BERN, Switzerland

a Larval cell cultures. Xenopus laevis (Anura) (with R. WEBER)

WAKELEY (DENT), Mrs. J. Ph.D. - Dept. of Visual Sci., Inst. of Ophthalmol., Judd St., LONDON WC1H 9QS, England

a Influence of light on postnatal development of retina (electron microscopy). Rattus norvegicus (Rodentia)
b Normal development and congenital defects in the lens. Gallus domesticus (Aves), Rattus norvegicus (Rodentia)

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, D. G. Ph.D., Dr.Sc., Prof. – Dept. of Biochem., Univ. of Birmingham, Edgbaston, BIRMINGHAM B15 2TJ, England

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. (Asciidae)


a Myogenesis. Gallus domesticus (Aves)

WANSCHER, J. H. Dr.agron. – Horticult. Dept., Royal Vet. and Agric. Univ., 40 Thorvaldensensvej, 1871 COPENHAGEN V, Denmark

b Developmental genetics. (Plantae; Animalia)
b Developmental genetics of shell morphology. (Mollusca)


a Light and electron microscopy of male and female germ cells in the fetus. Homo sapiens (Primates); (Mammalia)

WARTIOVAARA, J. J. M.D. – Lab. of Exp. Embryol., III.Dept. of Pathol., Univ. of Helsinki, Haartmaninkatu 3, 00290 HELSINKI 29, Finland

b Electron microscopy of cytodifferentiation during kidney tubulogenesis in vitro. Mus musculus (Rodentia) (with L. O. SAXÉN and E. LEHTONEN)

b Freeze-etching electron microscopy of ribosomes – membrane association in BHK (baby hamster kidney) cell line. (Rodentia)


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 (mucopolysaccharides and collagen)
d Manganese in relation to wound healing

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)
b Effects of different preparative procedures on ultrastructure of differentiating ovarian tissue. Mesocricetus auratus (Rodentia)

WEBER, R. Ph.D., Prof. – Div. of Cell and Developm. Biol., Zool. Inst., Univ. of Bern, Sahlisst.8, 3012 BERN, Switzerland

a Mechanism of tissue involution during metamorphosis. Xenopus laevis (Anura)
b Thyroryx and RNA synthesis in tadpole tissues. Xenopus laevis (Anura) (with G. RYFFEL, U. SCHIBLER and O. HAGENBUCHLE)
c Cell cultures of larval tissues. Xenopus laevis (Anura) (with W. WAHLI)

WEBSTER, G. C. Ph.D. – Sch. of Biol. Sci., Univ. of Sussex, Falmer, BRIGHTON BN1 9QG, England

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 St. 200, 5 KÖLN 91, B.R.D. (Germany)

a Development, especially of the nervous system; neurogenetics. Mus musculus, Rattus spec., Cavia porcellus (Rodentia)
b Experimental induction of tumors and malformations during development. Same species as a
c Development of clonal cell lines of the nervous system with differentiated functions. Same species as a

WEGENER, G. Dr.rer.nat. – Zool. Inst. der Univ., Berlinerstr. 15, 6900 HEIDELBERG 1, B.R.D. (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. Phisysarum polycephalum (Eumycetozoa)

WEGMANN, R. Dr.en Méd., Dr.es Sci., Prof. – Inst. d’Histochem. Méd., Univ. René Descartes, 45 rue des Sts. Péres, 75270 PARIS Cedex 06, France

a Enzymology and metabolic pathways of morphogenesis (Mammalia)
b Development of the ovary (Mammalia)
c Maturation of oogonia (Mammalia)

WEGNEZ, M. Lic.es Sci. – Lab. de Biochim., Univ. de Liège, 17 Place Delcour, B-4000 LIÈGE, Belgium

a Mécanismes biochimiques de l’oogénèse. Xenopus laevis (Anura)

WEIDELI, H. J. Dipl.Phil.II – Biozentrum der Univ. Basel, Klingelbergst. 70, 4056 BASEL, Switzerland

a Differentiation and determination; factors involved in embryonic development; mRNA synthesis
a Mode of action of growth hormones. Rhodnius prolixus (Triatomidae, Hemiptera)

WIJK, R. van Dr. – van 't Hoff Lab., State Univ. of Utrecht, Sterrenbos 19, UTRECHT, Netherlands

a Factors affecting growth rate and length of cell cycle phases of normal hepatocytes and cultured hepatoma cells; role of cyclic nucleotides and hormones. Rattus spec (Rodentia)

WILBY, O. K. D.Phil. – Dept. of Zool., Univ. of Glasgow, GLASGOW G12 8QC, Scotland, U.K.

a Simulation of developmental processes at the cellular level, including morphology and determination, using a digital computer

b Cellular and supracellular processes in limb development, especially control of overall form and pattern of chondrogenesis (normal, talpid, wingless, Ametapodia strains). Gallus domesticus (Aves)


a Mechanisms underlying heterocyst spacing. Anabaena spec. (Cyanophyceae)

WILD, A. E. Ph.D. – Dept. of Biol., Univ. of Southampton, SOUTHAMPTON SO9 5NH, England

a Protein transmission across foetal membranes. Oryctolagus cuniculus (Lagomorpha)

WILDE, 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)

WILLEMSE, M. Th. M. Ph.D. – Dept. of Zool., Cathol. Univ., Toenooiveld, NIJMEGEN, Netherlands

a Spermatogenesis and oogenesis. (Teleostei)

b Morphology, physiology, and biochemistry of the hatching glands. Brachydanio rerio (Teleostei), Xenopus laevis (Amara)


a Laboratory rearing of larval stages; moultling, feeding, number of stages. Palinurus elephas, Nephrops norvegicus (Decapoda, Crustacea)

b Effect of thalidomide on development. Artemia salina (Branchiopoda, Crustacea)


a Establishment of implantation and early pregnancy. Mus musculus (Rodentia)

b Experimental developmental morphology. Mus musculus (Rodentia)

WINGSTRAND, K. G. Dr.phil., Prof. – Inst. of Comp. Anat., Univ. of Copenhagen, Universitetsparken 15, 2100 COPENHAGEN Ø, Denmark

WINTER, M. Dr. rer. nat. – Zoolog. Inst. der Univ., Berlinerstr. 15, 6900 HEIDELBERG, W Germany

WITKOWSKA, Mrs. A. Ph.D. – Dept. of Embryol., Zool. Inst., Univ. of Warsaw, Krakowskie Przedmieście 26/28, WARSZAWA 64, Poland

a Preimplantation development in vivo and in vitro. Mus musculus (Rodentia)

b Chromosomal aberrations in embryogenesis. Mus musculus (Rodentia)

WOELLWARTH, C. von Dr.phil. – Münchingerstr. 5, 7257 DITZINGEN, B.R.D. (Germany) ISDB

a Autonome Musterbildung in der Medullarplatte. Triturus alpestris (Urodela)

b Determination der Kopfgänge. Same species as a

c Entstehung von Situs inversus durch Defekte und verschiedene äussere Einflüsse. Same species as a

WOERDEMAN, M. W. M.D., Prof.(Emer.) – Anat.-Embryol. Inst., Univ. of Amsterdam, Mauritskade 61, AMSTERDAM-O., Netherlands

a Lens development. (Aves; Mammalia)


a Embryology. Daphnia magna, Leptodora kindtii (Cladocera, Crustacea)

WOLBERT, P. Dr. rer. nat. – Zool. Inst. I. Univ. Würzburg, Röntgenring 10, 87 WÜRZBURG, B.R.D. (Germany)

a Hormone dynamics in the pupa during normal development and after wounding or X-raying. Galleria mellonella (Lepidoptera)

WOLF, R. Dr. – Zool. Inst.I der Univ., Röntgenring 10, 87 WÜRZBURG, B.R.D. (Germany)

a Correlation between kinematics and specific ultrastructures during early embryogenesis, including experiments by physical noises (time lapse microcinematography, electron microscopy). Wachtliella persiciarum (Cecidomyiidae), Chironomus thummi (Chironomidae, Diptera)

WOLFF (HENNIG), Mrs. Em. Dr.ès Sci. – Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France

a Organ culture of cancer tumors taken directly from the patient: growth factors for long term culture; culture on yeast and liver dialysates; fractionation of dialysates of liver extracts, Homo sapiens (Primates)

WOLFF, Et. C. Dr.ès Sci., Prof. – Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France

a Culture in vitro de longue durée de tumeurs malignes en présence 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 et des anticorps. (Aves)


WOLTZ Ph. M.és Sci. - Lab. de Bot., Univ. de Provence, Centre St. Charles, Place Victor Hugo, 13003 MARSEILLE, France

a Influence of cotyledon primordia on vascular bundle development in embryos cultured in vitro (microsurgery). Pinus pinea, P. palustris (Gymnospermae)


a Teratology. (Mammalia)

WOYKE, J., Dr.habil., Prof. – Dept. of Biol. Basis of Anim. Breeding, Fac. of Zootechnics, Coll. of Agric., ul. Nowoursynowska 166, WARSZAWA 12, Ursynów, Poland

a Developmental genetics; sex determination and development of diploid drones. Apis mellifera (Hymenoptera)

b Development of reproductive organs and spermatogenesis of diploid drones (larval and pupal stage). Apis mellifera (Hymenoptera)

c Polyploidization of tissues during development of haploid and diploid drones and of queens and workers. Apis mellifera (Hymenoptera)

d Developmental genetics. Apis cerana (Hymenoptera)

WRIBA, H., Dr.med., Dr rer. nat., Prof. – Inst. für Krebsforsch., Univ. Wien, Borschkegasse 8a, Postfach 72, A-1090 WIEN, Austria

a Stoffwechsel in vitro. (Rodentia)

b Elhautbildung, Differenzierung und Missbildung in vitro. (Rodentia)

c Heterotransplantation. (Rodentia)

d Diaplastencart Carcinogenese. (Rodentia)

WRÓBLEWSKA, Miss J. M.Sc. – Dept. of Embryol., Zool. Inst., Univ. of Warsaw, Krakowskie Przedmiescie 26/28, WARSZAWA 64, Poland

a Preimplantation development in vivo and in vitro. Mus musculus (Rodentia)

c Chromosomal aberrations in embryogenesis. Same species as a


WURMBACH, H., Dr., Prof. – Inst. für Landwirtsch. Zool. und Bienenk. der Univ., Melbweg, 53 BONN, G.W.Germany

WYL, E. von Dipl.phil.II – Zool. Inst. der Univ., Künstlergasse 16, 8006 ZÜRICH, Switzerland

a Protein synthesis of isolated paragonia: pattern and regulation. Drosophila melanogaster (Diptera)

WYLES, Mrs. Ch. WISE B.Sc.(Hons.) – Zool. Dept., Univ. Coll., Belfield, Stillorgan Rd., DUBLIN 4, Ireland

a Ultrastructure of developing retinoreceptors. Lebistes reticulatus (Teleostei)


a RNA and DNA metabolism during oogenesis and in early embryos. Gallus domesticus (Aves)

b Effect of polyamines on nucleic acid metabolism in oocytes. Xenopus laevis (Anura)

WYSOCKA, Miss B. B.Sc. – Dept. of Histol. and Embryol., Acad. of Med., ul.Narutowicza 60, ŁÓDZ, Poland


a Somatic cell genetics. Drosophila spec. (Diptera)


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 CORREIA)


a Morphology of jaw development in the young animal. Oryctolagus cuniculus (Lagomorpha)

b Experimental morphogenesis in the young animal: muscle ablations, neurotomy, dental bud transplantaion etc. Same species as a

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)

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)

ZACCANTI, F. Dr. – Inst. of Zool., Univ. of Bologna, Via S.Giacomo 9, 40126 BOLOGNA, Italy

a Hormonic regulation of ovarian and Bidder’s organ oogenesis. Bufo bufo (Anura)

b Effect of steroids on sex differentiation (autoradiography). Rana dalmatina, R. latastae, R.esculenta, Bufo bufo (Anura)

ZAFFAGNINI, F. Dr., Prof. – Inst. of Zool., Univ. of Bologna, Via S.Giacomo 9, 40126 BOLOGNA,
Italy

Oogenesis in parthenogenetic and amphigonic eggs. Daphnia spec. (Cladocera, Crustacea)
Endocrine centres, growth, moulding, and gametogenesis. Same species as a
Organization of reproductive system and gametogenesis. Limnadia lenticularis (Conchostraca),
Dorothea rivera meleagris (Mystacocarida, Crustacea)

ZÁHLAVA, J. MUDr., CSc. – Inst. of Pathophysiol., Charles Univ., Lidická 1, 306 05 PLZEŇ, Czechoslovakia

Developmental changes in the connections between medial geniculate body and homo- or contralateral cortical auditory areas in the gyrus ectosylvius anterior and medius. Canis familiaris (Carnivora)

The different influence of GABA (γ-aminobutyric acid) and some convulsants on the cortical auditory responses evoked by acoustic or by electrical stimulation of subcortical structures during postnatal development. Canis familiaris (Carnivora)


Specificity of spermatogenesis and oogenesis. Esox lucius (Teleostei)

ZAMBRE, S. K. Ph.D. – Dept. of Physiol., Inst. of Entomol., Czech, Acad. of Sci., Na Folimance 5, 12000 PRAHA 2, Czechoslovakia

Embryogenesis. Dineutes indicus (Coleoptera)

Endocrinology. Drosophila melanogaster (Diptera), Schistocerca gregaria (Orthoptera)


Endocrine aspects of blastocyst implantation. Rattus norvegicus (Rodentia)

Egg transplantation. Mus musculus (Rodentia)

Development of ectopic trophoblast. Rattus norvegicus, Mus musculus (Rodentia)

Energy requirements and fertility of matured oocyte. Mus musculus (Rodentia)

Fusion of blastomeres and oocytes with inactivated sendai virus. Mus musculus (Rodentia)


Embryology. Thermosbaenacea and other Malacostraca (Crustacea)

ZILLER (SENGEL), Mrs. C. Dr.és Sci. – Inst. d’Embryol. et Tératol. Expér. du C.N.R.S., 49bis Av. de la Belle Gabrielle, 94130 NOGENT-sur-MARNE, France

Lab. d’Embryol. Expér. du Coll. de France, 11 Place M.Berthelot, 75 PARIS Ve, France

In vitro culture of regenerating tissues and organs. Dugesia lugubris, D. tigrina, Polycehis nigra (Turbellaria)

Influence of various factors (tissue and organ extracts) on pharynx regeneration. Same species as a

Development and determination of imaginal discs. Drosophila melanogaster (Diptera)

ZIMMERMANN, W. Dr.rer.nat. – Arbeitgr. Prof. G. H. M. Gottschewski am Max-Planck-Inst. für Immunbiol., Stefan-Fei Mayer-Str. 8, 78 FREIBURG i.Br., B.R.D. (Germany)

Normal development of early stages with special reference to the immunological and nutritional relations with the mother. Mesocricetus auratus, Cavia porcellus (Rodentia)

Determination and differentiation of organ primordia analysed by the use of teratogenic substances. Mesocricetus auratus, Cavia cobaya (Rodentia)

ZISSLER, D. Dr.rer.nat. – Biol. Inst. I (Zool.) der Univ., Katharinest. 20, 78 FREIBURG, B.R.D. (Germany)

Ultrastructure of normal and UV-irradiated eggs and embryos. Smittia spec. (Chironomidae, Diptera)

ZOKOLOVA, Mrs. Z. A. – Chair of Embryol., Biol. Fac., State Univ. of Moscow, Lenin Hills, MOSCOW 117234, U.S.S.R.

Induction connections between parts of the eye. Lymnaea stagnalis (Gastropoda), Rana temporaria (Anura)

ZONNEVELD, B. J. M. Drs. – Dept. of Genet., Univ. of Leiden, Kaiserrstr. 63, LEIDEN, Netherlands

Developmental genetics of the fruiting bodies. Aspergillus nidulans (Ascomycetes)


Thermodynamic aspects of developmental biology.

Growth and energetics of embryos. Musgnurus fossilis (Teleoste), Ambystoma mexicanum (Urodeia)

ZUBOVA, Mrs. S. E. – Biol. Inst., Leningrad State Univ., LENINGRAD B-164, U.S.S.R.

Sex differentiation. (Chondrostei)

The process of gametogenesis under ionizing radiations. (Chondrostei)

ZÜCCATOSTA, A. Dr. – Anthropol., Inst., Univ. of Camerino, 62032 CAMERINO, Italy

Developmental pathology. Homo sapiens (Primates)

ZUCHT, B. Dr. rer. nat. – Inst. für Allgem. und Spez. Zool., Naturwissensch. Fak., Univ. Hohenheim, 7 STUTTGART 70, W.Germany


Effect of ions on gene function. Chironomus spec. (Diptera)


Resistance and adaptation of the early embryo. Testudo graeca, T. horsfieldi, Emys orbicularis and others (Chelonla), Gallus gallus, Anas domesticus, Coturnix coturnix and others (Aves)
DIRECTORY OF INSTITUTES
with Members engaged in Developmental Biology

(geographical order)

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The Directory does not give Institute addresses. These can be found by looking up the name of one of the Institute members in the Directory of Names and Addresses.

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* LUGER, O.
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** ELBLING, Miss L. Res. Asst.

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115
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117
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  * Lovtrup (Rein), Mrs. H. Docent
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Löffler, C. A.
  * Jacobson, D. O. Prof.
  * Hjeljordius, S. Prof. (Emer.)
  * Jägersten, K. G. M. Prof. (Emer.)
  * Holm, K. A. Docent
  * Franzen, A. S. Docent
  * Ehn, J. A. Docent
  * Gidholm, L. Docent
  * Henderberg, J. Docent
  * Jonsson, B. G.
  * Ström, R.
  * Widersten, B.
  * Cantell, C-E.
  * Löfberg, J. E.
  * Gezelius, N. G. B.
  * Jinnerot, D. P. A.
  * Ebendal, T. L. Asst.
  * Hedlund, K-O. Asst.

SWITZERLAND

  * Ludwig, K. S. Prof.
  * Baer, R.
  * Kress, Miss A.
  * Spornitz, U. M.
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  * Gehring, W. J. Prof.
  * Weidel, H. J.
  * Widmer, B. G. Asst.
  * Holden, Miss J. J. Postd. fellow
  * Van Deusen, E. B. Postd. fellow
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  * Portmann, A. Prof. (Emer.)
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  * Huber, W. Prof., Dir.

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  * Révész (Ferenczy), Mrs. E. Prosect.
  * razek, H. A. Instr.
  * Dubly, J. Prosect.
  * Balthzer, F. Prof. (Emer.)
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  * Hauser, R. F. Prof.
  * Scholl, A. Asst.
  * Ryffel, G. Asst.
  * Hageneduchle, O. Res. Asst.
  * Wahi, W. Res. Asst.
  * Huber, W. Prof.
Bern (see also Ostermundigen)
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  * Fischberg, M. Prof. ord.
  * Gloor, H. J. Prof.
  d'Embryol-Teratol. Exp.
  * Schowing, J. Prof.
  * Robadey (Ribas), Mrs. M. Asst.
  * Diethelm, F. Asst.
  * conti, G. Prof., Dir.
  * Gotz, V. Asst.
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  * Taban, Ch. H. Prof.
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  Embryol. & Cytogenet.
  * kajii, T. Asst. Prof.
  * FERRIER, Miss A. Res. Assoc.
  * Niikawa, N. Res. Assoc.
  * Galliera, J. Reader, Dir.
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  Exp. sur le Cancer
  * Modak, S. P.
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  * Scherrer, K. Head
  * Cornuz, Mrs. R. Techn. Asst.
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  * Pexieder, T. Asst. Prof.
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  * Pieri, G. Prof., Dir.
  * Kraus, Miss C. Asst.
  * Gihr, Miss M. Asst.
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  Lab. for Developm. Biol.
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  * Eppenberger, H. M. Asst. Prof.
  * Leuzzi, M. Oberasst.
  * Turner, D. C. Oberasst.
  * Holderegger, C. Asst.
  * Zueger, P. Asst.
  * Andres, R. Asst.
  * Wallimann, T. Asst.
  * Gmuer, N. Asst.
  * Century, T. Res. Assoc.
  * Wyss, Ch. Res. Assoc.
SCOTLAND (see UNITED KINGDOM)

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* FRENCH, V. K. Grad. stud.
* PRITCHARD, D. J.

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* YOUNG, B. A. Lect.
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* JAMES, B. L. Sen. Lect.
U.S.S.R.

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* KOROCHKIN, L. I. Prof., Head
* KUZIN, B. Chief of Group
* SEROFF, O. Chief of Group
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* JANDIERI, Miss K. M. Sen. Sci. worker
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KASYANOVA, V. L.

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WALES (see UNITED KINGDOM)

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*MARTINOVIĆ, P. N. Head

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* MILKOVIĆ (ŽULJ), Mrs. K. Prof.
* LEVAK (ŠVAJGER), Mrs. B. Asst.
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* HOFMAN, Miss Lj. Asst.
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* BELICZA, M.
SUBJECT INDEX

The index has undergone a considerable simplification compared to that of vol. 14, but we believe its usefulness is not much reduced. All research subjects in the Directory of Names and Addresses are represented by at least one entry. The names of investigators refer back to that Directory.

Headings are printed in capitals. The list of headings has not changed much. New headings are listed on the next page. Headings generally come under one of the following categories:

1) Structures, e.g. organs, tissues, cells
2) Substances or classes of substances
3) Developmental stages, processes, and factors (including metamorphosis, regeneration, developmental genetics, reproduction, developmental pathology)
4) Techniques. Most of the common techniques that figured as headings in the index of vol. 14 are now omitted, they will be found as subheadings (see below).

Techniques still appearing as headings are: Chemical microanalysis, Culture, Immunochemistry, Irradiation, Rearing methods, Transplantation, UV Irradiation, Vital staining, X-Irradiation.

6) Some groups of organisms: Plants, Unicellular organisms.

Headings are extensively cross-referenced, but not usually from lower-order to higher-order categories.

Subheadings take the place of the former entries. Headings having less than ca. 10 names of investigators usually lack subheadings. The same research subject may be listed more than once under the same heading, e.g. under a structure and a technique.

Subheadings come under one of the following categories:

1) Entities subordinate to the heading
2) Entities related to the subject of the heading
3) Techniques, disciplines, and processes. These are often chosen from the list appearing on the next page; some of these terms are also used as headings — the resulting redundancy is unavoidable; it is considered rather an advantage because it provides several entrances to the same subject.
4) Developmental stages; see the list on the next page.
5) Links with other entities, such as "effect on . . . , effect of . . . , interaction with . . . ".

Animal and Plant Names

All the work on multicellular plants and on slime moulds 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.

Throughout the index Classes (and in some cases Phyla) are used exclusively. Exceptions are: the use of Homo for work on the human species, and the use of Orders under some general headings (Development (general), Development (larval), Development (post-embryonic, fetal), Embryology (general & descriptive), Embryology (physiological), Life cycles, Regeneration, Reproduction).

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.

Names of investigators

In the case of work carried out jointly by two or more investigators, all collaborators are listed in alphabetical order. Since initials of first names are omitted from the entries, it may sometimes be necessary to check two or more investigators of the same surname in the Directory of Names.
New Headings

Cell fusion
Environmental factors
Histoblast
Mycetome

Pesticides
Phylogenesis
Pressure

Subheadings often used under various headings

Techniques and disciplines

Autoradiography
Biochemistry (incl. biochemical techniques, molecular biology, etc.)
see also: Enzymes, Tracer study
Biophysics
Culture in vitro
Cytology
Descriptive study*
Endocrinology
Enzymes
Experimental study*
Function

General study*
Genetics
Histology
Histo- & cytochemistry
Immunology
Irradiation
Microcinematography
Morphology
Physiology
Theoretical study
Tracer study
Transplantation
Ultrastructure

Processes

Development*
Differentiation
Functional differentiation (maturation)
Growth
Induction
Involution (regression)
Malformations

Metamorphosis
Morphogenesis
Necrosis (cell death)
Organization (pattern formation)
Pathology
Regeneration
Teratogenesis

Stages

Early development
Egg
Embryo
Fetus
Larva
Neonate

Oocyte
Oogenesis
Placenta
Postnatal
Spermatogenesis

* These subheadings are also used when the available information was not detailed enough to use one of the more specific subheadings.
ABDOMINAL CAVITY
see Body cavities

ABNORMALITIES
see Anomalies (early development); Malformations
see also Teratogenesis

ACCESSORY SEX GLANDS
see Reproductive system

ACTIN
see Muscle(s)

ACTINOMYCIN
see also Antibiotics
Amphibia Ficq
Aves Diethelm
Insecta Maisonhaute
Mammalia Gerhardt
Polychaeta Mansueto

ACTIVATION
see Fertilization

ADAPTATION
see also Environmental factors; Phylogenesis
Amphibia Briegleb
Aves Zusman
Reptilia Zusman
Vertebrata Durand

ADHESIVE GLAND
see Gland(s)

ADIPOSE TISSUE(S)
see also Lipid(s)
Aves Dyer
Insecta Labour
Mammalia Barnard

ADRENAL GLAND
see also Cortisone; Insulin; Steroids
cortex
Mammalia Mitskevich
culture in vitro
Homo Bukulya
Mammalia Bukulya

differentiation
Mammalia Domac

effect of ACTH
Mammalia Domac

enzymes
Aves Accordi
experimenatal study
Mammalia Mitskevich

function
Amphibia Bukulya
Homo Bukulya
Mammalia Bukulya

histochemistry
Mammalia Domac

Klepac
Milkovic
Peruzovic
Verhofstad

relation with other endocrines
Mammalia Domac

Klepac
Milkovic
Peruzovic

medulla
Mammalia

Verhofstad

ultrastructure
Amphibia Pehlemann
Homo Bukulya
Mammalia Bukulya

AGE (AGING)
Mammalia Jones

Nematoda Brun

gamete
Mammalia Beaumont

Fraser

Poige

AGGREGATION
see Cell(s)

AIR BLADDER
see Lung(s)

AIR SACS
see Lung(s)

ALGAE
see Plant embryology & morphogenesis
see also Unicellular organisms

ALIMENTARY TRACT
see Digestive tract

ALKYLATING AGENTS
Aves Kocher
Mammalia Kocher

ALLANTOIS
see Embryonic membranes

AMINO ACID(S)
Echinoidea Toneby
Mammalia Choroszewski
aminobutyric acid
Mammalia Safanda
irradiation
Insecta Bluzat

nervous system
Aves Gremo

Marchisio

regeneration
Amphibia Anton
reproductive system
Insecta Chen
Wyl

teratogenesis
Aves Palén

AMITOSIS
see Mitosis

AMNION
see Embryonic membranes

ANDROGENESIS
see Genetics

ANESTHESIA

ANEUPLOIDY
see Heteroploidy

ANIMAL GRADIENT (animalization)
see Gradients
see also Embryology (experimental); Embryology (physiological)

ANOMALIES (early development)
see also Pathology; Teratogenesis
Amphibia Roussev
Diptera Scriba

ANOMALIES (Later development)
see Malformations
see also Teratogenesis

ANOXIA
see Respiration

ANTIBIOTICS
see also Actinomycin
cyoehalasin
Aves Jones

effect on sex differentiation
Amphibia Stagni
Vannini

hadacidin
Mammalia Milaire

puromycin
Aves Diethelm

Mollusca Boon

rifamycin
Amphibia Van Gansen

streptomycin
Insecta Duke

ANTIBODIES
see Immunology

ANTIGENS
see Immunology

ANTIMETABOLITES
Insecta Scharloo

effect on development
Insecta Lafont

Teleostei Peters

effect on embryo
Reptilia Vasse
immunochemistry
  Aves
  immunology
  Aves
  irradiation
  Aves
malformations
  Homo
  Mammalia
medulla oblongata
  Amphibia
  Aves
mesencephalon
  Amphibia
  Mammalia
morphology
  Amphibia
  Aves
  Homo
  Mammalia
mutant
  Mammalia
  neurons
  Mammalia
nuclei
  Mammalia
olfactory centre
  Vertebrata
optic centre & tracts
  Amphibia
physiology
  Aves
  prosencephalon
  Teleostei
regeneration
  Amphibia
  Mammalia
stem
  Mammalia
  subcommissural organ
  Teleostei
  Vertebrata
telencephalon
  Mammalia
  teratogenesis
  Aves

thalamus
  Mammalia
  Rokyt
  Zählnava
transplantation
  Teleostei
ultrastructure
  Aves

Mammalia
  Meller
  Roda
  Sisto
  Eurenius
  Jarškár
  Kaufmann
  Lierse
  Meller
  Pouwels
  Oksche
Teleostei
  Vertebrata
vascularization
  Homo
  Mammalia

BRANCHIAL REGION
see also Pharynx
  Amniota
  Slipka
  Homo
  Slipka

BRISTLE
see Integument

BURSA OF FABRICIUS
see Lymphatic system

CAPILLARIES
see Vascular system

CAPSULE
see Egg

CARAPACE
see Skin

CARBOHYDRATE(S)
cell surface
  Aves
  embryo
  Amphibia
  Van Gansen
  glucose
  Mammalia
  Vertebrata
  Raffin
  Sisto
  Marty
  Raffin
  Chaconie
  Clarambault
  Gaz

Mammalia
  Teleostei

physiology
  Aves
  prosencephalon
  Teleostei
regeneration
  Amphibia
  Mammalia
stem
  Mammalia
  subcommissural organ
  Teleostei
  Vertebrata
telencephalon
  Mammalia
  teratogenesis
  Aves

mucin
  Gastropoda
  Mammalia
  d’Ancona
mucopolysaccharides
  Amphibia
  Hinchliffe
  Höglund
  Alfei
  Cuming
  Hinchliffe
  Kemp
  Robert
  Vakaet
  Immers
  Giannetti

Mammalia
  Denker
  Larsson
  Linde
  Robert
  Svejcar
  Watts

nervous system
  Aves
  oocyte
  Amphibia
  polysaccharides
  Polychaeta
teratogenesis
  Mammalia
  Vertebrata

skin
  Homo
  Giannetti

CARCINOGENETIC AGENTS
see also Tumour(s)

CARTILAGE
biochemistry
  Aves
  Mammalia
chondrocyte
  Mammalia
chondrification
  Mammalia
chondrogenesis
  Aves
Mammalia
  culture in vitro
  enzymes
  Aves
general study
  Vertebrata
histogenesis
  Homo
  Mammalia
induction
  Aves
  nose
  Mammalia
pre-cartilage
  Aves
regeneration
  Mammalia
teratogenesis
  Homo
ultrastructure
  Aves
  Mammalia

CASTE DETERMINATION
see Polymorphism

CELL(S)
see also Unicellular organisms

adhesion
  Edwards

131
<table>
<thead>
<tr>
<th>Aves</th>
<th>Buultjens</th>
<th>Curtis</th>
<th>Evans</th>
<th>Hornby</th>
<th>Jones</th>
<th>Kemp</th>
<th>Spires</th>
<th>Jones</th>
<th>Curtis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammalia</td>
<td>Middleton</td>
<td>Parsons</td>
<td>Salamatina</td>
<td>Tum'nishvili</td>
<td>Viza</td>
<td>Wechsler</td>
<td>Weiss</td>
<td>Nikitin</td>
<td></td>
</tr>
<tr>
<td>Porifera</td>
<td>cycle</td>
<td>Amphibia</td>
<td>Anton</td>
<td>Laat</td>
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migration: Amphibia | Gipouloux | Sala | Backhouse | Bellairs | Le Douarin | Lenique | Hinrichsen | Marty |
movement: Aves | Lefford | Middleton | Moores | Jones | Dyson | Middleton |
recognition: Aves | Evans | Garrod | Garcia | Gallien | Govaer | Jones | Robert |
mammalia surface: Lakshmi | Sherbet | De Silva | Curtis | Evans | Lesseps | Moores | Monroy | Pritchard |

Echinioidea | Mammalia | transformation | Anura |

ultrastructure: Amphibia | De Silva | Litvac | Echinioidea | Lundgren |

CELL DEATH see Cell(s)

CELL DIVISION see Cell(s); Mitosis

CELL FUSION see also Cell heredity

Aves | Moore | Homo | Gianelli | Moore | Halfer | Moore | Tarkowski | Zeilmaker |

CELL HEREDITY see also Cell fusion

Insecta | Lawrence | Morata | Mosna | Ripoll | Santamaria | Wyss |

CELL-LINEAGE see Embryology (experimental)

CELL RENEWAL see Regeneration (physiological)
biochemistry
Amphibia
Ascidia
Insecta
Mammalia
Polychaeta

biophysics
Amphibia

Echinoidea
Mammalia
blastocoele
Mammalia

blastomere

Gastropoda
Mammalia

blastula

Echinoidea
cell surface
Amphibia
Ascidia
Echinoidea
Mollusca
culture in vitro
Gastropoda
Mammalia

cytochemistry
Amphibia
cytokinesis
Amphibia

Crustacea
cyttoplasm
Mollusca
differentiation
Mammalia
Mollusca
dynamics
Echinoidea
Lamellibranchiata
effect of chemicals
Mammalia
endocrinology
Mammalia

experimental study
Amphibia

Gastropoda
Mammalia
histochemistry
Mammalia

induction
Echinoidea
irradiation
Mollusca
microcinematography
Amphibia

morphology
Mammalia

Monro
Monro
Wegener
Petzoldt
apr Gwynn

Lefebvre
Bereiter
Gerhardt

Bentyn
Munhard

Verdonk
Gerhardt
Moor
Zeilmaker

Vittorelli
De Silva
O'Dell
Dohmen

Verdonk
Breed
Snow
Tarkowski
Witkowska
Wroblewska

Dettlauff
Lefebvre
Dettlauff
Markova

Ubbels
Bluemink
Signoret
Fautrez

Dohmen

Snow
Geilenkirchen

Vasseltzky

Mammalia
Mammalia
Mammalia
Mammalia

Beier
Kühnel

Lefresne
Selman
Sentein
Jura
Malesa

Denker

Brachet

Labordus
Boterenbrood
Hara

Kühnel

Monro
Monro
Wegener
Petzoldt

Insecta
Faccio
Gibson
Jacob

Mammalia
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karyotype
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Mammalia
lampbrush
Amphibia

Insecta
meiosis
Amphibia
polytene
Insecta

puffs
Insecta

structure

teratogenesis
Mammalia
ultrastructure
Insecta
X-inactivation
Mammalia

Y-chromosome
Insecta

Glanzner
Hess
Johannisson
Schäfer
Schwochau

CILIA
Amphibia
Echinoidea
Ectoprocta
Endoprocta

CIRCULATION
see also Vascular system,
specific organs, etc.

Aves
Paxieder
Seidl
Mammalia
Nie

CLEAVAGE ( & morula,
brastula)
see also Blastocyst,
Blastoderm; Blastodisc

Aves
Mammalia
abnormalities
Mollusca
autoradiography
Mollusca

morula
Mammalia

pattern
Echinoidea

spiral
Gastropoda
teratogenesis
Mammalia
ultrastructure
Amphibia

Mollusca

Polychaeta
ap Gwynn

Gottschewski
Bluemink
Selman
Dohmen
Wal

ap Gwynn

CLOACA
see Urogenital system

CLONE(S)
see Asexual reproduction;
Cell(s); Cell heredity

COELOM
see Body cavities

COLCHICINE
see Antimitotic agents

COLLAGEN
Ascidia
Aves
Echinoidea
Mammalia

Patricolo
Dandricu
Robert
Toneby
Hadjiski
Robert
Watts
Porifera
Robert

COLOUR PATTERNS
see Chromatophore(s);
Pigment(ation)

COMPETENCE (inductive)
Amphibia

Chibon
Grunz
Johnen
Kieny

CONGENITAL MALFORMA-
TIONS
see Malformations

CONNECTIVE TISSUE
see also Fibroblast(s)

Homo
Dylevsky
Mammalia
Csaba
Kostovic
Svajger

Turbellaria
Petersen

CORPUS ALLATUM
Insecta

Pflugfelder

CORPUS LUTEUM
Mammalia

Colombo
Hay

CORTEX
see Cell(s); Egg(s)

CORTISONE
see also Steroids
Amphibia
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theoretical study

Amphibia
ultrastructure
Diptera

DEVELOPMENT (larval) see also Polymorphism (insects)
Amphibia
Anthozoa
Ascidia
Brachiopoda
Bryozoa
Chordosteii
Cirripedia
Copepoda
Echinoidea
Entoprocta
Gastropoda
Hymenoptera
Insecta
Nemertea
Pogonophora
Polychaeta
Scyphozoa
comparative study
Invertebrata

histology
Coelomata

DEVELOPMENT (post-embryonic, fetal)
Acarina
Arachnida
Chondrostei
Homo
Insecta
Myriapoda
Onychophora

DEVELOPMENTAL GENETICS see Genetics

DEVELOPMENTAL PATHOLOGY see Pathology

DEVELOPMENTAL PHYSIOLOGY see Embryology (experimental); Embryology (physiological) see also Development

DIAPAUSE
Insecta
Mammalia
Oligochaeta

DIAPHRAGM see Body cavities

DIET see Nutrition

DIFFERENTIATION see also Dedifferentiation; Metaplasia; specific organs, etc.
Hydrozoa
Amphibia
biochemistry
Amphibia

Aves
Echinoidea
Gastropoda
Insecta
Mammalia
Porifera
capacity
Amphibia
Aves
Mammalia
Reptilia
cell kinetics
Aves
Mammalia
cellular
Amphibia

Crustacea
Mammalia

ectoderm
Amphibia
embryo
Mammalia
embryonic membranes
Mammalia
endoctrine
Insecta
endothelium
Mammalia
experimental study
Insecta
Mammalia

genetics
Amphibia
Mammalia
hepatocyte
Aves

histoblast
Insecta
histo- & cytchemistry
Amphibia
mesenchyme
Ascidiacea
Mammalia
mesoderm
Aves
metabolism
Amphibia
microcinematography
Mammalia
mutant
Insecta
neoblasts
Turbellaria
pathology
Aves
Mammalia
potency
Aves
Hydrozoa
Insecta
primordia
Mammalia

regeneration
Amphibia
relation to cell division
Amphibia
Mollusca

Crustacea
Mammalia

Dohle
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Levav
Skebek
Svager
Engländer
Mulnard
Mulnard
Bulière
Schouten
Weideli
Gerhardt
Lohmann
Konyukhov
Houssaint
Le Douarin
Bautz
Lafont
Peters
Geilenkirchen
Sala
Ballard
Mauger
Faulhaber
Dapena
Sauzin
Weiss
Veini
Schmid
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Polack
Zimmermann
Forsberg
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Chandebois
Pasquin
Regulation
Mammalia

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Mammalia Moor
Amphibia
germinal vesicle Tarkowski
Insecta Zeilmaker
genetics
Polychaeta Fischer
germinal cytoplasm Amphi Zolowska
Chondrostei Blutz
Amphibia
Aisenstadt Dettlaff
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Aisenstadt Skoblina
Chondrostei
Dettlaff
skoblina
grey crescent
gynogenesis
Chondrostei Vassetzky
Teleostei Apekin
irradiation
Insecta Zissler
Mammalia Beaumont
maturation
Amphibia Aisenstadt
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Dettlaff
Asteroidea Faleeva
Echinoderm Mollusca
Crustacea Stuhl
Mammalia
Fautrez
Mammalia
Alexandre
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Hay
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Szybek
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Wegmann
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Teleostei Faleeva
Teleostei Gureeva
Teleostei Kulikova
Teleostei Skoblina
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Echinoderm Vassetzky
Homo Laguchev
Lamellibr. Mammalia Vassetzky
Mammalia Polani
Nematoda Polani
metabolism Mammalia Zeilmaker
microcinematography Insecta Bruhns
morphology Insecta Bruhns
Insecta Maza
Insecta Went
mucin Gastropoda Biliett
D'Ancona
Mammalia van Gansen
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relation to follicle Mammalia Szybek
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Crustacea Hagenmaier
Crustacea Gerzeli
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Mammalia Jirsova
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Mammalia Marsk
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Mammalia Zeilmaker
ultrastructure Amphi Biliett
ultrastructure Bluemink
ultrastructure De Silva
ultrastructure Hurricane
ultrastructure Van Gansen
ultrastructure La Spina
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ultrastructure Ctenophora De Leo
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ultrastructure Steger
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ultrastructure Steger
ultrastructure Polychaeta De Leo
ultrastructure Dhainaut
ultrastructure Villa
ultrastructure Teleostei Biliett
ultrastructure Chambolle
ultrastructure Teleostei Marinelli
weight
Teleostei Kamler
EGG MEMBRANES
see Egg(s); Embryonic membranes
EGG SHELL
see Egg(s)
EMBRYO-MATERNAL RELATIONSHIPS
see also Placenta barrier
Rodentia Merker
blastocyst Mammalia LeLaren
endocrinology Mammalia Hay
humoral connections Mammalia Molotkova
Mammalia Murashova
Mammalia Orlova
Mammalia Verbicky
Mammalia Vyazov
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Mammalia Hancock
Mammalia McGovern
immunology Homo Molotkova
Mammalia Verbicky
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| EXTREMITIES | see Limb(s): Wing(s) |

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<td>malformations</td>
<td>Lopashov, Sologub</td>
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<td>Mammalia</td>
<td>Platonov, Brahma, Campbell, Tramu</td>
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<td>Lopashov, Sologub</td>
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</tr>
<tr>
<td>Amphibia regeneration</td>
<td>Platonov, Brahma, Campbell, Tramu</td>
</tr>
<tr>
<td>FACE</td>
<td>see Head</td>
</tr>
<tr>
<td>FALLOPIAN TUBE</td>
<td>see Oviduct</td>
</tr>
<tr>
<td>FAT</td>
<td>see Adipose tissues; Lipid(s)</td>
</tr>
<tr>
<td>FAT BODY</td>
<td>see Adipose tissues</td>
</tr>
<tr>
<td>FATE MAPS</td>
<td>see Embryology (experimental)</td>
</tr>
<tr>
<td>FATTY ACIDS</td>
<td>see Lipid(s)</td>
</tr>
<tr>
<td>FEATHER(S)</td>
<td>Aves, Dhouailly, Friant, Groenendijk, Kieny, Mauger, Novel, Senげl</td>
</tr>
<tr>
<td>FECUNDITY</td>
<td>see Fertility</td>
</tr>
<tr>
<td>FERTILITY (&amp; sterility)</td>
<td>Insecta, Astaurov, Papillon, Zeilmaker</td>
</tr>
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<td>FERTILIZATION</td>
<td>Acari, Feiertag, Pijnaker, Villa, Pijnaker, Adams, Kassner, Modlinski</td>
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<tr>
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<td>Ginsburg, Haget, Went</td>
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<td>Experimental study, Mammalia, Polge</td>
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<td>Metaplasmia</td>
<td>Histchemistry, Mammalia, Polge</td>
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<tr>
<td>Teleostei</td>
<td>in vitro, Homo, Mammalia, Baker, Baker, Baker, Fraser, Polge</td>
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<td>Platonov, Brahma, Campbell, Tramu</td>
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<td>FACE</td>
<td>see Head</td>
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<tr>
<td>FALLOPIAN TUBE</td>
<td>see Oviduct</td>
</tr>
<tr>
<td>FAT</td>
<td>see Adipose tissues; Lipid(s)</td>
</tr>
<tr>
<td>FAT BODY</td>
<td>see Adipose tissues</td>
</tr>
<tr>
<td>FATE MAPS</td>
<td>see Embryology (experimental)</td>
</tr>
<tr>
<td>FATTY ACIDS</td>
<td>see Lipid(s)</td>
</tr>
<tr>
<td>Animal Group</td>
<td>Common Name</td>
</tr>
<tr>
<td>--------------</td>
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<td>Amphibia</td>
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<td></td>
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<td>Lovtrup</td>
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<td>Teleostei</td>
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</tbody>
</table>

**GENE(S)**

- see also Genetics; Mutants
- activation
- Insecta
  - Helmsing
  - Leenders
  - Harrison
- Mammalia
  - Chaumeau
  - Collenot
  - Vahs
- Echinoderm
  - Aronschtsam
  - Verdonk
  - Ashburner
  - Berendes
  - Beyse
  - Bosshard
- Century
  - Egelhaaf
  - Leibenguth
  - Lezzi
  - Müller
  - Robert
  - Seydewitz
- Mammalia
  - Harrison
  - Lezzi
  - Moore
- Mollusca
  - Aronschtsam
  - Fischer
  - Vahs
- Polychaeta
- Teleostei
- amplification
  - Labrouisse
  - Lohmann
  - Russo-Caia
- Insecta
  - Sang
- effect on development
  - Insecta
    - Sang
  - lethal
  - Insecta
    - Zueger
- Aphephasia
  - Aphephasia
  - Physiologia
  - Diptera
- regulation
  - Rostand
- transcription
  - Guusken
  - Crippa
  - Guusken
- tumour
  - Insecta
    - Sang

**GENETICS (developmental)**

- see also specific aspects; Cell heredity; Chromosomes; Genes; Hybrids; Mutants; Nucleus etc.
- Homo
  - Testa
  - mosaicism
  - Boucaut
  - Insecta
  - Janning
  - Mammalia
  - Degenhardt
  - Deol
- nervous system
  - Mammalia
  - Nematoda
  - Brenner
  - parthenogenesis
  - Insecta
  - Astaurov
  - paternal genes
  - Echinoderm
  - O'Dell
  - pattern formation
  - Insecta
  - Kroeger
  - phenogenesis
  - Mammalia
  - Sanyal
  - proliferation
  - Mammalia
  - Konyukhov
  - Sazhina
- protein
  - Insecta
  - Beetschen
  - Gasser
- quantitative characters
  - Insecta
  - Schouten
- regulation
  - Insecta
  - Glätzer
  - Hess
  - Nöthiger
- selection
  - Insecta
  - Vreezen
- sexual development
  - Crustacea
  - Legrand
  - Insecta
  - Nöthiger
- species specificity
  - Mammalia
  - Namur
- vertebral column
  - Mammalia
  - Théler

**GENITAL TRACT**

- see also Reproductive system; Urogenital system
- Amphibia
  - Gabrion
  - Aves
  - Lutz
  - Crustacea
  - De Maeyer
  - Mammalia
  - Blom
  - Forsberg
  - Glenister
  - Gulamhuscin
  - Théry
  - Vilanova
  - Zayer
  - Reptilia
  - Raynaud

**GENITALIA**

- see Reproductive system

**GERM CELLS (general)**

- see also Gametes
  - Aves
  - Dubois

**AGE**

- Mammalia
  - Komar
- autoradiography
  - Mammalia
  - Weakly
- culture in vitro
  - Mammalia
  - Challoner
- cytochemistry
  - Mammalia
  - Weakly
- cytology
  - Insecta
  - Panelius
  - Mammalia
  - Challoner
- descriptive study
  - Reptilia
  - Hubert
GESTATION  see Pregnancy

GILL(S)

GLAND(S) (endocrine) see specific endocrine glands; Endocrine organs

GLAND(S) (exocrine) see also specific glands; specific organs
culture in vitro
Aves  Mammalia

GERM CELLS (primordial) biochemistry
Insecta  culture in vitro
Insecta
cytology
Insecta
determination
Insecta
differentiation
Insecta
general study
Amphibia
Aves  Mammalia

genetics
Insecta

irradiation
Insecta

migration
Insecta

origin
Amphibia
Aves
Insecta
Polychaeta
Teleostei

relation with somatic cells
Aves

GERM LAYERS see Embryology (experimental); Embryology (general & descriptive) see also specific derivatives

GERMINAL VESICLE  see Nucleus

GLUCOSE  see Carbohydrate(s)

GLYCOGEN  see Carbohydrate(s)

GONAD(S) see also Ovary; Testis

asymmetry
Aves
biochemistry
Aves
biophysics
Insecta
chimaera
Mammalia
comparative study
Mammalia

culture in vitro
Amphibia

development
Aves
Kopp
Mirre
Stahl
Mammalia
Kopp
Mirre
Stahl

Teleostei

differentiation
Aves
Gasc
Ozdzenski
Rogulski
Wolff
Buehr
Ozdzenski
Rogulski

endocrinology
Aves

experimental study
Amphibia

growth
Aves

hybrids
Amphibia

interstitial cells
Aves

irradiation
Aves

germfphrodites
Gastropoda

sterile
Anura

Insecta
<table>
<thead>
<tr>
<th>Term</th>
<th>Authors/Sources</th>
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<tbody>
<tr>
<td>induction</td>
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<td>Aves: Alvarez, Aranega, Fischer</td>
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<td>Homo: Alvarez, Klein, Krediet, Nie, Wensing</td>
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<td>morphogenesis</td>
<td>Aves: Aranega, Dbalý</td>
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<td>morphology</td>
<td>Mammalia: Maliovanova, Polezhaev, Sadokova</td>
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<td>necrosis</td>
<td>Aves: Hurle, Pexieder</td>
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<tr>
<td>Homo Mammalia</td>
<td>Mammalia: Pexieder</td>
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<tr>
<td>physiology</td>
<td>Aves: Laane, Los, Pexieder</td>
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<td>Homo Mammalia</td>
<td>Mammalia: Laane, Los, Pexieder</td>
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<td>pulmonary vena</td>
<td>Homo: Klein, Maliovanova, Polezhaev, Sadokova</td>
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<td>temperature</td>
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<td>Aves: Roest, Navaratnam, Laane, Los, Pexieder</td>
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<td>Mammalia: Hadijiski, Laane, Los, Roest</td>
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<td>Amphibia: Charles, Destré, Ficq, Török, Jelnik, Echinoidea, Cognetti, Insecta, Robert, Mammalia, Jelnik, Török, Turbellaria, Török</td>
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<td>HISTORY OF EMBRYOLOGY</td>
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<td>HOMEOESIS</td>
<td>see Mutants, see also Regeneration (traumatic)</td>
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<td>HOMOGENATES</td>
<td>see Tissue(s)</td>
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<td>see Tissue(s)</td>
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<td>HORMONE(S)</td>
<td>see also specific hormones; Neurotransmitters; Steroids</td>
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<td>effect on biochemical processes</td>
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<td>effect on bone</td>
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<td>Aves: Lakshmi, Sherbet</td>
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<td>Mammalia: Crustacea, Zaffagnini, Mammalia: Kratochwil, Smith</td>
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<td>effect on early development</td>
<td>Homo: Baker</td>
</tr>
</tbody>
</table>

147
interact, with other endocrines
Mammalia Lombard
metamorphosis Amphibia Gabrion
neuro-hypophysis Mammalia Xavier
physiology Teleostei Olivierieu
transplantation Teleostei Olivierieu
ultrastructure Amphibia Andrieux
Homo Mammalia Hurlemann
vascularization Mammalia Eurenius

HYPOXIA
see Respiration

IMAGINAL DISCS autoradiography Insecta Vijverberg
biochemistry Insecta Lafont
Insecta Mandaron
Insecta Simpson
Insecta Smith
Insecta Tarroux
Insecta Vijverberg
culture Insecta Garcia
Insecta in vitro Insecta Mandaron
determination Insecta Dümbendorfer
Insecta Gheinr
Insecta Hadorn
Insecta Holden
Insecta Ivanov
Insecta Mglinetz
Insecta Schoeller
Insecta Ziller
development Insecta Robertson
Insecta Waddington
Insecta Ziller
differentiation Insecta Dewes
Insecta Gehring
Insecta Hadorn
Insecta Holden
Insecta Lafont
Insecta Mandaron
endocrinology Insecta Mandaron
Insecta Mauchamp
Insecta Vijverberg
enzymes Insecta Lafont
experimental study Insecta Forsskahl
Insecta Garcia
Insecta Forsskahl
genetics Insecta Garcia
Insecta Morata
Insecta Ripoll
Insecta Santamarina

histochemistry Insecta Sprey
Insecta Vijverberg
irradiation Insecta Vijverberg
mitoses Insecta Vijverberg
necrosis Insecta Sprey
pattern formation Insecta Ouwencel
Insecta Sprey
Insecta Ursprung
transdetermination Insecta Hadorn
Insecta Simpson
ultrastructure Insecta Sprey

IMMUNOCHEMISTRY
Amphibia Brahama
Campbell Clayton
Stanisstreet Truman
Barabanov Campbell Clayton
Doorenmaalen Locci
Mikhylov Nord
Truman Charniaux
Croisille Crustacea
Jugena
Meyn
Sevaljic
Adinolfi
Doorenmaalen
Bertini
Comoglio
Prat
Mollusca
Arnolds
Oligochaeta
Marcel

IMMUNOLOGY (developm.)
Mammalia Forsberg
Mammalia Barson
Mammalia Adinolfi
Mammalia Barron
Mammalia Morris
Mammalia Clark
Mammalia Mucha
Mammalia Palecek
Mammalia Romanovsky
Mammalia Sladecek
Mammalia Chanturishvili
Mammalia Kankava
Mammalia Kurulashvili
Mammalia Mikhylov
Mammalia Vyazov
Mammalia O’Dell
Mammalia Adinolfi
Mammalia Viza
Mammalia Forsberg
Mammalia Viza
Mammalia Vyazov
Mammalia Echinoida
Mammalia Homo
Mammalia Mammalia
Mammalia Mammalia
Mammalia Antiserum
Mammalia Taban
compatibility
Hydrozoa Gallien
Goyaere
complement Homo Adinolfi
Homo Sladecek
Homo Rostedt
Homo McLean
Homo effect of temperature
Aves Preda
Aves
Homo embryomaternale relations
Mammalia Molotkova
Mammalia Verbicky
Mammalia Zimmermann
enzymes Aves Croisille
Aves Campbell
Aves Clayton
Aves Truman
eye Aves Platonov
Aves Doorenmaalen
Aves Starre
Aves Doorenmaalen
Homo Aves Horton
Mammalia Aves Babayeva
Mammalia Aves Panteloulis
Mammalia Aves Deuchar
Mammalia Aves Jankovic
Mammalia Aves Lukic
Mammalia Aves Solomon
Mammalia Aves
Mammalia Aves
Mammalia immunomorphology Aves Preda
kidney Aves Croisille
Aves Amphi
mammary gland Homo Karlsson
Mammalia Karlsson
Mammalia maturation Amphi
Mammalia Manning
Mammalia neuroendocrinology Aves Jankovic
Mammalia Lukic
Mammalia Jankovic
Mammalia Lukic
Mammalia oocyte maturation Teleostei Apekin
Mammalia pathology Mammalia David
Mammalia protein Homo Karlsson
Mammalia reproduction Mammalia Billington
Mammalia Homo Billington
Mammalia teratogenesis Aves Barson
tolerance Aves Clark
Aves Taban

149
<p>| LITHIUM | Amphibia | Englander |
| LIVER | see also Regeneration (traum.) autoradiography | Mammalia biochemistry Aves | Lombard |
| culture in vitro | Aves | Bodo | Houssaint |
| Mammalia | Croizat | Jacquot | Malpoix |
| development | Mammalia differentiation Aves | Borowski | LeDouarin |
| Mammalia endocrinology | Malpoix | Vetterlein |
| enzymes | Amphibia | Charles | Preda |
| Mammalia | Malpoix | Vetterlein |
| experimental study | Aves | Hoys | Harrison |
| Mammalia | Houssaint | LeDouarin |
| hematopoiesis | Homo | Malpoix | Orlova |
| Mammalia | Hoyes | Harrison |
| hepatocyte | Mammalia | Jacquot | Nagel |
| hemotoma | Mammalia | Nadal |
| Mammmalia histochemistry | Mammalia irradiation | Wijk |
| Ambiphy Aves | Beaumont |
| physiology Aves protein | Karlsson |
| Homo | Karlsson |
| Mammalia regeneration | Craciun |
| Mammalia transplantation | Seller |
| Mammalia ultrastructure | Beaumont |
| Amphibia Aves | Lesseps |
| Mammalia | Billat |
| Mammalia | Jacquot |
| Locomotion see Behaviour |
| Longevity | LUNG(S) (&amp; air sacs, swim bladder) | Branchial region | Anniota |
| | | Homo | Slipka |
| | | Homo cardiovascular system | Slipka |
| | | Homo | Klein |
| | | chromosome aberrations | Tarkowski |
| | | Mammalia | Witkowska |
| | | congenital | Wroblewska |
| | | Homo | Kajii |
| | | culture in vitro | Källén |
| | | Mammalia cytogenetics | Wrib |
| | | Homo digestive tract | Kajii |
| | | Mammalia dysraphia | Marsk |
| | | Aves | Barson |
| | | ear | Morriss |
| | | Mammalia ectrodactyly | Rostand |
| | | Mammalia embryonic death | Bishop |
| | | Mammalia genetics | Kleinbrechert |
| | | heart | Alvarez |
| | | Homo | Ne |
| | | Mammalia general study | Wensing |
| | | Homo | history |
| | | Mammalia | Guira |
| | | Homo | Kleinebrechert |
| | | heart | intersexuality |
| | | Mammalia | Mammalia |
| | | limb | Bishop |
| | | Aves | Salzgeber |
| | | Homo | Lenz |
| | | Mammalia morphology | Guira |
| | | Homo | Pospil |
| | | Mammalia muscle | Giroud |
| | | Mammalia ovary | Girard |
| | | Mammalia polydactyly | Rostand |
| | | Amphibia regeneration | Berndorfer |
| | | Homo | situs inversus |
| | | Amphibia thoracopagus | Woellwarth |
| | | Homo | Oakeshott |
| | | twins | Homo |
| | | Mammalia urogenital system | Klein |
| | | Mammalia vascular system | Gabriel |
| | | Mammalia | Bugge |
| | | vertebral column | Knudsen |
| | | Aves | Strudel |</p>
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALPIGHIAN TUBULES</td>
<td>see Excretory system</td>
</tr>
<tr>
<td>MAMMARY GLAND</td>
<td>see Gland(s) (exocrine)</td>
</tr>
<tr>
<td>MAST CELLS</td>
<td>see Bone marrow; Connective tissue</td>
</tr>
<tr>
<td>MATERNAL EFFECTS</td>
<td>see Genetics</td>
</tr>
<tr>
<td>MATERNAL INHERITANCE</td>
<td>see Genetics</td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td>see Theoretical biology</td>
</tr>
<tr>
<td>MATURATION</td>
<td>see Egg(s)</td>
</tr>
<tr>
<td>MEIOSIS</td>
<td>see Egg(s)</td>
</tr>
<tr>
<td></td>
<td>see also Oogenesis; Spermatogenesis</td>
</tr>
<tr>
<td>MELANIN</td>
<td>see Pigmentation; see also Melanophore(s)</td>
</tr>
<tr>
<td>MELANOPHORE(S)</td>
<td>see also Neural crest; Pigment; see also Melanophore(s)</td>
</tr>
<tr>
<td>MERISTEMS</td>
<td>see Plant embryology &amp; morphogenesis</td>
</tr>
<tr>
<td>MEROGONES</td>
<td>see Genetics; Hybrid(s)</td>
</tr>
<tr>
<td>MESENCHYME</td>
<td>Ascidiacea; Aves; Mammalia; Porifera</td>
</tr>
<tr>
<td>MESODERM</td>
<td>see Embryology (experimental); see Embryology (general &amp; descriptive)</td>
</tr>
<tr>
<td>MESONEPHROS</td>
<td>see Kidney(s)</td>
</tr>
<tr>
<td>METABOLISM (general)</td>
<td>see also Energy; Respiration</td>
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<td>Oligochaeta</td>
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<td>Aves; Mammalia; egg</td>
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METHODS (& equipment)  
see also Rearing methods

MINERALS  
see also ions; specific minerals  
Ca  
Aves  Heeresche  Nijweide  
Mammalia  Lutwak  Nijweide

Co  
Mammalia  Biagioni

heavy  
Animalia  D’Amelio

Sr  
Aves  Nijweide  Mammalia  Nijweide  Zn  
Mammalia  Lutwak

MITOCHONDRIA  
see Subcellular components

MITOSIS  
see also Antimitotic agents; Cell(s)-division; Cleavage; Growth factors  
amitosis  
Amphibia  Pehlemann  Homo  Pehlemann

apparatus  
Polychaeta  ap Gwynn

autodigestion  
Amphibia  Brugal

binucleate cells  
Aves  Barasa  
biochemistry  
Amphibia  Rott  Polychaeta  ap Gwynn  Teleostei  Rott

chalone  
Amphibia  Brugal

chromosomes  
Amphibia  Nardi

control  
Amphibia  Balls  Monnickendam

correlation with cell death  
Mammalia  Orlova  embryonic induction  
Amphibia  Lowery  endocrinology  
Insecta  Bart  Defooscez

genetics  
Mammalia  Konyukhov  Sazhina

imaginal disc  
Insecta  Vijverberg

kinetics  
Amphibia  Chibon  multiplication rate  
Aves  Salamatina  Tumanishvili  
Mammalia  Salamatina  Tumanishvili

nervous system  
Amphibia  Baffoni  proliferation  
Amphibia  Brugal  Chibon  
Aves  Amprino

Mammalia  Bulmer  Konyukhov  Peel  Sazhina  
regeneration  
Amphibia  Mammalia  Baffoni  Tumanishvili

regulation  
Echinoidea  Czhak  role of various factors  
Aves  Barasa  theoretical study  
tooth  
Mammalia  Karcher  Ruch  
ultrastructure  
Amphibia  Homo  Pehlemann  Pehlemann

MONSTROSITIES  
see Malformations

MORPHOGENESIS  
see also Culture; Development; Embryology; Plant embryology & morphogenesis; Unicellular organisms  
Insecta  Bart  Porifera  Boury

activity  
Insecta  Bohn

agents  
Oligochaeta  Marcel  asexual reproduction  
Hydrozoa  Polteva  autoradiography  
Amphibia  Ficq  Aves  Steding

biochemistry  
Echinoidea  Gezelius  Turbellaria  Török

biophysics  
Amphibia  Stefanelli  Teleostei

cellular basis  
Amphibia  Steno  Porifera  Teleostei

connective tissue  
Mammalia  Kostovic  Sjavger

control  
Mammalia  Konyukhov  Sazhina  early stages  
Aves  Galera  Lenicine  Nicolet  Boon

Mollusca  endocrinology  
Aves  Lakshmi  Sherbet

epiphenis  
Insecta  Bohn  experimental study  
Coelenterata  Belousov  Ostroumova

Echinoidea  Belousov  Ostroumova  Yardin

Mammalia  genetics  
Insecta  Egelhaaf

histochemistry  
Aves  Caruso  irradiation  
Mollusca  Mammalia  Belousov  Aves

Movements  
Amphibia

MORTALITY (embryonic, fetal)  
see Pathology

MORULA  
see Cleavage

MOSAICISM (genetical)  
see Genetics

MOTILITY  
see Behaviour; Cell(s)-movement; Morphogenesis

MOTOR END PLATES  
see Nerve(s)

MOULT(ING)  
Crustacea  Martin  Mocquard  Williamson

Insecta  Zaffagnini  Coulon  Fontana  Shrenna

MOUTH  
see also Pharynx  
cleft lip & palate  
Homo  Harris  Limborgh  Luke  Pourtois  Saxén  Wilde
Mammalia
Dostal
Harris
Morgan
Pourtois
Wilde
general study
Amphibia
Capuron
Cusimano
MUCOPOLYSACCHARIDES
see Carbohydrate(s)
MULLERIAN DUCT
Aves
Lutz
Pietu
Raynaud
Forsberg
Mammlalia
Dostal
Harris
Morgan
Pourtois
Wilde
MULTIPLE BIRTHS
see Twins
MUSCLE(S)
autoradiography
Mammalia
biochemistry
Aves
Levis
Homo
John
Mammalia
Jones
Levis
biophysics
Mammalia
comparative study
Amphibia
culture in vitro
Aves
Levis
Homo
John
Mammalia
Jones
Levis
cytology
Aves
Knize
Mammalia
Knize
Mammalia
Knize
Mammalia
Knize
Knizetova
development
Amphibia
Burgess
Grim
Kielbowna
Muntz
Aves
Cole
Gmuer
Grim
Thorogood
Wallmann
Homo
Cihak
Dylewski
Grim
Mammalia
Cole
Trnková
differentiation
Aves
Levis
Mammalia
Jones
Levis
dystrophic
Aves
Moore
Homo
Moore
Mammalia
Moore
eye
Aves
function
Aves
Mammalia
growth
Aves
Mammalia
histochemistry
Amphibia
Mammalia
involution
Amphibia
malformations
Mammalia
myoblast
Aves
Mammalia
Homo
metamorphosis
Insecta
neurotransmitters
Aves
regeneration
Mammalia
skeletal
Homo
synapse
Aves
Mammalia
teratogenesis
Mammalia
Mullerian
tissue relations
Aves
ultrastructure
Amphibia
Aves
Homo
Insecta
Mammalia
enzymes
Insecta
eye
Mammalia
Knize
Knizetova
Knize
Knizetova
Message
Message
Muntz
Giroud
McKenzie
Moore
Moore
Moore
Moore
Moore
Beinbrech
Giacobini
Cullen
Strauss
Filogamo
Giacobini
Sisto
Filogamo
Noack
McKenzie
Muntz
Bleichschmidt
Moore
Sisto
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Moore
Beinbrech
Bleichschmidt
Cullen
Jones
Moore
Urea
Insecta
Mammalia
Kubli
Fischer
Ginter
Ivanov
Mglitzet
Ouwenel
Sang
Ferrus
Ripoll
Sang
Scriba
limb
Aves
Flint
Kuhl
Wilby
Degenhardt
Ede
Ede
Hagström
Hagström
Johnson
Deol
Rostand
Kocher
Santamaria
Beetschen
Konyukhov
Malinina
Paschin
Backhouse
Bellairs
Ede
Backhouse
Bellairs
Ede
Perry
Johnson
Holt
MUTAGENIC AGENTS
MUTANT(S)
see also Gene(s); Phenocopies
Mammalia
Flint
Mammalia
Lyon
auditory organ
Mammalia
Deol
biochemistry
Insecta
Kubli
blood
Mammalia
Seller
brain
Mammalia
Johnson
Mammalia
cell differentiation
Insecta
Breugel
Dapena
dwarf
Nematoda
Brun
ectrodactylysm
Amphibia
Rostand
environmental factors
Insecta
Scharloo
MYELINIZATION
see Central nervous system
MYOBLASTS
see Muscle(s)
MYOGENESIS
see Muscle(s)

MYOSIN
see Muscle(s)

MYOTOME
see Somite(s)

NASAL ORGAN
see Olfactory organ

NEMATOCYSTS

NEOPLASIA
see Tumours

NEOTENY
see Metamorphosis

NERVE(S)
autoradiography
Amphibia Prestige
Amphibia Muntz
Amphibia Hedlund
Amphibia Aronsson
Aves Mauger
Aves Saxod

optic
Amphibia Gaze
Aves Stirling
Aves Marchisio
regeneration
Amphibia Gaze
Mammalia Stirling
Mammalia Nie
ultrastructure
Amphibia Hedlund
Aves Hedlund

NERVE CELLS
autoradiography
Vertebrata Breipohl
biochemistry
Aves Bertolini
Cyclostom Filogamo
Mammalia Bertolini
biophysics
Mammalia Parsons
Mammalia Barasa
Mammalia Kaluz
Mammalia Mandel
Mammalia Mandel
Mammalia Parsons
Mammalia Wechsler
Vertebrata Breipohl
differentiation
Amphibia Prestige
Aves Mandel
Mammalia Mandel
Vertebrata Baffoni
fibre
Amphibia Baffoni
Aves Prestige
Aves Baffoni
Bertolini
Bösel
Bertolini
function
Amphibia Marchisio
Aves
Mammalia Augusti
growth
Aves Bray
Aves Mandel
Mammalia Mandel
Vertebrata Baffoni
histochemistry
Teleostei Grün
histogenesis
Capanna
Smart
irradiation
Mammalia Lierse
metabolism
Mammalia Kaluz
microcinematography
Vertebrata Breipohl
neurite
Mammalia Augusti
neuroblast
Amphibia Filoni
Aves Stefanelli
Aves Augusti
Mammalia Augusti
Rohon-Beard cells
Amphibia Marini
ultrastructure
Mammalia Filogamo
Vertebrata Grün
Vertebrata Breipohl
NERVOUS SYSTEM
see also specific components; neurotransmitters
cetacea
Pilleri
Collombola Tyszkiewicz
biochemistry
Aves Alfei
Homo Wender
Mammalia Wender
biophysics
Amphibia Bondi
development
Aves Genis
Insecta Louvet
Mammalia Noack
enzymes
Homo Wender
experimental study
Mammalia Wender
Aves Drukker
Aves Mammalia Korochkin
genetics
Mammalia Wechsler
Nematoda Brenner
growth
Amphibia Keating
Teleostei Benedetti
histo- & cytochemistry
Mammalia Korochkin
Wender
involvement
Amphibia Stefanelli
Teleostei Stefanelli
irradiation
Mammalia Wender
metamorphosis
Amphibia Stefanelli
Teleostei Stefanelli
morphology
Aves Drukker
neuronal specificity
Amphibia Keating
neurotransmitters
Mollusca Bernocchi
Fraschini
Manfredi
peripheral
Homo Gamble
Mammalia Schwachelin
physiology
Aves Genis
Mammalia Korochkin
regeneration
Amphibia Baffoni
Aves Boilly
Mammalia Oligochaeta
teratogenesis
Aves Cantino
Mammalia Marty
ultrastructure
Amphibia Cantino
Aves Cantino
Oligochaeta Marcel
NEURAL CREST
Amphibia Chibon
Herbert
Aves Le Douarin
Sala
Aves Lelièvre
TEILET
NEURAL PLATE
Amphibia Woelwarth
Mammalia Geelen
NEURAL TUBE
see Central nervous system
NEURONS
see Nerve cells
NEUROSECRETION
Aves Jankovic
Aves Lukic
Cephalopoda Säcarrao
Crustacea Herp
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**NEUROTRANSMITTERS**
see also Hormones

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**GABA**

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**monoamines**

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**Homo**

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**Mollusca**

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**nervous system**

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**pineal organ**

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**teratogenesis**

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**NEURULA(TION)**

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**Asciacea**

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**NITROGEN**

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**NORMAL TABLES**
see Embryology (general & descriptive)

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**NOTOCHORD**

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**NUCLEAR TRANSPANTATION**
see Nucleus

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<th>see also specific nucleic acids: Nucleotides (&amp; nucleosides)</th>
<th>AUTORADIOGRAPHY</th>
<th>Amphibia</th>
<th>HOUTDRY</th>
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**NUCLEO-CYTOPLASMIC RELATIONS**

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**NUCLEOLUS**
see Nucleus

**NUCLEOTIDES (& nucleosides)**

<table>
<thead>
<tr>
<th>cyclic</th>
<th>Amphibia</th>
<th>Homo</th>
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| Aves | Dupsiva | Svejar | Malpoix |

**NUCLEUS**

<table>
<thead>
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transfer
Amphibia  Aimar  Delarue  Gallien  Labrousse  Lucey  Muller  Nedvidek  Nikitina  Ortolani  Romanovskiy  Signoret  Sladecek  Schnetter

Chondrostei  Insecta  Ultrastructure  Amphibia  Insecta

NUTRITION (embryonic, larval, etc.)
Amphibia  Aves
Crustacea  Gastropoda  Mammalia

B. N. OESOPHAGUS
Mammalia  Sevcenko

OESTROUS CYCLE
see Reproduction

OLFATORY ORGAN
Homo  Harris  Mammalia  Harris  Morris
Teleostei  Bertmar

OOCYTE
see Egg(s)
see also Gamete(s)

OOGENESIS
see also Gamete(s)

Arachnida  Feiertag  Pijnacker  Grün  Millonig  Dhaiaut  Aisenstadt  Giorgi  Godula  Kryztofowicz  Matuszewski  Ogórzalek  Pijnacker  Baker  Bou  Willems  Zaitzev

Amphibia  Aves

biochemistry
Amphibia  Biochemistry

Homo  Mammalia  Laguchev  Moore  Vakaet  Chmielewsky  Giaginskaya

Teleostei  Denys  Ficq  Ford  Habrova  Huchon  Mairý  Nedvidek  Wegnez  Wylie  Bäckström  Cognetti  Duspiva  Engels  Matuszewski  Moore  Kulikova

Insecta  Echinoidea  Cognetti

Chordorstei  Insecta  Comparative study

endocrinology  Amphibia  Ascidacea  Polychaeta  Teleostei  Sakun

enzymes  Amphibia  Follicle cell

follicle cell  Matuszewski  Martinek

endoctopic biochemistry  Ascidacea  Dolcemascolo  Gianguzza  Mancuso  Bellairs  England  Stagni  Russo-Caia  Martinek  Chmielewsky

Histo-CTomy
Mammalia  Moore  Aves

Hydroidea  Insecta

Mammalia  Teleostei  Turbellaria  involution  Amphibia  Kress  Spornitz

irradiation  Mammalia  Membrane

morphology  Chondrostei  Aves  Teleostei

nucleus  Gastropoda  Oligochaeta  Nurse cell

nurse cell  Amphibia  Chondrostei  Insecta  Matuszewski

Oogenesis  Amphibia  Parthenogenetic

Crustacea  Zaffagnini

physiology
Amphibia  Crustacea  Mammalia  theoretical study

tracer study
Aves  Insecta

ultrastructure  Amphibia

fork  Habrova  Jacob  Nedvidek  Nörrevaeg  Van Gansen

Ascidiaegn
Dolcemascolo  Gianguzza  Mancuso

Aves  Bellairs  England  Mancino  Laguchev  Skatkov

Gastropoda  Homo

Hydrozoa  Glätzer

Insecta  Mammalia

Oligochaeta  Teleostei  Götting  Raunich

vitellogenesis  Amphibia  Kress  Huchon  Spornitz

Aves  Bellairs  England  Dhaiaut  Johannisson  Glätzer

Cephalopod  Crustacea  Hydrozoa

Insecta  Engels  Laverdure  Bondi  Savinova

Oligochaeta  Teleostei  Kulikova  Sakun

Turbellaria  Gerzeli

OOPLASMIC SEGREGATION
see Egg(s)

ORGANIZATION (pattern formation)
see also Induction

Hydrozoa  biochemistry  Insecta  early stages  Teleostei  genetics  Insecta  imaginal disc  Insecta

Limb  Insecta  nervous system  Amphibia  neural plate  Amphibia

Webster  Meer

Webster  Jacobson

Kroeger  Sprey  Ursprung

Woellwarth
Crustacea
Della Croce
Gaino
Sabeli
Zaffagnini
Czihak
Asturow
Camenzind
Forsskahl
Matuszewski
Pannelius
Pijnacker
Ulrich
Bertolani
Czihak
Benazzi

PATHOLOGY (developmental)
see also Anomalies; Bacteria;
Malformations;
Teratogenesis; Virus(es)

Crustacea

Echinoderm
Insecta

Tardigrada
Teleostei
Turbellaria

Homo
Testa
Züccatosta
Paul

Mammalia
abortion
Homo
Ferrier
Kajii
Darrieulat

Mammalia
anemia
Mammalia
bacterial toxins
Mammalia
bone
Mammalia
cytogenetics
Homo
dysplasia
Homo
Mammalia
embryonic
Homo
experimental diabetes
Mammalia

PERMEABILITY
Amphibia
Dick
Hansson
Lövtrup
Laat
Schulteiss

PESTICIDES
Aves
Bruel
David
Lutz
Mammalia
Mankowska

PHARMACOLOGY
see Drug(s)

PHARYNX
see also Branchial region;
Mouth
Aves
Leclerc
Turbellaria
Schilt
Ziller

PHENOCOPIES
Aves
Landauer
Mammalia
Kocher

PHOSPHORUS

PHYLOGENESIS
Amphibia
Hinchliffe
Amniota
Matejka
Crossopterygii
Hinchliffe
Hemichordata
Emig
Homo
Matejka
Mazhuiga
Slipka
Insecta
Epenberger
Mammalia
Mazhuiga
Metazoa
Jägersten
Phoronideae
Emig
Teleostei
Therniaeae
Vertebrata
Collin
Epenberger

Virus-induced
Homo
Koskimies
Saxén

PATTERN FORMATION
see Organization

PELVIC GIRDLE
see Skeleton

PEPTIDES
see Proteins

PERITONEUM
see Body cavities

PERITHELLELINE FLUID
see Egg(s)

PINEAL ORGAN (& para-
pineal organ)

Amphibia
Dobrowolski
Hach
La Spina

Aves
Groenendijk
Hach

Insecta
Egelhaaf
Lafont
Rembold

Mammalia
Deo
Hach

Nemertea
Vernet

Polychaeta
Fischer

PITUITARY
see Hypophysis

PLACENTA(TION)
see also Blastocyst; Embryo-
maternal relationships;
Pregnancy
androgen production
Mammalia
Okker

biochemistry
Mammalia
Svejcar

comparative study
Mammalia
Harrison
Razek

culture in vitro
Homo
Alsatt
Baker

Cedard

Mammalia
Ikonicoff

Guichard

Zaayer

development
Mammalia
Bulmer

Peeq

effect of drugs
Homo
Lemtis

endoecrinology
Homo
Alsatt

Baker

Cedard

Ikonicoff

Colombo

Guichard

Okker

Zaayer

enzymes
Homo
Gennser

Kaufmann

Vacek

Mammalia
Vacek

PHYSIOLOGY (developmental)
see Embryology (exper-
imental); Embryology
(physiological)
see also Development

PIGMENTATION
see also Chromatophore(s);
Melanophore(s);
Neural crest

 Amphibia
Hach

La Spina

Aves
Groenendijk

Hach

Insecta
Egelhaaf

Lafont

Rembold

Mammalia
Deo

Hach

Nemertea
Vernet

Polychaeta
Fischer

PTHORUS

PRECURSOR

Amphibia
Hinchliffe

Amniota
Matejka

Crossopterygii
Hinchliffe

Hemichordata
Emig

Homo
Matejka

Mazhuiga

Slipka

Insecta

Epenberger

Mammalia

Mazhuiga

Metazoa

Jägersten

Phoronideae

Emig

Teleostei

Therniaeae

Vertebrata

Collin

Epenberger

Virus-induced

Homo

Koskimies

Saxén

PATTERN FORMATION

see Organization

PELVIC GIRDLE

see Skeleton

PEPTIDES

see Proteins

PERITONEUM

see Body cavities

PERITHELLELINE FLUID

see Egg(s)

PERMEABILITY

Amphibia

Dick

Hansson

Lövtrup

Laat

Schulteiss

PESTICIDES

Aves

Bruel

David

Lutz

Mammalia

Mankowska

PHARMACOLOGY

see Drug(s)

PHARYNX

see also Branchial region;
Mouth

Aves

Leclerc

Turbellaria

Schilt

Ziller

PHENOCOPIES

Aves

Landauer

Mammalia

Kocher

PHOSPHORUS

PHYLOGENESIS

Amphibia

Hinchliffe

Amniota

Matejka

Crossopterygii

Hinchliffe

Hemichordata

Emig

Homo

Matejka

Mazhuiga

Slipka

Insecta

Epenberger

Mammalia

Mazhuiga

Metazoa

Jägersten

Phoronideae

Emig

Teleostei

Therniaeae

Vertebrata

Collin

Epenberger

160
experimental study
Mammalia Révész
function
Mammalia Schlüter
haemophagous organ
Mammalia Gulamhusein
histochemistry Homo Belicza
Mammalia Czyzewska
malformations Homo Belicza
Mammalia Czyzewska
morphology Homo Belicza
Mammalia Czyzewska
pathology Homo Belicza
Mammalia Czyzewska
physiology Homo Belicza
Mammalia Czyzewska
relation to fetus Homo Baur
Mammalia Baur
syncytium Mammalia Hernandez
teratogenesis Mammalia Geelen
transport Homo Belicza
Mammalia Belicza
ultrastructure Homo Belicza
Mammalia Belicza
villous transport Homo Baur
Mammalia Baur
vascularization Homo Harris
Mammalia Harris
villi Homo Baur
Mammalia Baur

PLACODE(S)
see also Sense organs

PLANT EMBRYOLOGY
& MORPHOGENESIS
(experimental & physiol.)
see also Unicellular organisms
apical dominance
Angiosperm apomixis
Izmailov Malecka
biochemistry Angiosperm Barlow Bopp
Cyanophyc. Eumycetoz Sauer
Fungi Stange
Hepaticae biophysics Acrasiales Konijn
Chlorophyc. callus Angiosperm Capesius
Harte
cell activation Angiosperm Jalouzot
cell adhesion Acrasiales Garrod
cell aggregation Acrasiales Konijn
Malchow
Westra
cell differentiation Acrasiales Gerisch
Konijn
Parish
Street
Angiosperm cell membrane Acrasiales Beug
Gerisch
Parish
sietsma

chemotaxis Acrasiales Konijn
Malchow
Westra
crown gall Angiosperm Beiderbeck Bopp
culture in vitro Angiosperm Bopp
Genderen
Haccius
Harada
Harte

Gymnosper.
cyclic nucleotides Acrasiales Gerisch
Konijn

cytogenetics
Angiosperm Turala
development Bryophyta Bopp
Knoop
differentiation Angiosperm Abel
Fungi Luger
Hepaticae Abel
dormancy Angiosperm Istambouli
embryo Angiosperm Haccius
Ryczkowski
Gymnosper. endosperm Angiosperm Turala
economic factors Acrasiales Ashworth
Gymnosper. enzyme Angiosperm Wessels
Angiosperm Haccius
fertilization Angiosperm Linskens
flower Angiosperm Neville
flowering Angiosperm Broek
Lindenmayer
Wellensiek
fruit Angiosperm van Bragt
fruiting body Ascomyc. Zonneveld
genetics Acrasiales Ashworth
Angiosperm Abel
Ascomyc. Broek
Hepaticae Harte
Wellensiek Zonneveld
germination Angiosperm Abel

growth Angiosperm Augsten
haploidy Angiosperm Barlow
Clemenzia
Gallo
heterokaryon Angiosperm Augsten
Fungi Haccius
histochemistry Angiosperm Street
Luger
Siebers
Street

PLACODE(S)
see also Sense organs

161
Amphibia

Aves

Homo

development

Amphibia
differentiation

Amphibia

Insecta

crystal development

Amphibia

Crustacea

Echinoidea

Insecta

Mammalia

Malusca

egg

Amphibia

clastin

Mammalia

embryo

Echinoidea

fertilization

Echinoidea

fetoprotein

Homo

Mammalia

fetus

Homo

Mammalia

fibrous

Aves

Cyclostom

filamentous

Polychaeta

genetics

Amphibia

hemolymph

Insecta

imaginal disc

Insecta

immunochemistry

Amphibia

induction

Amphibia

keratin

Amphibia

kidney

Aves

lipoprotein

Amphibia

liver

Mammalia

membrane

Amphibia

metabolism

Amphibia

metamorphosis

Insecta

mitotic apparatus

Polychaeta

muscle

Mammalia

nervous system

Aves

Cyclostom

Mammalia

neurotubular

Aves

nuclear

Echinoidea

ooctye

Echinoidea

oogenesis

Amphibia

Echinoidea

organogenesis

Insecta

Mammalia

ovary

Amphibia

pattern

Insecta

Porifera

Teleostei

peptide

Insecta

pineal organ

Vertebrata

phosvitin

Aves

regeneration

Amphibia

Mammalia

Oligochaeta

reproductive system

Insecta

retilucin

Homo

semen

Mammalia

sexual development

Crustacea

soluble

Amphibia

Mammalia

synthesis

Amphibia

Bodo

D’Amelio

Gottschling

Knöchel

Gezelius

Minafra

Mammalia

tooth

Mammalia

transport to fetus

Mammalia

tumour

Mammalia

uterine

Homo

Beier

Fraser

Beier

Mammalia

yolk

Amphibia

Tata

Insecta

Mollusca

Teledostei

yolk sac

Mammalia

Steele

PROTOZOA

see Unicellular organisms

RADIATION

see Irradiation

RADIOMIMETIC AGENTS

REAGGREGATION

see Cell(s)

REARING METHODS

Cestoda

Smyth

Crustacea

Costanzo

Williamson

Mammalia

Beatty

Polychaeta

Cazaux

Teledostei

Flüchter

REGENERATION (physiological)

Amphibia

Martin

Mammalia

Polezhayev

Reznikov

REGENERATION (traumatic)

see also Unicellular organisms; Wound healing

Annelida

Malikova

Asterioidea

Lender

Loseva

Hemichorda

Emig

Hydrozoa

Webster

Nemertea

Gontcharoff

Oligochaeta

Saussey

Ophiuroidea

Loseva

Phasmida

Bart

Phoroneida

Emig

Polychaeta

Di Grande

Sabelli

Porifera

Boury

Bronsted

Korotkova

Reptilia

Bellairs
Mammalia
Tail
Amphibia
Terrestrial
Crustacea
Theoretical study
Amphibia
Thymus
Mammalia
Trophic factor
Oligochaeta
Ultrastructure
Ctenophora
Turbellaria
Undifferentiated Turbellaria
Vascular system
Aves
Homo
Mammalia
Wing
Insecta

REGULATION
Embryonic
Amphibia
Dobrowolski
Campbell
Millaire
Amphriنو
Kieny
Marthy
Webster
Dewes

REPRODUCTION
Asexual reproduction

REPRODUCTION
Sexual
see also Egg(s); Fertility (& sterility); Fertilization;
Reproductive system;
Spermatogenesis etc.

Copepoda
Insecta
Mammalia
Polychaeta
Teledoste
Urodela
Artificial insemination
Homo
Mammalia
Biochemistry
Mammalia
Comparative study
Elasmobr
Mammalia
Mollusca
Contraception
Homo
Mammalia
Cycle
Crustacea
Insecta

Mammalia
Teleostei
Endocrinology
Polychaeta
Enzyme
Hydrozoa
Immunology
Homo
Mammalia
Intersexuality
Aves
Semen
Homo
Mammalia
Spawning
Teleostei
Spermatophore
Cephalopod
Viviparity
Actinopterygii
Teledoste
Insecta

REPRODUCTIVE SYSTEM
see also Specific parts; Genital tract;
Urogenital system

Crustacea
Accessory sex gland
Insecta
Chen
Wyl

Biochemistry
Mammalia
Comparative study
Mammalia
Descriptive study
Insecta
Development
Insecta
Teledoste
Differentiation
Insecta
Diploidy
Insecta
Endocrinology
Insecta
Reptilia
Teledoste
Enzymes
Reptilia
Experimental study
Amphibia
Insecta

Female
Insecta
Mammalia

Genitalia
Cephalopod
Insecta
Hybrids
Aves
Male
Mammalia

Morphogenesis
Aves

Morphology
Amniota
Homo
Insecta
Phallic
Reptilia
Physiology
Amniota
Homo
Insecta
Ultrastructure
Insecta

RESPIRATION
see also Metabolism

Amphibia
Hamburger
Landström
Løvtrup
Ascidiacea
D'Anna
Aves
Dawes
Vince
Homo
Guillet
Insecta
Fourche
Landström
Løvtrup
Teledoste
Chaconie
Devillers

RESPIRATORY TRACT

RETICULO-ENDOTHELIAL SYSTEM
see Macrophage system

Rhesus factors
see Immunology

Ribonucleic acid
see also Nucleic acids; Autoradiography

Amphibia
Van Gansen
Cell aggregation
Amphibia
Granz
Cell differentiation
Amphibia
Jacob
Cytoplasmic
Echinoidea
Giudice
Sconzo
Early embryo
Amphibia
Giudice
Pirone
Sconzo
Schneider
Widner
Mollusca
Teledostei
Effect on cell culture
Aves
McKenzie
Effect on early development
Aves
McKenzie
Egg
Amphibia
Grippo
Embryo
Ascidiacea
Puccia
<table>
<thead>
<tr>
<th>Hydrozoa</th>
<th>Mammalia</th>
<th>Reptilia</th>
<th>Teleostei</th>
<th>sexual dimorphism</th>
<th>Cladocera</th>
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<td>Stagni</td>
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<td>Fleau</td>
<td>Ashby</td>
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<td>Gaino</td>
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<td>Swanson</td>
<td>Raynaud</td>
<td>Lissia</td>
<td>Cladocera</td>
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</table>

**SHELL**

- see Egg(s); Integument

**SHELL GLAND**

- see Integument; Oviduct

**SHOULDER GIRDLE**

- see Skeletone

**SKELETON**

- see also specific parts; Bone(s); Cartilage

**Vertebrata**

- Friant

**authorradiography**

- Mammalia: Mazhuga

**biochemistry**

- Mammalia: Paschin

**development**

- Mammalia: Pratt; Rajtová

**girdle**

- Aves: Chevallier

**growth**

- Mammalia: Truslove

**joint**

- Homo: Mazhuga; Linde; Mazhuga

**malformations**

- Homo: Kaitila; Kaitila; Konyukhov; Malinina; Paschin

**morphogenesis**

- Aves: Bellairs

**Mammalia**

- Bellairs; Bellairs

**Reptilia**

- Bellairs

**osteogenesis**

- Homo: Mazhuga; Mazhuga

**Homo**

- Mammalia: Mazhuga; Mazhuga

**ribs**

- Aves: Chevallier

**teratogenesis**

- Homo: Strauss

**ultrastructure**

- Mammalia: Mazhuga; Paschin

**vascularization**

- Homo: Mazhuga; Mazhuga

**SKIN**

- see also Epidermis; Integument; Pigmentation; Wound healing

**Amphibia**

- Gabrion; Hanke; Schultheiss

**SLIME MOLDS**

- see Plant embryology & morphogenesis

**SOMATIC MUTATIONS**

- see Genetics

**SOMATIC RECOMBINATION**

- see Cell heredity

**SOMITE(S)**

- Amphibia: Brustis; Burgess; Gipouloux; Ivanov

**Aves**

- Christ; Curtis; Ivanov; Jacob

**Reptilia**

- Lanot; Menkes; Nicolet; Sandor; Steding

**Teleostei**

- Raynaud; Vasse

**Vertebrata**

- Hauser

**SPERMATOGENESIS**

- see also Gametes

**Arachnida**

- Pijnacker; Colombera; Byczkowska; Pijnacker

**Ascidia**

- Franzen; Frank; Meerkel

**Bryzoa**

- Ascidia; Byczkowska; Frank; Meerkel

**Insecta**

- Frank; Frank; Meerkel

**Mammalia**

- Nemertea; Frank; Frank; Meerkel

**Nematode**

- Frank; Frank; Meerkel

**Platypostra**

- Frank; Frank; Meerkel

**Pogonophora**

- Frank; Frank; Meerkel

**Polychaeta**

- Frank; Frank; Meerkel

**Teleostei**

- Willemse; Zaitzev

**anomalies**

- Homo: Posinovec

**biochemistry**

- Echinoidea: De Mattheis; Nicotra

**culture in vitro**

- Insecta: Fowler

**cytochemistry**

- Hydroida: Stagni

**cytology**

- Insecta: Fowler

**diploids**

- Insecta: Woyke

**effect of various factors**

- Homo: Sentlein; Harrison; Sentlein

**endocrinology**

- Ascidia: Georges

**enzymes**

- Mammalia: Dalcq

**meiosis**

- Homo: Polani; Polani

**nucleus**

- Amphibia: Temple

**Sertoli cells**

- Mammalia: Merkle

**ultrastructure**

- Homo: Sentein; Sentein; Sentein

**Hydrozoa**

- Sentein; Sentein; Sentein

**Mammalia**

- Sentein; Sentein; Sentein

**Amphibia**

- Temple

**Mammalia**

- Merkle

**Nematode**

- Frank; Frank; Meerkel

**Teleostei**

- Willemse; Zaitzev

**Vertebrata**

- Hauser

**SPERMATOZOA**

- see also Gametes

**Ascidia**

- Villa
<table>
<thead>
<tr>
<th>Term</th>
<th>Synonyms/Acrons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tail</td>
<td>see also Regeneration (traumatic)</td>
</tr>
<tr>
<td>Amphibia</td>
<td>Brustis Fox</td>
</tr>
<tr>
<td>Temperature</td>
<td>see also Environmental factors</td>
</tr>
<tr>
<td>Amphibia</td>
<td>Brugzieble Lefebvre Rostand Sentein Barasa Fischer Haffen Preda</td>
</tr>
<tr>
<td>Aves</td>
<td>Echinoidea Insecta Mammalia</td>
</tr>
<tr>
<td>Chondrostei</td>
<td>Stytina</td>
</tr>
<tr>
<td>Crustacea</td>
<td>Lescher</td>
</tr>
<tr>
<td>Diplopoda</td>
<td>Juberthie</td>
</tr>
<tr>
<td>Insecta</td>
<td>Bergerard Papillon</td>
</tr>
<tr>
<td>Nematoda</td>
<td>Brun</td>
</tr>
<tr>
<td>Reptilia</td>
<td>Pieau</td>
</tr>
<tr>
<td>Teleostei</td>
<td>Braum</td>
</tr>
<tr>
<td>Teratogenesis</td>
<td>(experimental)</td>
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169
trypan blue
Aves
Mammalia
ultrastructure
Aves
Mammalia
vascular system
Aves
Homo
Mammalia
venom
Aves
Mammalia
vitamin
Amphibia
Mammalia

TERATOLOGY
see Anomalies (early development): Malformations

TERATOMA(S)
Aves
Homo
Mammalia
Salaun
Gaillard
Braithwaite
Damjanov
Evan
Gaillard
Graham
Martin
Salaun
Skreb
Solter

TESTIS
culture in vitro
Insecta
Mammalia
descent
Homo
Mammalia
development
Mammalia
differentiation
Insecta
endocrinology
Aves
Mammalia
enzymes
Mammalia
gubernaculum
Homo
Mammalia
histochemistry
Mammalia
immunology
Aves
Leydig cells
Mammalia
malformations
Amphibia
morphogenesis
Mammalia

organization
Homo
pathology
Homo
Mammalia
Sertoli cells
Mammalia

THALIDOMIDE
Aves
Crustacea
Homo

THEORETICAL BIOLOGY
(developmental)
biomorphosis
Aves
chemical turnover
Aves
chromosomes
Aves
computer analysis

Aves
cybernetics
factorial analysis
Insecta
growth
Aves
Crustacea
information theory
limb
Aves
models
multivariate analysis
other models
Acrasiales
Amphibia
position information
Insecta
proteins
reproduction
Amphibia
thermodynamics

THORACIC CAVITY
see Body cavities

THYMUS
Amphibia
Aves
Homo
Mammalia

THYROID GLAND
see also Thyroxine
Amphibia

THYROSTATIC AGENTS
see Thyroid gland

TONGUE
see Mouth

TOOTH (TEETH)
Mammalia
Teleostei

ameboid Mammalia
attachment
Elasmobr
biochemistry
Mammalia
calcification
Mammalia
culture in vitro
Amphibia

Aves
Coruo
Daugeras
Fontaine
Le Douarin
Lelievre
Maraud
Metafora
Mitskevich
Amphibia
Campantico
Guastalla
Hartwig
Ryffel
Schibler
Tata
Weber
Daugeras
Faucounau
Lawson
Mitskevich
Amphibia
Heaysman
Wahl
Weber
Abercrombie
Dunn
Dyer
Lefford
Magill
Adinolfi
Dübendorfer
Pritchard
Abercrombie
Dunn
Magill
Amphibia
Pexieder
Dyer
Deuchar
Gumpel
Pritchard
Amphibia
Wahl
Weber
Schmid
Fox
Amphibia
Friant
Holmbakken
Jongh
Moe
Pitrel
Linde
Linde
Berkovitz
Capuron
development
Amphibia
Enamel
Mammalia

crustation
Mammalia
Experimental study
Mammalia

growth
Homo
Histogenesis
Mammalia
Histology
Mammalia
Incorporation
Mammalia
Induction
Amphibia
Involvement
Mammalia
Morphogenesis
Mammalia
Periodontium
Mammalia
Physiology
Mammalia
Proliferation
Mammalia

Regeneration
Amphibia

Root
Mammalia
Structure
Homo
Mammalia
Ultrasound
Amphibia

TRACE ELEMENTS

TRACHEAL SYSTEM
Insecta

TRANSPLANTATION
see also Immunology, Nucleus
Auto transplantation
Mammalia
Cartilage
Mammalia
Biochemistry
Amphibia

Brain
Teleostei
Early embryo
Mammalia

Effect of host
Amphibia

Enzymes
Mammalia

Gonad
Amphibia

Gradient
Insecta

Head
Amphibia

Hetero plastic
Amphibia

Aves
Mammalia

Homoplastic
Amphibia

Aves
Mammalia

Homoplastic
Amphibia

Aves
Mammalia

Hypophysis
Teleostei

Immunology
Amphibia

Limb
Amphibia

Insecta

Liver
Mammalia

Lympho-myeloid cells
Mammalia

Method
Aves

Mammalia

Pineal organ
Aves

Mammalia

Recognition
Mammalia

Rejection
Amphibia

Skin
Mammalia

Tissue
Amphibia

Tolerance
Amphibia

Tumour
Aves

Xenoplastic
Amphibia

Aves

TROPHOBLAST
see Blastocyst

TUMOUR(S)
see also Carcinogenetic agents;
Teratoma(s)

Mammalia

Biochemistry
Homo

Mammalia

Cells
Aves

Homo

Culture in vitro
Aves

Homo

Determination
Mammalia

Differentiation
Mammalia

Effect on development
Insecta

Effect on sex development
Mammalia

Embryonic
Homo

Mammalia

Endocrinology
Mammalia

Epith-mesench. interact
Vertebrata

Histology
Vertebrata

Immunology
Homo

Mammalia

Induction
Mammalia

Interact with embryo
Mammalia

Interstitial cell
Mammalia

Irradiation
Homo

Leukemia
Mammalia

Liver
Mammalia

Lymphoid tissue
Amphibia

Pigment
Amphibia

Homo

Mammalia

Preimplantation
Mammalia

Thyroid
Mammalia

Transplantation
Aves

Mammalia

Ultrastructure
Vertebrata

TWINS (other multiple births)
Homo

ULTIMOBRANCHIAL BODY
Aves

Mammalia

ULTRASOUND
see also Environmental factors
Aves

Mammalia

Braithwaite
Evans
Graham
Martin
Sigot

Vander
e

Wüst

Xenon

Yarin

Zahn

Zender

Zimmer

Zito
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| X-RADIATION see also Irradiation; Radiomimetic agents biochemistry Mammalia Alexandre effect on chromosomes Amphibia Jaylet effect on moultig Insecta Coulon effect on differentiation Amphibia Peters effect on early development Amphibia Alexandre Peters effect on embryo Amphibia Reyss Aves Reyss Reptilia Pieau Vesse effect on gametes Amphibia Dj Grande Aves Gasc Mammalia Baker Beaumont effect on imaginal disc Insecta Vijverberg
The Hubrecht Laboratory (International Embryological Institute) (for address see page 2 of this issue)

Individual guest workers from all countries are welcome at the Laboratory. Partial financial support is available in special cases only.

Annual Progress Reports are available on request. They are in English and summarize the current research of the staff and guest workers (both Dutch and foreign).

Persons interested in receiving reprints of the Laboratory's publications may ask to be placed on the Mailing List. They will receive a reprint check list at regular intervals.

The Laboratory offers the following international facilities:

   a) The Central Embryological Collection, containing embryonic material of man, many mammals, and all other vertebrate classes, some of it very rare. Recent additions are the collection of the late J. P. Hill and that of H. Grüneberg. Details will be supplied on request.

   b) The Central Embryological Library, an extensive reprint collection covering the entire field of developmental biology, with documentation and bibliographical services attached to it. Details will be supplied on request.

   c) International Research Groups in Developmental Biology. Aim: to stimulate research in developmental biology by introducing young scientists from different countries into the field and enabling them to engage in practical international co-operation. Age limit 35, maximally 12 members. The eighth Research Group will probably be held in the first six months of 1976. In that case, circulars will be widely distributed in the fall of 1974, and will also be sent on request.

International Society of Developmental Biologists (Developmental Biology Section of the I.U.B.S.)

The I.S.D.B. organizes an International Embryological Congress once every four years (VIIIth Congress to be held in 1977), as well as one or two regional Symposia every year. Members receive a Developmental Biology Newsletter.

International Secretary: Dr. R. L. DeHaan, Department of Anatomy, Emory University, School of Basic Health Sciences, Atlanta Ga. 30322, U.S.A. Secretary-Treasurer: Dr. J. J. Wartiovaara, Lab. of Exper. Embryol., III Dept. of Pathol., Univ. of Helsinki, Haartmaninkatu 3, 00290 Helsinki 29, Finland. Membership over 500. Membership list follows below.
Membership List of the International Society of Developmental Biologists
(alphabetical order, with years of election, * emeritus members)

This list was drawn up on March 1st, 1974. For full addresses of European members see General Embryological Information Service vol. 15, pt. 1 (a few names are lacking or not marked ISDB due to the earlier date at which the Directory was drawn up). Full addresses of members from countries outside Europe will appear in vol. 15, pt. 2.

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W. J. v. Dooremalen, Utrecht, '60
A. Dorfman, Chicago, '72
D. B. Drachman, Baltimore, Md., '70

175
Most of these notices are descriptive rather than critical. Their main aim is to provide an idea of the scope and potential usefulness of the books. All notices (unless signed) are written by the editor; if necessary he solicits the opinion of the staff of the Hubrecht Laboratory or of other specialists.

Dissertations, research monographs, and other works of a specialized nature or written in languages not generally known are provided with brief annotations.

Various types of books are distinguished according to the following criteria:

- Treatises: large comparative or systematic works
- Textbooks: incl. "readers", introductions, compendia, practical manuals, etc.
- Monographs: incl. collections of reviews, essays, atlases, etc.
- Dissertations: academic theses
- Symposium reports: incl. reports of congresses, conferences, meetings, etc.

Collections of papers: containing original research papers by various authors, or reprintings of papers by one author

Books of readings: containing reprintings of papers by various authors

Reference works: incl. glossaries, data books, source books, etc.

CONTENTS

The numbers refer to the serial numbers of the notices. Cross references will be found in the heading of each category on the page where it begins.

General Developmental Biology, 1-2
Theoretical and Mathematical Developmental Biology, 3-10
Plant Development (general), 11-20
Invertebrate Development (general), 21-28
Vertebrate Development (general), 29-33
Development of Mammals and Man (general), 34-45
Implantation, Placenta, Fetal Membranes (no entries, but see 43, 56, 60, 107, 108, 114, 125, 134, 135)

Teratogenesis, 46-55
Developmental Pathology, Cancer, 56-60
Regeneration, Renewal, 61-72
Organo- and Histogenesis (incl. tissue and organ culture, histochemistry), 73-93
Cellular Developmental Biology (incl. cell culture, cytochemistry), 94-100
Developmental Biochemistry and Molecular Biology, 101-106
Developmental Physiology (incl. endocrinology, immunology, behaviour, etc.), 107-116
INDEX TO AUTHORS AND EDITORS
with reference to serial numbers of book notices

<table>
<thead>
<tr>
<th>Author</th>
<th>Serial Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abramovici, A.</td>
<td>55</td>
</tr>
<tr>
<td>Alexander, N.J.</td>
<td>82</td>
</tr>
<tr>
<td>Allin, P.</td>
<td>98</td>
</tr>
<tr>
<td>Altman, Ph.L.</td>
<td>140</td>
</tr>
<tr>
<td>Allner, G.</td>
<td>75</td>
</tr>
<tr>
<td>Anderson, J.M.</td>
<td>107</td>
</tr>
<tr>
<td>Assali, N.S.</td>
<td>56</td>
</tr>
<tr>
<td>Austin, C.R.</td>
<td>34, 126</td>
</tr>
<tr>
<td>Avtsyn, A.F.</td>
<td>68</td>
</tr>
<tr>
<td>Baker, G.T.</td>
<td>106</td>
</tr>
<tr>
<td>Balin, H.</td>
<td>125</td>
</tr>
<tr>
<td>Banker, B.Q.</td>
<td>92</td>
</tr>
<tr>
<td>Barnes, A.C.</td>
<td>108</td>
</tr>
<tr>
<td>Bartsch, F.K.</td>
<td>57</td>
</tr>
<tr>
<td>Baserga, R.</td>
<td>94</td>
</tr>
<tr>
<td>Battinich, W.R.</td>
<td>50</td>
</tr>
<tr>
<td>Bavetta, L.A.</td>
<td>74</td>
</tr>
<tr>
<td>Beatty, R.A.</td>
<td>132</td>
</tr>
<tr>
<td>Beck, F.</td>
<td>35</td>
</tr>
<tr>
<td>Beermann, W.</td>
<td>118</td>
</tr>
<tr>
<td>Beroza, M.</td>
<td>115</td>
</tr>
<tr>
<td>Biggers, J.D.</td>
<td>133</td>
</tr>
<tr>
<td>Bisconte, J.-C.</td>
<td>86</td>
</tr>
<tr>
<td>Björklund, A.</td>
<td>81</td>
</tr>
<tr>
<td>Boneus, L.O.</td>
<td>112</td>
</tr>
<tr>
<td>Bourne, G.H.</td>
<td>73</td>
</tr>
<tr>
<td>Brien, P.</td>
<td>62</td>
</tr>
<tr>
<td>Burnett, A.L.</td>
<td>63</td>
</tr>
<tr>
<td>Carlson, B.M.</td>
<td>64</td>
</tr>
<tr>
<td>Chemke, J.</td>
<td>55</td>
</tr>
<tr>
<td>Cherfas, B.I.</td>
<td>122</td>
</tr>
<tr>
<td>CIBA Foundation</td>
<td>113</td>
</tr>
<tr>
<td>Ciňák, R.</td>
<td>76</td>
</tr>
<tr>
<td>Clowes, F.A.L.</td>
<td>12</td>
</tr>
<tr>
<td>Comline, R.S.</td>
<td>114</td>
</tr>
<tr>
<td>Condille, P.G.</td>
<td>135</td>
</tr>
<tr>
<td>Corfman, Ph.A.</td>
<td>135</td>
</tr>
<tr>
<td>Counce, S.J.</td>
<td>21</td>
</tr>
<tr>
<td>Cowan, J.D.</td>
<td>8, 9</td>
</tr>
<tr>
<td>Cros-Bonnemainson, S.</td>
<td>51</td>
</tr>
<tr>
<td>Cross, K.W.</td>
<td>114</td>
</tr>
<tr>
<td>Crozier, R.</td>
<td>135</td>
</tr>
<tr>
<td>Csaba, G.</td>
<td>95</td>
</tr>
<tr>
<td>Dandrieu, M.R.</td>
<td>52</td>
</tr>
<tr>
<td>David, G.</td>
<td>40</td>
</tr>
<tr>
<td>Dawes, G.S.</td>
<td>114</td>
</tr>
<tr>
<td>De la Cruz, M.V.</td>
<td>77</td>
</tr>
<tr>
<td>Dehncke, R.</td>
<td>60</td>
</tr>
<tr>
<td>Denenberg, V.H.</td>
<td>116</td>
</tr>
<tr>
<td>Diczfalusy, A.</td>
<td>104</td>
</tr>
<tr>
<td>Diczfalusy, E.</td>
<td>104</td>
</tr>
<tr>
<td>Dittmer, D.S.</td>
<td>140</td>
</tr>
<tr>
<td>Duke, K.L.</td>
<td>128</td>
</tr>
<tr>
<td>Dzavakhishvili, N.A.</td>
<td>67</td>
</tr>
<tr>
<td>Dzidzishvili, N.N.</td>
<td>67</td>
</tr>
<tr>
<td>Ephrussi, B.</td>
<td>119</td>
</tr>
<tr>
<td>Frederiks, E.</td>
<td>48</td>
</tr>
<tr>
<td>Fulcrand, J.</td>
<td>87</td>
</tr>
<tr>
<td>Ginzburg, A.S.</td>
<td>127</td>
</tr>
<tr>
<td>Giudice, G.</td>
<td>22</td>
</tr>
<tr>
<td>Gjesdal, F.</td>
<td>42</td>
</tr>
<tr>
<td>Glasser, S.</td>
<td>125</td>
</tr>
<tr>
<td>Gluecksohn-Waesch, E.</td>
<td>132</td>
</tr>
<tr>
<td>Goss, R.J.</td>
<td>93</td>
</tr>
<tr>
<td>Gray, S.W.</td>
<td>46</td>
</tr>
<tr>
<td>Gurdon, J.B.</td>
<td>117</td>
</tr>
<tr>
<td>Haegel, P.</td>
<td>40, 41</td>
</tr>
<tr>
<td>Hafez, E.S.E.</td>
<td>134</td>
</tr>
<tr>
<td>Hagström, B.E.</td>
<td>58</td>
</tr>
<tr>
<td>Hamilton, W.J.</td>
<td>36</td>
</tr>
<tr>
<td>Harris, R.</td>
<td>98</td>
</tr>
<tr>
<td>Helm-Hylkema, H.</td>
<td>111</td>
</tr>
<tr>
<td>Herzog, A.</td>
<td>53</td>
</tr>
<tr>
<td>Hörstadius, S.</td>
<td>23</td>
</tr>
<tr>
<td>Houthoff, H.J.</td>
<td>97</td>
</tr>
<tr>
<td>Huxley, J.S.</td>
<td>4</td>
</tr>
<tr>
<td>Jägersten, G.</td>
<td>120</td>
</tr>
<tr>
<td>Jensen, W.A.</td>
<td>15</td>
</tr>
<tr>
<td>Kaldewey, H.</td>
<td>19</td>
</tr>
<tr>
<td>Kandeler, R.</td>
<td>13</td>
</tr>
<tr>
<td>Keijser, A.W.M.</td>
<td>88</td>
</tr>
<tr>
<td>Khvatov, B.P.</td>
<td>37</td>
</tr>
<tr>
<td>King, R.C.</td>
<td>124</td>
</tr>
<tr>
<td>Kirsche, W.</td>
<td>78</td>
</tr>
<tr>
<td>Klima, M.</td>
<td>79</td>
</tr>
<tr>
<td>Klingberg, M.A.</td>
<td>55</td>
</tr>
<tr>
<td>Knox, W.E.</td>
<td>80</td>
</tr>
<tr>
<td>Kozlowski, T.T.</td>
<td>11</td>
</tr>
<tr>
<td>Kuehnert, C.C.</td>
<td>20</td>
</tr>
<tr>
<td>KüNZel, E.</td>
<td>31</td>
</tr>
<tr>
<td>Lloyd, J.B.</td>
<td>35</td>
</tr>
<tr>
<td>Lönning, S.</td>
<td>58</td>
</tr>
<tr>
<td>Macaron, J.</td>
<td>26</td>
</tr>
<tr>
<td>Mager, W.</td>
<td>33</td>
</tr>
<tr>
<td>Maksymowycz, R.</td>
<td>16</td>
</tr>
<tr>
<td>Mathews, W.W.</td>
<td>29</td>
</tr>
<tr>
<td>Menn, J.J.</td>
<td>115</td>
</tr>
<tr>
<td>Mepisashvili, I.C.</td>
<td>67</td>
</tr>
<tr>
<td>Michel, G.</td>
<td>38</td>
</tr>
<tr>
<td>Miller, M.W.</td>
<td>20</td>
</tr>
<tr>
<td>Milman, L.S.</td>
<td>101</td>
</tr>
<tr>
<td>Mittwoch, U.</td>
<td>121</td>
</tr>
<tr>
<td>Moffat, D.B.</td>
<td>35</td>
</tr>
<tr>
<td>Moghissi, K.S.</td>
<td>134</td>
</tr>
<tr>
<td>Mohr, H.</td>
<td>17</td>
</tr>
<tr>
<td>Monroy, A.</td>
<td>105</td>
</tr>
<tr>
<td>Mossman, H.W.</td>
<td>36, 128</td>
</tr>
<tr>
<td>MSS 28, 45, 69, 70, 71, 72, 136, 137, 138, 139</td>
<td>114</td>
</tr>
<tr>
<td>Muñoz-Armas, S.</td>
<td>77</td>
</tr>
<tr>
<td>Muñoz-Castellanos, L.</td>
<td>77</td>
</tr>
<tr>
<td>Nathanielsz, P.W.</td>
<td></td>
</tr>
</tbody>
</table>
Textbooks

1. N.T. SPRATT, JR. 1971. DEVELOPMENTAL BIOLOGY
Wadsworth, Belmont. VII, 567 pp., 555 figs., 6 tabs., subject and species indexes. $12.95, £ 6.10

Contents: Part I. The problem and processes of development: 1. The problem of development; 2. Basic processes of develop-
mental basis of behavior; 25. The emergence of order in development: molecular and ultrastructural aspects; 26. Pattern aspects of development; Part V. Principles of development: 27. Summary: Basic guidelines and principles of development

This textbook which is clearly meant for the use of advanced students, is one of several recent attempts to present developmental biology as a unified whole. Throughout the book data on plants, animals, and protozoa are treated alongside, and almost every developmental process of any importance is dealt with. The unifying theme is that of "guidelines of development" at all levels from the molecular to the organismal.

On the whole the arrangement of chapters is logical, although one could argue with the author on the desirability of treating postembryonic development and regeneration at such an early stage (chs. 4 and 5), and of including the emergence of order and pattern formation (chs. 25 and 26) under special aspects rather than under universal control mechanisms. The present reviewer feels more serious objections against the author's style which frequently lacks didactic clarity. Important concepts are often insufficiently or not at all defined. Although the treatment is certainly not superficial, in many places the writing is bound to be confusing to the student. In several areas with which the reviewer is more intimately familiar he was struck by major and minor inaccuracies and instances of partial misinterpretation of data. In short, the text is worth while in general outline but capable of considerable improvement.

The same judgement applies to many, though not the majority of the illustrations. All figures were especially prepared for this book, and most are artistically successful; however, not a few are confusing in their lay-out, lettering and "arrowing", and some are partially incorrect; several captions do not exactly match the figures. The chapter bibliographies are well selected and strike a good balance between older and more recent literature (there are rather too many mistakes in the spelling of foreign authors' names). The subject index is not entirely adequate. The book is beautifully produced on a pleasing format.

2.
J. R. TATA. 1973. METAMORPHOSIS
Oxford Univ. Press, London, etc. Oxford Biology Readers nr. 46. 16 pp., 17 figs., 20p. (paper)

This is a competent and up-to-date survey of carefully chosen examples from a wide field where it is difficult to be selective. The author does not always achieve maximal lucidity: examples are the role of the median eminence in the frog and the feed-back arrows in fig. 7. Fig. 10c could be improved. The other illustrations serve their purpose well.

182
THEORETICAL AND MATHEMATICAL DEVELOPMENTAL BIOLOGY

Treatises

Cellular systems
Academic Press, New York, etc. XVIII, 330 pp., 116 figs., 3 tabs.,
author and subject indexes. $16.00

This is the second volume of a three-volume series, the other
two being entitled "Subcellular Systems" and "Supercellular
Systems". The book consists of five chapters, and with possibly
one exception, is not of much use to people working on problems
of development.

The exception is Arbib's essay on automata theory. To put it
simply, the approach is to regard the cell as a spatially dis-
crete unit which has access to a number of states under the in-
fluence of its neighbours. The contrast with the usual contin-
nuum models employed by theorists is obvious. It is very inter-
esting, for instance, to see how the problem of the regulation
of pattern in multicellular systems is posed. Readers without a
background in mathematics (especially formal logic) can safely
skip sections 4 and 5 and still get the flavour of the attempt.
In particular, no one should miss the evaluation on page 208 of
Wigner's old (wrong) claim that the laws of physics make it
highly unlikely that self-reproducing beings can exist.

Rescigno and Beck contribute a chapter on compartment analy-
sis. As the word might suggest, this is a study of the dynamics
of exchange of substances between different units (composed of
cells). A typical problem - mentioned by the authors - is the
distribution (at different times) of radioactivity in the blood,
the lipid of the liver, and the skeleton of rats fed radioac-
tive phosphate.

The remaining chapters are all by Rosen. "Morphogenesis" con-
siders strategies for assembling a whole out of a large number
of subunits, allowing for errors. A survey of theories of cell
sorting-out follows; readers must remember that the problem is
posed as one static in time, and is essentially restricted to
minimizing the configuration energy. Then there is a summary of
the attempts of Turing, and of Keller and Segel to look at mor-
phogenesis (in particular, the formation of spatial pattern) as
a phenomenon in which a system "switches" from one steady state
to another when external parameters are suitably varied. On
page 58, a misleading aside on entropy and order intervenes;
this is best totally disregarded. "Mechanics of epigenetic con-
trol" yields quite a few misprints even on first sight; and
more dangerously, wrong mathematics right at the beginning, in
the study on open systems with chemical kinetics (page 87). And
there is a reference to a non-existent figure 2a which is sup-
posed to show a stable point in phase space, whereas both fig-
ures 2 show instabilities.... However, the varieties of chem-
ical kinetics considered can make this chapter useful as a
source of ideas, if one is careful not to take the results on
faith. "Metabolism-repair systems" is a super-formalised ac-
count of input-output systems representing cells, and might
suit the reader who demands no biology in her mathematics.

On the whole, this is a book quite dispensable to developmen-
tal biologists.

V. Nanjundiah
This is an unchanged reprinting of a book first published in 1932, which is still a classic in its field. The author has provided a new 8-page introduction, and has added as an appendix the well-known and thoughtful 36-page article by Reeve and Huxley entitled "Some Problems in the Study of Allometric Growth" and first published in 1945.

The book is printed with great care. The indexes are the original ones and do not refer to the appendix.

A critical review of this remarkable book could only be written by a mathematician of equal distinction as the author, who would also have to know a lot about biology. It is clear, therefore, that we can do no more than highlight some of its major features.

The author is a distinguished mathematician whose main interest is in problems of form (or geometry) as they are encountered in biology, linguistics, psychology, etc. He is a confirmed anti-reductionist and a proponent of qualitative versus quantitative thinking, and for this reason alone is bound to meet with opposition from many contemporary scientists. He points out, however, that rigorous qualitative thinking has been made possible by the recent progress in differential calculus and topology. The type of dynamic model he proposes in the book has its phase space defined by means of the values of "observable" ("macroscopic") parameters, without reference to the infinitely complex underlying structures. Once we accept the validity of this approach the results are surprising and illuminating.

In his foreword the author states that the book provides a mathematical substructure for d'Arcy Thompson's "On Growth and Form". He adds that Waddington's notions of "epigenetic landscape" and "chreod" have been essential germinal points for this theory. Other inspiring authors were von Uexküll and Goldstein. In his English preface to the book Waddington gives the following characteristic:

Thom has tried to show, in detail and with precision, just how the global regularities with which biology deals can be envisaged as structures within a many-dimensioned space. He has not only shown how such ideas as chreods, the epigenetic
landscape, switching points, etc., which previously were expressed only in the unsophisticated language of biology, can be formulated more adequately in terms such as vector fields, attractors, catastrophies and the like; going much further than this, he develops many highly original ideas, both strictly mathematical ones within the field of topology, and applications of these to very many aspects of biology and of other sciences.

Thom takes the standpoint (chapter 8) that geometrical or field phenomena are a reality throughout living nature which is brought to light by topology, and that we can describe such phenomena and determine their formal properties and developmental laws without asking, for the time being, what is their ultimate nature (much as physicists use the gravitational laws with success without yet having the remotest idea what gravity is). Such a standpoint, if proved valid, would of course also have far-reaching philosophical implications.

As to the actual content of the book, we will restrict ourselves to a few remarks. In chapter 9 the author applies his topological concepts to gastrulation in amphibians, to the comparative gastrulation of vertebrates, to neurulation and dorsal axis formation, to induction and individuation, and to some problems of late morphogenesis. He comes up with topological models for most of these processes which, he admits, are still very speculative and subject to verification. In chapter 10 he describes three classes of models for global organization of metazoan organisms (static, metabolic, and hydraulic) and discusses organogenesis and cellular differentiation. In chapter 12 he successively discusses finality, the irreversibility of differentiation, the origin of life, and evolution.

In the reviewer's opinion (which is admittedly largely intuitive, due to a lack of suitable mathematical training) this rich and important book may well on the long run initiate a major revolution in biological thinking generally and in the approach to morphogenesis in particular.

6.

The author of this intriguing monograph is a physicist with a thorough knowledge of molecular biology and biophysics. The book is concerned with the basic and topical question whether cell differentiation and morphogenesis can be explained entirely on the basis of the specific properties of individual cells as determined by their biochemical activities, or whether it is necessary to invoke less specific global or supracellular principles (e.g. fields or gradients). The author is a confirmed proponent of the former view, and here presents a theory which is intended to bridge the gap between genetics and embryology directly via molecular biology. The theory is best characterized as a molecular automaton theory. Because of its extreme complexity it is impossible to give a complete review here; instead, we restrict ourselves to highlighting some of its salient features.

The book is entirely hypothetical in character, and the author concedes that this theory is supported by indirect evidence only. The central chapters of the book will make tough reading for most,
but large parts of it can be read without going deeply into the mathematical procedures used. The author very usefully suggests several shortened "reading routes" for various categories of readers.

The theory is based in large part on a generalization of Sperry's "chemical neurospecificity" hypothesis, in conjunction with Weiss' "molecular ecology" concept. The underlying tenet is that each individual somatic cell in a metazoan organism (with certain exceptions) is chemically uniquely specified, and that this specification is under genetic control from the beginning of development in a completely specific, non-random manner. The specification is postulated to be due to "cell-unique proteins", and is called "microdifferentiation" (this concept excludes all types of morphological and chemical differentiation hitherto distinguished, which are all brought under the heading of "gross differentiation"). On the basis of a sophisticated model for the structure of eukaryotic chromosomes and for the transcription process the author argues that the organism contains more than enough DNA to specify $10^{12}$ chemically distinct cells (on the auxiliary hypothesis that the one-cistron - one-polypeptide rule does not hold for cell-unique proteins).

On this foundation a huge theoretical superstructure is then erected, which makes use of a multitude of newly coined terms and concepts, and encompasses no less than 36 "fundamental hypotheses". A central part of the theory is a basically simple, but very elaborate "process algorithm" for the explanation of microdifferentiation. This is based on the notion of a "developmental tree" (with numerous "sub-trees"), a cell genealogy defined by the use of enumeration techniques.

Among other things, the theory envisages asymmetrical mitoses which ensure that the derepressed state of a particular gene is passed on to one of two daughter cells and its descendents. At certain times hypothetical "inductive stimulus substances" of relatively low specificity, produced by cells other than the generator cell of a sub-tree, trigger off further development of the sub-tree in question. The cytoplasm is assumed to play no role whatsoever in the selective derepression of the genes concerned in microdifferentiation (in contrast to those involved in gross differentiation, but here the controlling cytoplasmic constituents would again be cell-unique proteins).

The cell-unique proteins are postulated to serve as components of two basic types of structure: "protein chains" and "molecular maps". The former are predominantly intracellular and, among other things, can specify intracellular axes (e.g. the polar axis of the egg). The latter are assumed to constitute the bounding layers of triple membranes, located both internally and at the cell periphery; in the latter position they are responsible (in conjunction with "protuding protein chains" attached to them) for cell recognition, cell matching, cell contacts, and even morphogenetic movements (for which a number of auxiliary hypotheses are introduced). All these processes are thus ultimately under strict genetic control.

Apart from this rigid, genome-centered control system, which is basically a switching system, the theory also embodies continuous variables which are required to explain the flexibility of development (e.g. regulation, regeneration). Among these are the concentrations of cell-unique proteins, and the concentrations of "stabilizer substances"; the latter are less specific diffusible factors which, if present in amounts exceeding critical thresholds, can stabilize the derepressed states of genes. The author disagrees with those who invoke gradients
(particularly those based on diffusion) as primary causative agents in morphogenesis. He postulates that the synthesis of the diffusible factors which play a role in his theory ("inductive stimulus" and "stabilizer" substances) again depends indirectly on the presence of cell-unique proteins, which themselves are under strict genetic control in the way suggested earlier.

The author is of course aware of the fact that Sperry's "chemical neurospecificity" hypothesis is currently under attack, notably by Gaze. He claims, however, that on the basis of his theory a reconciliation of the views of Sperry (and partly of Weiss) with those of Gaze is possible. He rejects Weiss' modulation hypothesis and proposes instead a "principle of alternative matching" between chemically uniquely specified cells, which distinguishes between optimal and suboptimal matching of cell surfaces.

The theory bears a pronounced unitarian stamp and encompasses several biological problems falling outside embryology in the strict sense, such as antibody formation, connectivity in the nervous system, and cell contacts generally. The embryological areas of application are reaggregation and cell sorting, morphogenetic movements, establishment of embryonic axes, and developmental stability and regulation. With respect to cell contacts the author extensively discusses the views of Curtis, with whom he disagrees to the point of becoming polemical. The latter two subjects are discussed on the basis of a few selected examples, mainly taken from the work of Driesch, Roux, and Hörstadius. The important problems of pattern formation and pattern regulation are treated only in the most general manner, without suggesting detailed mechanisms. This is definitely a weak point in the whole theory.

The theory certainly is novel and ingenious, and involves the reversal of several traditionally accepted views. On these accounts alone, at least its basic assumptions deserve the attention of developmental biologists, if only to stimulate further discussion of these important problems. Only the future can show to what extent the theory is valid as it stands, but it may be a long time before it can be critically tested by experiment.

7.
A.I. ZOTIN. 1972. THERMODYNAMIC ASPECTS OF DEVELOPMENTAL BIOLOGY Karger, Basel, etc. Monographs in Developmental Biology. Vol.5. VIII, 159 pp., 30 figs., 23 tabs. Sfr. 66.00, $ 18.50, £ 7.30

Contents: I. Thermodynamics of irreversible processes: basic information; II. The Prigogine-Wiame thermodynamic theory of growth and development; III. Constitutive approach of the living systems to the final stationary state; IV. Constitutive deviation of living systems from the steady state; V. A possible molecular mechanism of the constitutive processes; VI. Thermodynamic theory of growth

This interesting monograph is devoted to an elaboration of the ideas of Prigogine and Wiame, who in 1946 suggested that the main equations and concepts of the thermodynamics of irreversible processes might be applicable to animal growth and development. The author is head of the Laboratory of Biophysics, Institute of Developmental Biology, Academy of Sciences of the USSR. He and his colleagues have published a considerable amount of experimental and theoretical work on the metabolism and ener-
getics of various phases of vertebrate development. For the illustration of his ideas the author preferentially uses examples from this work; he also extensively covers the Russian theoretical work in this area.

The emphasis in the treatment lies on the "growth" aspects of development. Interactions between growth and differentiation are only considered in the penultimate section of the last chapter. The main tenet of the book is that development and ageing can be equated to a continuous ("constitutive") decrease of the energy dissipation function, and consequently of the specific rate of entropy production. Conversely, oogenesis, regeneration, and malignant growth would all represent "rejuvenation", involving an increase of the dissipation function at the expense of coupled processes in other parts of the system. Proper attention is devoted to the definition of such concepts as "steady state" and "stationary state", in connection with homeostasis and homeorhesis. These ideas are adstructed with numerous experimental data in chs. III through V. Ch. VI discusses several old and modern types of growth equations from the viewpoint of thermodynamics.

The book is written in English that is perfectly readable though not idiomatic. There are rather many printing errors. The bibliography has about 500 titles. There are no indexes. The book is rather expensive.

Symposium reports

8.


These lectures were delivered at a Symposium held in Chicago in December, 1970. We will only consider the three papers that have a bearing on developmental biology. The two papers by L. A. Segel and by A. Robertson deal with slime molds (the former also partly with bacteria) and are partly simplified presentations of published material, though the second paper contains preliminary experimental data that were new at the time of writing.

Segel and Robertson deal with their subject from quite different viewpoints. Segel formulates models for the initiation of aggregation in homogeneously distributed populations of amoebae, and his approach is based on random perturbations and is related to the earlier work of Turing. Robertson essentially deals with the whole slime mold life cycle and his starting point is the periodic secretion of cyclic AMP. He presents no new models but clearly favours the phase-shift model of Goodwin and Cohen for the interpretation of his findings. Incidentally, both papers contain interesting remarks on some conditions under which mathematics can be useful for biology.

B. C. Goodwin takes his starting point in experimental results of R. M. Gaze on the retina-tectal projection in amphibians. He subjects these to a qualitative analysis in terms of two different models, a double-gradient model and Goodwin and Cohen's phase-shift model, and uses the results to tentatively discriminate between the two types of model for this particular system.
The Symposium on which this book is based was held in Philadelphia in December, 1971. The only lecture which is of direct significance to developmental biologists is that by R. Thom entitled "A global dynamical scheme for vertebrate embryology". Although the paper is very condensed (it covers only 43 small pages) and presupposes considerable mathematical knowledge, it may be useful as a first introduction into Thom's thinking, particularly for those to whom his recent book (see review nr. 5) is inaccessible for linguistic reasons. In fact, the article is in part a further elaboration of that portion of the book that deals with embryos.

Thom starts from the topological theory of "catastrophes", i.e. of those characteristic discontinuities which arise in the solutions of systems of differential equations with macroscopic parameters. He then applies this theory to the following phenomena: amphibian and avian gastrulation and their homology, bilateral symmetry in the mesoderm, notochord formation, formation of the axial system, closure of the neural tube, and heart formation. In his concluding remarks the author anticipates the objection that he uses finalistic reasoning as follows: "even if you allow yourself all the facilities of teleological thinking, you are still very far from explaining development. For embryology is full of enigmatic structures, of transient morphologies, which do not seem to have the slightest biological usefulness. Catastrophe theory may help in interpreting these structures, as it describes the basic and universal constraints of stability imposed on epigenetic mechanisms".

10.
Essays
Edinburgh Univ. Press, Edinburgh. VI, 299 pp., 74 figs., 3 tabs., author and subject indexes. £ 5.50

Participants: Arbib, Conrad, Cowan, Elsdale, Fowler, Goodwin, Kauffman, Pattee, Thom, Waddington, Wolpert, Zeeman

This is the last of a series of volumes emerging from the IUBS Symposia held in Bellagio, Italy in the years 1966 through 1969. The first three volumes were reviewed in Gen. Embryol. Inf. Serv., Suppl.13, 1970, p.12/13. The present volume contains 13 essays partly based on, and partly grown from the presentations given at the Symposium.

The volume has more unity than the preceding ones, both as to style and content. In an epilogue Waddington presents his personal interpretation of the particular types of question and frameworks of thought that seemed to emerge towards the end of the series of Symposia. The focal point is the confrontation of microstates and macrostates of biological systems, and more particularly "the ways of handling simple macrostates without having to break them down into an unmanageable plethora of vastly complex microstates". Waddington points out that the "structures mediating global simplicity" may perhaps be clarified with the help of the analogy of language, a procedure which is prominent in several of the contributions.

Most of the contributions deal either with morphogenesis or
with the operations of the nervous system. The following contributions seem to be of particular significance to developmental biologists: Thom on structuralism and biology; Wolpert on positional information; Elsdale on inherently precise morphogenetic processes in fibroblast cultures; Waddington on form and information (with brief comments by Thom and Wolpert); and Arbib on organizational principles for theoretical neurophysiology.

PLANT DEVELOPMENT (general) (see also 1,98,121,124)

Treatises


We mention this book because it contains three chapters that may be of great interest to plant developmental biologists generally. All of them are well organized and have extensive bibliographies.

The chapters in question are that on the development of gymnosperm seeds by Singh and Johri (55 pp.), that on the development of angiosperm seeds by Bhatnagar and Johri (72 pp.), and that on seed germination and morphogenesis by Berlyn (90 pp.). In all three the emphasis is on morphology and cytology, but biochemical aspects are also considered. Seed development is broadly defined, starting with the pre-pollination ovule and including the fertilization process. Most of the chapter by Berlyn is taken up by a detailed description of germination in Zea and Pinus, in which much attention is given to the establishment of the primary plant body with its shoot and root apices.

The three chapters are profusely illustrated, the first two mainly with excellent line drawings, the third also with photomicrographs and electron micrographs. The bibliographies are up to date until 1969/70. Vol. II contains, among other things, chapters on the environmental control of germination and on the metabolism of germinating seeds.

Textbooks


Very apt summary of current state of problems, in simple but stimulating style; good photographs and drawings using various shades of colour; reading list; meant for high-school and beginning University students.

13. R.KANDELER. 1972. ENTWICKLUNGSPHYSIOLOGIE DER PFLANZEN De Gruyter, Berlin, etc. Sammlung Göschen Ed. 7001. 160 pp., 50 figs., subject index. DM 14.80 (paper)

This concise introductory text is meant for advanced students and for biologists who desire a rapid orientation in the field of plant development. Selected classical and modern findings are synthesized with didactic clarity. The treatment starts at the
molecular level and advances through subcellular units, cells and tissues to the whole plant. The first section covers about one third of the book and considers enzymes, cell membranes, the major plant hormones, other chemical messengers, and environmental factors. The next longest section is that devoted to the whole plant. All major aspects are duly considered, except regeneration from single cells. The treatment is restricted mainly to higher plants.

The figures are judiciously selected and are provided with lengthy captions, making them more or less independent from the text. At the end of the book there is a good eight-page classified bibliography for further reading, consisting of books and review articles in English and German.

14.
T.A. STEEVES and I.M. SUSSEX. 1972. PATTERNS IN PLANT DEVELOPMENT Prentice-Hall, Englewood Cliffs. XVIII, 302 pp., 121 figs., 4 tabs., combined subject and author index. $ 10.95, £ 5.6.


This book is the companion volume of a book in the same series, entitled Control mechanisms in plant development (Galston and Davies, 1970, reviewed in Gen. Embryol. Inf. Serv. vol. 14, 1971). This enabled the authors of the present book to adhere strictly to a structural viewpoint. As a result, they could go much more deeply into problems of structural organization than is customary in introductory texts. This makes their book particularly interesting for non-botanists, because it is in this area that the most striking parallels between plant and animal development are found.

The authors use the organismal approach throughout, with emphasis on experimental morphology rather than physiology or biochemistry. Their style is lucid and captivating, and they use considerable common sense in pointing out the dangers of oversimplification and theorizing. Numerous areas where more knowledge is urgently needed are indicated. The treatment is restricted to the vascular plants, but within this group many different types of organization are considered.

All chapters are concluded by a thoughtful comment and a selective reference list through which the student is brought into contact with the germinal literature, both older and recent.

The book is very well produced and profusely illustrated with good line drawings and photographs provided with explanatory captions. The price is very reasonable.
15. W.A. JENSEN. 1972. THE EMBRYO SAC AND FERTILIZATION IN ANGIOSPERMS
Harold L. Lyon Arboretum, Univ. of Hawaii, 3860 Manoa Rd., Honolulu. Harold L. Lyon Arboretum Lecture no. 3. 31 pp., 14 figs.
$ 5.00 (paper)

Well-illustrated review based mainly on recent ultrastructural work by the author and his associates in Berkeley, and by H.F. Linskens and associates in Nijmegen, Netherlands.

16. R. MAKSYMOWYCH. 1973. ANALYSIS OF LEAF DEVELOPMENT
Cambridge Univ. Press, Cambridge, etc. Developmental and Cell Biology Series 1. XIV, 109 pp., 62 figs., 6 tabs., combined index. £ 3.80, $ 12.50

This is the first volume in a new series edited by Abercrombie, Newth, and Torrey. It is based primarily on original research carried out for over a decade on one particular object, the leaf of Xanthium, and its most interesting feature is that it combines morphological, cellular, and metabolic approaches, all rigorously quantitative in nature. Throughout the book an indirect timescale of development is used, the plastochron index originally developed by Erickson and Michelini.

The book is in two parts, each consisting of 12 brief chapters. The first part deals with morphological patterns, the second with physiological aspects. Some of the topics considered in part 1 are leaf initiation, cell lineage in the marginal and plate meristems, cell division, enlargement, and differentiation, and the correlation of these processes. Part two considers, among other things, DNA synthesis (thymidine incorporation), chlorophyll synthesis, respiration, enzyme synthesis, and the role of plant hormones in leaf development.

The book is very well produced and illustrated. Other volumes of the series are anticipated with interest.

17. H. MOHR. 1972. LECTURES ON PHOTOMORPHOGENESIS
Springer, Berlin, etc. XII, 237 pp., 219 figs., 22 tabs., subject index. DM 46.60, $ 14.80, £ 7.50

The term photomorphogenesis covers much more than the development of form under the influence of light: it includes phenomena at all levels of analysis. In plants the phytochrome concept is central to photomorphogenesis, but a really comprehensive and up to date account of this concept was not available. The present book admirably fills this gap. It is based on a series of 24 lectures given by the author in 1971 at the University of Massachusetts; the format of lectures has been retained in the book. The emphasis is on developmental physiology and on the significance of phytochrome research within the area of general molecular biology; historical aspects were omitted unless essential.

Every conceivable aspect of phytochrome research is duly considered, with emphasis on the organism used by the author and his associates: the mustard seedling. The subject is discussed with great authority and didactic clarity against a broad biological background, and the book contains much that is of interest to developmental biologists generally. To mention a few examples: phytochrome-mediated enzyme induction and repression, and modulation of metabolic steady states; interactions with
plant hormones; RNA/protein synthesis and cell stretching; threshold mechanisms of various kinds; primary and secondary differentiation (i.e., competence for hormone action, and biochemical differentiation, respectively); flavonoid synthesis as a model for biochemical differentiation; energetics of morphogenesis (thermodynamical considerations); blue-light-mediated photomorphogenesis; and general considerations of genes and the environment.

The book is well printed and very well illustrated. It has a bibliography of over 300 titles, and in addition each lecture is concluded by a brief list of suggested further reading.

**Dissertations**

18. J. PARÉ. 1972. CONTRIBUTION A L'EMBRYOLOGIE DES CRUCIFERES, Nouvelles recherches sur la transformation de l'ovule en graine chez le Draba verna L.

D.E.S. thesis, Univ. of Picardia (France). 80 pp. (mimeographed), numerous very good drawings

Detailed descriptive study of embryogenesis; cell lineage; rates of cleavage; development of albumen.

**Symposium reports**

19. H. KALDEWEY and Y. VARDAR, eds. 1972. HORMONAL REGULATION IN PLANT GROWTH AND DEVELOPMENT

Verlag Chemie, Weinheim. XII, 524 pp., 176 figs., 80 tabs., author and subject indexes. DM 85.00, £ 11.42

This volume embodies the proceedings of the NATO Advanced Study Institute held at Izmir, Turkey in 1971. The participants came from 17 countries in three continents. Although it is difficult to judge for an outsider, the list of contributors suggests that many were relatively young workers, which may add interest to the book for those well-established in the field. The aim of the organizers was to cover the entire field indicated by the title. K.V. Thimann says in the preface: "Our field has reached a stage of great complexity, and the papers in this volume represent in many respects a phase of much-needed consolidation rather than of the opening up of completely new horizons".

Most of the 40 papers are research reports averaging about 10 pages in length, while some are condensed reviews of recent work. All papers are followed by group discussions. The papers are grouped in eight sections as follows: I. Basic problems of growth promotion and growth inhibition (4 papers); II. Transport and excretion problems (6); III. Growth regulation in shoots and roots (4); IV. Mode of action of auxins, gibberellins, and cytokinins (7); V. Mode of action of ethylene, abscisins, and morphactins (6); VI. Plant movements and correlations (6); VII. Flowering, fruiting and ageing in plants (6); VIII. Growth regulation in sugarcane (1).

The book is produced in offset print and is not inordinately expensive. The illustrations have come out well, even the electron micrographs. Literature quoted in the discussions is not incorporated in the reference lists. The subject index was prepared with great care.
INVERTEBRATE DEVELOPMENT (general) (see also 63,69,83,84,106, 120,136)

Treatises


Contents Vol.1: 1. Oogenesis (Mahowald); 2. Development of ap- terygote insects (Jura); 3. The development of hemimetabolous insects (Anderson); 4. The development of holometabolous in- sects (Anderson); 5. Polyembryony in insects (Ivanova-Kasas)
Contents Vol.2: 1. The causal analysis of insect embryogenesis (Counce); 2. The development of spatial patterns in the integ- ument of insects (Lawrence); 3. The imaginal discs of Drosophila (Oehring and Nöthiger); 4. Role of hormones in insect development (Doane); 5. The morphogenesis of patterns in Drosophila (Waddington)

"Insects have been utilized for experimental studies of devel- opment for more than seventy years. Yet much significant work of general interest remains virtually unknown to biologists outside the field itself. The aim of these volumes is to provide, for both specialist and neophyte, detailed and critical analyses of several aspects of the developmental biology of insects." Thus begins the preface of this collaborative treatise, which will no doubt be very welcome also to those who do not actually work with insects. As will be seen from the table of contents the au- thors could not have been better selected. For reasons of size limitation areas such as regeneration, metamorphosis, cytology, developmental genetics, and biochemistry are not given separate chapters, though each is considered in several places. Detailed
technical information also could not be provided, as this would have been at the expense of depth of treatment.

There is little or no overlap among the chapters and adequate cross-referencing, and the coverage is remarkably complete in all chapters. The chapters in vol.1 are essentially descriptive in content. In vol.2 problems of pattern formation loom large, and several authors point out how well insect systems are suited for such studies, both at the morphological and (potentially) the biochemical level.

As is unavoidable in a book such as this with a long "incubation time", not all chapters are equally up-to-date; some chapters have addenda while others do not. The books are profusely and beautifully illustrated.

Monographs

22. G.GIUDICE. 1973. DEVELOPMENTAL BIOLOGY OF THE SEA URCHIN EMBRYO Academic Press, New York, etc. X, 469 pp., 148 figs., 26 tabs., subject index. $ 32.00


This book is the first comprehensive review of sea urchin development to appear since 1956. The author has himself worked with sea urchin embryos for at least 15 years. He has judiciously selected from the huge literature that portion that has either stood the test of time or holds promise for the future. This work he evaluates carefully, pointing out uncertainties and major unresolved problems. Just because it is more than a mere compilation, the book will be invaluable as a source for both research and teaching.

The treatment of the classical experimental-morphological data is concise, and most of the attention goes to the more recent cell-biological and biochemical work. It is fortunate that Hörstadius has just published a book in which the former aspects are treated much more extensively (see review no.23); the two books admirably complement each other.

A special feature of the present book is the attention devoted to details of biochemical methodology; this is of course essential to a correct interpretation of the numerous molecular-biological data. Here the reader benefits from the author's extensive first-hand experience.

The book is well produced and illustrated. The bibliography has more than 1,600 entries and is updated to 1972 in an appendix. The subject index is rather short, which somewhat reduces the value of the book as a work of reference.


This scholarly monograph is mainly concerned with the large body of results obtained from sea urchin embryos since the end of the last century by means of delicate operations and simple chemical treatments. Most of this work is now considered classical, but is has never before been reviewed so extensively. The author, to whom we probably owe the greatest individual contribution to this field, has provided a synthesis which clearly brings out that the subject is much less simple than most textbooks suggest, and that many intriguing problems remain to be solved.

The physiological aspects of sea urchin development are only touched upon where this is necessary for the interpretation of essentially morphological results. Those who want more information on these aspects should consult Giudice's recent book (see review nr. 22); this however largely lacks the historical perspective which is an interesting feature of the present book.

Although most of the book deals primarily with the Echinoidea, chapter 8 also reviews work on Asteroidea, Holothuroidea, and Crinoidea. Chapter 9 mainly reviews the classical work on mero-gones and hybrids with particular reference to viability and morphology.

The book is attractively produced and illustrated with numerous good line drawings. It has a bibliography of more than 450 titles.


Extensive study of the reproductive biology of animals held in captivity; spermatophores, insemination; anatomy of "ovario-uterus", follicular cycle, macroscopic staging of embryos within the mother (no illustrations); postembryonic stages (photographs), moulting time, growth; histology and brief description of development of poison-gland.


Study encompassing blastula, gastrula, early trophophore, various premetamorphic stages, metamorphosis, and pelagosphera larvae of various ages; histogenesis of organs and structures; com-
parison with other sipunculans, annelids, and molluscs; good photomicrographs based on thin Epon sections.

Dissertations

Collections of papers

Books of readings

VERTEBRATE DEVELOPMENT (general)

Textbooks
29. W.W. MATHEWS. 1972. ATLAS OF DESCRIPTIVE EMBRYOLOGY Macmillan, New York; Collier-Macmillan, London. X, 139 pp., 137 figs., combined index and glossary. $4.95, £2.70 (paper)

This atlas was designed for use in embryology courses along with a suitable text and laboratory manual. It is not intended to replace the first-hand study of embryos. It has no text and consists almost entirely of photographs of whole mounts and sections. The inclusion of a chapter on sea urchin development is a useful feature.

The first two chapters deal with gametogenesis in mammals, and with maturation and fertilization in Ascaris. Ch. 3 deals with sea urchin development (whole mounts of oocyte through late pluteus), and ch. 4 with early development of the frog (through tail bud). Consecutive chapters then treat frog embryos (4 and 6-7 mm), chick embryos (stages 5, 8, 11, 15, 18, 21), and finally the 10 mm pig embryo.

The photography is superb throughout. Line drawings show the
levels of sectioning. An extensive index and glossary identifies and defines over 450 embryonic structures, and at the same time provides a synopsis of their development.


That a second, enlarged edition of this book appears so soon after the first (1970, see Gen. Embryol. Inf. Serv. Suppl. to vol. 13, 1970, p. 15) shows that it fills an urgent need. The book is now almost 140 pages longer and has many more illustrations. The text has been improved wherever necessary, making use of the suggestions of many of the author's colleagues.

The major addition is a separate chapter on the general and comparative embryology of the vertebrates, with a 44-page section devoted specifically to human development. Other extensions are in the areas of basic cytology and molecular biology, and elementary developmental genetics.

Many of the old illustrations have been regrouped or reproduced on a larger scale. Twelve very good coloured plates have been added, which in graphical form summarize data on the prospective maps, gastrulation movements, extra-embryonic membranes, and placentation of the major vertebrate classes and mammalian orders.


This atlas is based on a nearly complete manuscript by the late Olive Stull Davis of Purdue University, finished and edited by Skold and Künzel. Therefore, Dr. Davis should have been given as the author.

The atlas consists of photomicrographs of sections of the 48-hour chick and 10-mm pig embryo. Special features are (1) the inclusion of a large number of sagittal sections in addition to the transverse ones, and (2) the selection of sections to form a more or less continuous picture (the levels shown are sometimes as close as every third section, sometimes much farther apart). For the chick there are 47 transverse and 16 sagittal sections; for the pig these figures are 81 and 31, respectively. All photographs are fully labelled and accompanied by an adequate explanatory text.

The photographs are no more than adequate. The majority are too pale and have lost too much contrast in reproduction; some seem to be out of focus. As a result several of the more minute labelled structures are hardly discernible. Otherwise the book is well produced. There are separate indexes to the pictures of the two species.

32. R.L. WATTERSON and R.M. SWEENEY. 1973. LABORATORY STUDIES OF CHICK, PIG, AND FROG EMBRYOS. 3rd edit. Burgess, Minneapolis. VIII, 205 pp., 19 figs., 38 pls., 4 tabs., subject index. $ 6.95 (spiral bound)

The appearance of a third edition of this laboratory manual so soon after the second (1970) testifies to its success. The basic
plan has remained unaltered, but large sections of the text have been rewritten and expanded. This particularly holds for the section on the chick embryo, which now incorporates much recent information on oogenesis, ovulation, early morphogenetic movements, and inductive interactions. This basic section can now be used without reference to other textbooks.

The number of text figures has been augmented from 9 to 19, and the new figures are excellent. The plates are now printed on glossy paper and are thus even better than in the second edition. A list of 25 research references, all pertaining to chick development, has been added and another new feature is the alphabetical index containing the majority of the terms printed in bold face in the text.

Dissertations

33. W. MAGER. 1972. EXPERIMENTELLE UNTERSUCHUNGEN ÜBER DEN EINFLUSS DES pH-WERTES AUF DIE DIFFERENZIERUNGSLEISTUNGEN DES AMPHIBIEN- EKTODERMS
Ph.D. thesis, Cologne. 75 pp., 7 figs., 8 tabs.

Treatment of isolated blastula and gastrula ectoderm of Ambystoma mexicanum and Triturus vulgaris for 4 hrs with Holtfreter solution with or without LiCl (0.06 M/l) at pH values ranging from 3 to 10; subsequent culturing in Holtfreter solution for 13-18 days to study differentiation.

DEVELOPMENT OF MAMMALS AND MAN (general) (see also 56, 60, 80, 112, 116, 134)

Textbooks

34. C.R. AUSTIN and R.V. SHORT, eds. 1972. EMBRYONIC AND FETAL DEVELOPMENT
Cambridge Univ. Press, London. Reproduction in mammals, Book 2. VIII, 158 pp., 44 figs., 6 tabs., subject index. £ 3.40 (cloth), £ 1.30 (paper)

Contents: 1. The embryo (McLaren); 2. Sex determination and differentiation (Short); 3. The fetus and birth (Liggins); 4. Manipulation of development (Gardner); 5. Pregnancy losses and birth defects (Austin)

This series of five small textbooks was written mainly for the use of undergraduate students, but is eminently suited for specialists in other fields to update their knowledge of mammalian and human reproduction. (See also review nr.126.)

The volume under review was written by five of the best known specialists in the field. They have made every effort to select the most significant material and to stress the most recent advances, all this with admirable clarity and in a pleasant style. Chs.1 and 4 devote special attention to the still young branch of mammalian experimental embryology which was initiated by the advent of better techniques of in vitro culture.

The numerous excellent drawings and schemes were especially prepared for this book by John R. Fuller. All chapters are concluded by useful lists of further reading. The book is well produced.
This textbook for undergraduates is a successful attempt to integrate into one whole a variety of material that is not usually found in more traditional books. The "unusual" material relates to cell reproduction, chromosome function, and molecular biology (an excellent outline) and includes an outline of genetics, polygenic inheritance, and even some population genetics. These together make up part 1 (92 pp.).

Part 2 (61 pp.) deals with the uterine cycle, the control of reproductive rhythm, fertilization, early development, and implantation. It is concluded by a brief chapter on interacting systems in development. In part 3 (134 pp.) organogenesis proper is treated. The most common errors of development are briefly reviewed for each organ system. Two final chapters deal with postnatal development and with the interaction of heredity and environment in normal and abnormal development and twinning. Throughout the book the relevance of developmental biology for the study of medicine is stressed.

The book is illustrated with simple but very adequate line drawings. It has a brief but useful classified bibliography which includes a list of books for further reading.

It is ten years since the third edition of this justly famous book appeared (although it was reprinted with revisions in 1966). For the present edition the whole text has been extensively revised, and more attention is devoted to functional aspects throughout. There is a new chapter on the physiology of the placenta. The chapter on the cardio-vascular system has been recast, and that on the urogenital system extensively modified.

More than 60 new photomicrographs and more than 30 new drawings have been added, and many of the older illustrations have been enlarged and relabelled. A new feature is the inclusion of brief surveys of early development and organogenesis in tabular form against ovulation age and embryo size, appended to most chapters.

The book is produced in the usual excellent fashion.

Essentially a photographic atlas of early mammalian development including gametogenesis and fertilization; 5 laboratory and 6 domestic mammals, monkeys, and man; brief text.
38. G. MICHEL. 1972. KOMPENDIUM DER EMBRYOLOGIE DER HAUSTIERE
Fischer, Jena. 371 pp., 227 figs., 15 tabs., subject index. DM 28.00

This book is a revised version, under a new title, of a book first published in 1968 and briefly reviewed in Gen. Embryol. Inf. Serv. 13, 1969, p.319. The basic scheme of the book has remained unaltered, but all chapters were revised. The material relating to the chromosomes, originally included under fertilization, is now incorporated in a short new chapter ("Einige allgemeine Prinzipien der Entwicklung") together with brief discussions of molecular genetics, the cell cycle, cellular differentiation, and growth.

Sixteen new figures were added. The reproduction of the photographs is no better than in the first edition, while that of the line drawings is sometimes too dark.

39. R. S. SNELL. 1972. CLINICAL EMBRYOLOGY FOR MEDICAL STUDENTS
Little, Brown, Boston. XII, 360 pp., 246 figs., subject index. $ 4.50

The phrase "clinical embryology" in the title of this book is somewhat odd, but it reflects that the book is a concise, simple account of human development from the clinical point of view. One of its features is that most chapters contain descriptions of the more common congenital anomalies which a practising physician is likely to encounter.

The book is purely descriptive in character and its organization is conventional. There are brief separate chapters on multiple pregnancy; growth and development of the fetus; childbirth; changes that take place at birth; and early recognition, incidence, and etiology of congenital malformations. All chapters have reference lists for further reading; some are quite extensive; they are useful, though often the most recent important literature is not included.

The illustrations are for the most part simple, diagrammatic, but very clear line drawings. The book is well produced; a paper-bound edition is also available.


This is the English translation of a successful French textbook, the revised 2nd edition of which appeared in 1968 (see Gen. Embryol. Inf. Serv. 13, 1969, p. 318). It is essentially a graphic atlas consisting of very clear two- and three-dimensional diagrammatic drawings supplemented by good photographic material. Colour is used judiciously in almost all drawings, and the whole is didactically very satisfactory. The text is brief and factual. Adequate attention is given to developmental anomalies and foeto-maternal relationships, and aspects of experimental embryology, comparative placentology, and molecular biology are briefly treated.

The translation is no more than adequate; it is often too literal and there are frequent slips. For instance, the notochord is not "formed from" but isolates itself from the entoderm (p.23), and on p.41 part of a sentence has dropped out, making
the rest unintelligible. The translation of "ébauche" by "out-
line", of "matériel" by "substance", and of "enchaînement" by
"linkage" is unfortunate.

The book is produced in the same format as its French original.
For a review of Vol.II see nr.41 below.

41.
H.TUCHMANN-DUPLESSIS and P.HAEGEL. 1972. ILLUSTRATED HUMAN
EMBRYOLOGY. Vol.II Organogenesis, translated by L.S.Hurley
Springer, New York; Chapman & Hall, London; Masson, Paris. IX,
154 pp., 309 figs., subject index. $ 12.70, DM 28.10 (paper)

The general features of this volume are the same as those of
vol.I (see review nr.40 above). Each organ system is traced back
to its earliest beginnings, thus providing links with vol.I. The
systems are treated in the following order: Skeleton and muscles;
Face and stomodaeum; Digestive system (with associated exocrine
and endocrine glands); Respiratory system; Urinary system; Geni-
tal system (primitive, male, female, sexual differentiation);
Circulatory system (including hematopoiesis); Ectodermal deriva-
tives (including anterior hypophysis). The most frequent congen-
ital malformations are clearly illustrated and briefly described.
There are timetables for the digestive system and cardiac devel-
opment, and a diagram showing the role of hormones in sexual dif-
ferentiation. Sexual anomalies of genetic and hormonal origin
are briefly described.

The translation is difficult to judge because the original is
not available, but it seems adequate. On page 29 there is some
confusion over the contribution of the fourth pharyngeal pouch
to the thymus or thyroid.

Vol.III will deal with the nervous system and sense organs
(morphology and function), neuroendocrine correlations, func-
tional development of the hypophysis, and the paraganglionic
system and adrenal gland.

Monographs

42.
F.GJESDAL. 1972. AGE DETERMINATION OF SWINE FOETUSES
29 pp., 18 figs., 5 tabs.

Forensic study based on 519 Norwegian landrace swine fetuses
of known age; parameters studied on X-ray photographs: ossifica-
tion sequence (table), length of vertebral column, cranium, hu-
merus, femur, radius and tibia, tooth development (table); sta-

tistical analysis.

43.
M.OUNSTED and Ch.OUNSTED. 1973. ON FETAL GROWTH RATE (its vari-
ations and their consequences)
Spastics Int. Med. Publ.; Heinemann, London; Lippincott, Phila-
delphia. Clinics in Developmental Medicine Nr.46. XII, 204 pp.,
78 figs., 47 tabs., subject index. £ 3.60

Contents: 1. General factors; 2. The placenta; 3. Maternal-
fetal interactions; 4. Maternal factors at the extremes of
fetal growth rate; 5. Familial factors; 6. Hypotheses; 7. The
Implications

This book is the outcome of a research project supported by
the Nuffield Committee for the Advancement of Medicine, Univer-
sity of Oxford. It is mainly of interest to obstetricians and paediatricians. The book's aim is "to explore the factors asso-
ciated with variations in fetal growth rate, and to make a pre-
liminary examination of their peri-natal and post-natal sequelae".

Ch.1 considers the following general factors: ethnic groups; 
geographical situation; socio-economic factors; maternal factors; 
multiple pregnancy; fetal factors; growth curves. The authors' 
own studies are mainly described in chs. 4 and 5, together cover-
ing 33 pages. Experimental studies on other mammals relating to 
fetal-maternal interactions are discussed in ch. 3. The hypotheses 
discussed in ch. 6 relate to the following aspects: genetic poly-
morphism; ethnic variation; evolution; growth acceleration; gen-
der difference; antigenic dissimilarity; parity effect; role of 
Y chromosome.

The book is well printed and well illustrated. It has a bibli-
ography of over 500 titles.

44.

K. THEILER. 1972. THE HOUSE MOUSE, development and normal stages 
from fertilization to 4 weeks of age. 
Springer, Berlin, etc. VIII, 168 pp., 335 figs., subject index. 
DM 124.00, $ 39.40

This is the first complete Normal Table of mouse development 
to be published, and therefore will be welcome to many. We may 
be thankful to the author for undertaking this huge task single-
handed in the most thorough manner.

The book is subdivided into 26 chapters corresponding to as 
many stages of intra-uterine development, plus one chapter on 
the neonate and one on postnatal development (with brief des-
criptions at 7 and 24 days post partum). For the first 12 days 
most of the stages are half a day apart, while the later stages 
are one day apart. The material consisted of hybrid embryos ob-
tained by crossing two inbred strains (female: C57BL/6; male: 
CBA). Mating times were carefully controlled (+ 2 h; at least, 
this can be inferred from the preface; the section on procedure 
is not specific about it). As a rule the most advanced embryos 
in a litter were taken as being representative for an age group. 
All chapters contain a table listing the total material used for 
that stage, which allows evaluation of the stage criteria used 
and of the variability encountered (which may be very large). 
Equivalent Streeter horizons for human development are given 
wherever possible.

Each chapter has a concise but comprehensive text which con-
siders all essential aspects. For the later stages the text is 
conveniently subdivided according to organ systems. The earlier 
chapters contain additional data on the tubal and intra-uterine 
localization of eggs, on the structure of the corpus luteum, and 
on the endometrial reactions and placentation. Some histochemical 
information is also provided.

The illustrations, so important in a work of this kind, are of 
the highest quality, and all are original and based on the pre-
sent material. Numerous reconstructions and schematic diagrams 
are included to clarify complicated relationships. In fact, the 
later chapters provide a more or less complete developmental 
anatomy of the mouse (both gross and microscopic), which makes 
the book valuable for those working on particular organs (al-
though not all organs are traced back to their very first rudi-
ments). All figures are clearly labelled, but it is a pity that 
the letter labels on the photographs betray their German origin 
and are therefore often not self-explanatory to English-speaking
readers.

The book is beautifully produced and is concluded by a classified selected bibliography of 228 titles, to which reference is made throughout the text. (The references given for organogenesis appear somewhat arbitrary and important recent work is sometimes missed.)

Books of reading

MSS Inf. Corp., New York. Vol. I 205 pp., 60 figs., 2 pls., 64 tabs. $11.00; Vol. II 186 pp., 37 figs., 20 pls., 24 tabs. $15.00


In our copy of Vol. II, 16 pages are missing and the corresponding pages from a different volume take their place.

IMPLANTATION, PLACENTA, FETAL MEMBRANES (no entries, but see 43, 56, 60, 107, 108, 114, 125, 134, 135)

TERATOGENESIS (see also 96, 112)

Treatises

S.W.GRAY and J.E.SKANDALAKIS. 1972. EMBRYOLOGY FOR SURGEONS, the embryological basis for the treatment of congenital defects. Saunders, Philadelphia, etc. XVI, 918 pp., 650 figs., 72 tabs., subject index. $36.00, £15.30

Within the limits stated below, this monumental treatise is exactly what its title promises, and should be of interest to all human anatomists, obstetricians, and pediatricians. It is not intended as a book on pediatric surgery - the brief sections on treatment are only indications of the ends to be achieved. Rather, the aim has been to provide an organized account of over 200 congenital malformations against a background of normal embryology. An important point to be stressed is that the treatment is confined to internal organs and does not include the skin, nervous system, sense organs, skeletal and muscular systems, and extremities. Gross body malformations are not treated either. The reasons for these restrictions are not given, but may be obvious to surgeons.

The first chapter deals briefly with the incidence, classification, and etiology of congenital anomalies, with the gestational ages at which they arise, and with the ages and sizes of normal embryos. The rest of the book is a series of 27 chapters, each of which deals with a particular internal organ or organ system, with separate chapters on the anterior body wall, anomalies of sex determination, and body asymmetry in association with splenic anomalies.
Each of these chapters starts with a concise but up-to-date account of normal development, which is concluded by a brief summary of critical events. Wherever needed recent histochemical, ultrastructural, or experimental-embryological data are included. In the main part of each chapter each separate anomaly is usually treated successively from the viewpoints of anatomy, embryogenesis, history, incidence, symptoms, diagnosis, and treatment. Each chapter has a summary table of the anomalies described (stating time of origin and first appearance, sex chiefly affected, and relative frequency) and an extensive bibliography.

The book is beautifully printed and illustrated. The great majority of figures are taken from other authors, but there are several good original figures and diagrams. The subject index covers 21 pages.

47.
J. WARKANY. 1971. CONGENITAL MALFORMATIONS. Notes and Comments Year Book Med. Publ., Chicago. XL, 1309 pp., 660 figs., 12 tabs., subject index. $ 60.00, £ 31.50

The author of this impressive volume is a renowned pediatrician and at the same time one of the founders of mammalian experimental teratology. The subtitle of the book is definitely over-modest; it is difficult to imagine how a work written by a single author could be more comprehensive. We must be thankful to the author for making his vast experience available to others.

The bulk of the book (Parts IV-XIX) consists of 121 chapters of varying length dealing with structural malformations in man selected because of common occurrence or emphasis in the literature; they are arranged in 13 parts mainly according to organs and organ systems. The longer chapters discuss what is known about the genesis and etiology of the malformation, as well as the relevant results of animal experiments. Part I of the book (50 pp.) presents general considerations; of the seven chapters we mention Definitions, Present trends in teratology, Beginnings of experimental mammalian teratology, Syndromes, and Sensitive or critical periods in teratogenesis: uses and abuses of embryologic timetables. All of these contain valuable critical and cautionary notes. Part II (5 chs., 75 pp.) deals with etiological factors generally, and is restricted to well-established facts. Part III (9 chs., 54 pp.) deals with general disturbances of growth and development; the longest chapter is that on intrauterine growth retardation. Separate chapters on the following subjects were considered but deliberately omitted: inborn errors of metabolism (now a separate discipline), dental malformations, twins and conjoined twins, and monstrosities.

The book is very well produced and profusely illustrated with photographs and photo-micrographs, most of them original. Although the author states that the literature cited is far from exhaustive, the amount is nevertheless impressive; many non-English titles are included. The index is detailed and well laid-out.
Monographs

48.
E. FREDERIKS. 1973. VASCULAR PATTERN IN EMBRYOS WITH CLEFTS OF PRIMARY AND SECONDARY PALATE

Extension of a study published in Brit. J. Surg. 25, 1972; summary of vascular patterns in normal human embryos of 8-50 mm.; detailed description of patterns in six cleft embryos of 13-64 mm.; good graphical reconstructions; hypothesis that vascular depletion is the cause of cleft formation is rejected.

49.
PATHOGENESIS OF THE AVIAN EMBRYO, an analysis of causes of malformations and prenatal death
Wiley-Interscience, New York, etc. XVI, 476 pp., 192 figs., 21 tabs., subject index. £ 9.45

Contents: I. Dynamics of development; II. Spontaneous malformations; III. Genetic mutations; IV. Atmospheric changes; V. Ionizing radiation; VI. Nutritional deficiency; VII. Chemical teratogenicity; VIII. Hormonal derangement; IX. Pathogenic afflictions; X. Traumatic disturbance; XI. Aberrant twinning

This monograph is comparable in scope to the author's earlier book "Biochemistry of the Avian Embryo" (1967). It is essentially compilatory in nature, and is based on the close scrutiny of more than 6,000 published papers, of which about 900 appear in the bibliography. The significant experimental data were carefully evaluated, frequently recalculated, and a large proportion were condensed into tables and composite original graphs. The material is presented without discussion or interpretation. The result is an invaluable source book, which however is no substitute for a text on avian teratogenesis.

The chapters are subdivided into numerous subsections, and almost any conceivable teratogenic agent or environmental factor is considered. The tables are of considerable help in obtaining a quick overview of published work in certain areas, and this is particularly true of the nine extensive summary tables appended to ch. III and chs. V-IX. Most of the material of course relates to the chick, but other avian species are considered wherever material is available. A 12-page appendix deals with miscellaneous items, particularly the natural variability in various characteristics of chicken eggs which can be of significance in experimental work. Finally, there is a glossary of Greek names of congenital malformations.

The book is well produced but very expensive. The original line drawings are successful. Most of the titles in the bibliography are older than 1969. The bibliography also serves as an author index. The subject index is comprehensive and cross-referenced.

Careful morphological study of forelimb development based on 19 embryos from treated mothers; Streeter's horizons used for stageing; interpretation of results in terms of damage to prospective limb fields and regulation of defects; extensive literature discussion.


Thorough study with emphasis on limb malformations; biochemical action on serum proteins; distribution of DMSO in limb bud mesenchyme; action of DMSO analogues.


Thorough study based on modern concepts and techniques of immunology; improved immunization technique; cross reactions between ocular and extra-ocular tissue antigens; placental passage of antibody; main results (obtained on young of three months old): morphological and clinical anomalies of lens and retina, pupillary rigidity, skin lesions.


Study based on the evaluation of 1783 abnormal calves, of which almost 25% had CNS malformations; encompasses all the known and many new CNS malformations; morphological and histological descriptions; comparison with similar anomalies in other domestic animals; literature discussions with respect to teratogenesis and etiology; fetal haemorrhages and congenital neoplasia in the CNS; correlations with other organ systems; illustrated with photographs and micrographs; bibliography of more than 700 titles.
M.D. thesis, Univ. of Amsterdam. XII, 114 pp., 37 figs., 11 tabs. English summary (4 pp.)

Description of normal palate development in 9-19-day mouse embryos; median cleft palate induced by amnion puncture around 14½ days; palate development in cleft embryos (15-19 days); study of ossification sequence and skull growth (27 dimensions) in normal and cleft embryos (16-19 days); statistical analysis; good photographs and micrographs.

Symposium reports

55. M.A. KLINGBERG, A. ABRAMOVICI, and J. CHEMKE, eds. 1972. DRUGS AND FETAL DEVELOPMENT
Plenum Press, New York, etc. Adv. in Exp. Med. and Biol. Vol. 27. XIV, 559 pp., 151 figs., 7 pls., 138 tabs., subject index. $ 31.50

This book contains the 44 papers presented at the first International Symposium on the effects of prolonged drug usage on fetal development, held in Israel in September, 1971. The range of topics covered is extremely broad. An interesting feature of the book is that many authors seem to belong to the younger generation whose work is just becoming generally known. About half of the papers will be mainly of value to clinicians interested in drug effects, but at least 20 are of interest to teratologists generally.

Most of the papers in question report on recent research involving laboratory and domestic mammals and birds. Except drugs in the strict sense, hormones, vitamins, and minerals were used in some studies. Morphological studies are in the majority, biochemical work being reported in half a dozen papers, and ultra-structural work in none. Some of the papers are very short. The discussions are not recorded.

The book is produced in offset print at a rather high price. The photographic illustrations are well reproduced. The index could have been more extensive.

DEVELOPMENTAL PATHOLOGY, CANCER (see also 47, 49, 74, 80, 98, 107, 110, 112)

Treatises

Academic Press, New York, etc. XVI, 357 pp., 67 figs., 15 tabs., author and subject indexes. $ 25.00

Contents: 1. Disorders of placental transfer (Longo); 2. Disorders of placental endocrine functions (Simmer); 3. Disorders of amniotic fluid (Liley); 4. Genetic disorders affecting growth and development (Sparkes and Crandall); 5. Environmental effects on development - teratology (Wilson)

This is the second volume of a three-volume multi-author treatise. Vol. 1 is entitled Maternal Disorders, and vol. 3 Fetal and Neonatal Disorders. They will not be reviewed here. The aim of
the present volume is to make use of the normal basic data to explain the underlying mechanisms of the most important disorders of maternal-fetal-placental-amniotic fluid interrelationships. Much attention is devoted to methodological aspects, to the proper use of diagnostic tests, and to clinical applications. All chapters have extensive and up-to-date bibliographies.

The first two chapters are the longest (about 80 pp. and ca. 400 references each). The other chapters range in length from 50 to 60 pages, and have from ca. 100 to over 200 references each. All chapters are clearly organized and subdivided into surveyable subsections.

The book is well produced and illustrated. It is not clear why one of the bibliographies deviates from the usage of alphabetical order.

Monographs


Study of the effects of chloramphenicol, nicotine, chlorpromazine, imipramine and thalidomide on fertilization, cleavage, cytology, and morphogenesis in Paracentrotus and Psammechinus; illustrated with photographs and electron micrographs.

59. D. TARIN, ed. 1972. TISSUE INTERACTIONS IN CARCINOGENESIS. Academic Press, London, etc. XVIII, 483 pp., 183 figs., 26 tabs., author and subject indexes. £ 8.80

Contributors: Cowell, Dawe, Frithiof, Kratochwil, Mazzucco, Orr, Pinkus, Saxén, Smith, Spencer, Strauch, Sturdee, Sugár, Tarin

Inasmuch as neoplastic cells exhibit an altered differentiated state, carcinogenesis presents problems which are of general interest to developmental biologists. This book concentrates on a rather neglected field of enquiry: the characteristic features
of the tumour as a whole. The authorship of the book is truly
international, and the chapters are well integrated.

The book opens with two excellent reviews of tissue interac-
tions in embryogenesis and morphogenesis by Kratochwil and
Saxén, respectively. Tarin briefly reviews tissue interactions
in adult organs. The next five chapters present histological
and ultrastructural studies on human and experimentally induced
animal neoplasms, while five other chapters discuss biochemical
and transplantation studies on the mechanisms of carcinogenesis
and invasion. Systemic effects are excluded from consideration.
In the final chapter Cowell discusses the control of epithelial
invasion by connective tissue during egg implantation.

The book is well produced and very well illustrated.

Symposium reports

60.
B.SCHWEINITZ and R.DEHNCKE, eds. of journal. 1972. PATHOPHYSIO-
LOGIE DER FETALEN UND NEONATALEN ENTWICKLUNG
Friedrich-Schiller Univ., Jena. Wiss. Z. Friedr.-Schiller Univ.,
Math.-Naturwiss. Reihe. Vol.21, pt.4. 251 pp., 133 figs., 51
tabs.

This is the report of a Symposium held in Jena (DDR) some
time during 1971. It contains 56 brief research reports by au-
thors from East Germany and various other Eastern-European coun-
tries (and a few from West Germany). The subjects of most of
the papers fall under one of the following categories: biochem-
istry, physiology, and endocrinology of the fetus and neonate;
structural and functional studies of the placenta, feto-placen-
tal unit, and embryonic membranes; clinical studies on the human
fetus and neonate; immunological and immunochemical studies.
Five contributions from outside Germany are in English.

REGENERATION, RENEWAL (see also 27,80,93)

Textbooks

61.
M.SINGER. 1973. LIMB REGENERATION IN THE VERTEBRATES
Addison-Wesley, Reading, Mass. Addison-Wesley Module in Biology
Nr.6. 27 pp., 17 figs., 1 tab.

Although of course highly selective, this is on the whole a
competent and readable review, with one exception: the section
on morphogenesis of the regenerate is too incomplete to serve
its purpose. Whereas at least some of the most important modern
work is mentioned in the other sections, in this section the
most recent work is almost totally neglected.

With a concise text of this type more illustrations, particu-
larly summarizing diagrams, would have been useful. The selec-
tion of references is sometimes odd.

Monographs

62.
P.BRIEN. 1971. REGENERATION D'UN ASCIDIOZOIDE DE CLAVELINA LEPA-
DIFORMIS MÜLLER PAR UN FRAGMENT DE STOLON ET PAR UN THORAX ISOLE
Sci. Coll.80, Sér.2, 39, 6, 92 pp., 50 figs.

Morphological and histological study of the regeneration of the
thorax separated from the abdomen at various different levels; Driesch's views on the subject are refuted - emphasis on dedifferentiation and dedetermination; numerous beautiful drawings and light micrographs.

63.
A.L.BURNETT, ed. 1973. BIOLOGY OF HYDRA
Academic Press, New York, etc. XVI, 466 pp., 231 fgs., 12 tabs., author and subject indexes. $ 29.00

This book is very much the product of one school, that of Allison Burnett. Almost all authors are actual or former associates of Burnett. The book is distinctly biased on several issues; a much better balance of viewpoint could have been achieved if members of other "Hydra schools" had been asked to contribute. Nevertheless, the influence of Burnett's school in this field is considerable and its production impressive, and the book provides a useful synthesis of the manifold approaches and often very interesting results of this group. It is much less useful as a general work of reference.

We only mention in passing that the first three chapters deal with the behaviour and ecology of Hydra. Most of the remaining chapters are lengthy, self-contained reviews supplemented with unpublished material. Although the treatment draws rather heavily on the group's own work, the most important work of other schools is usually covered. An exception is the most recent work of the groups of Wolpert and Gierer.

Chapters by Diehl and Lesh-Laurie deal with I-cells and with organismic polarity, respectively, while Davis extensively treats the ultrastructure of gastrodermal regeneration. The next five chapters deal with epidermal regeneration and are in the format of brief research papers; this is because most of the work in this area is very recent. Three chapters by Davis then deal with the ultrastructure of differentiating and mature nervous elements of three types: neurosensory, ganglionic, and neurosecretory. A long chapter by Corff deals with organismal growth and the role of cell proliferation. Finally, Hausman discusses the mesoglea and its possible morphogenetic role.

64.
B.M.CARLSON. 1972. THE REGENERATION OF MINCED MUSCLES
Karger, Basel. Monographs in Developmental Biology Vol.4, VIII, 128 pp., 49 fgs., 2 tabs. S.fr. 49.00, $ 13.75, £ 5.40, DM 44.00

The author of this monograph has himself been doing experiments in this area for several years. Moreover, he knows Russian and other Eastern-European languages and has frequently visited several countries in Eastern Europe where much work along these lines is being done. The book presents original data from his own research and that of three of his doctoral and several of his graduate students on frogs, axolotls, and rats. This material is integrated with the major findings and conclusions of the "Russian school".

The following main aspects are treated successively: gross development, histological development, autoradiography, nerve supply, biochemical characteristics, factors determining gross form and internal architecture, and homografting experiments.

The book is well produced and beautifully illustrated, mainly with photomicrographs. It has a 9-page bibliography but no index.

This is the translation of a book first published in Russian in 1968. The author is head of the Laboratory of Experimental Morphology, Institute of Developmental Biology, Academy of Sciences of the USSR, Moscow. As B.M. Carlson points out in his preface to the translation, Soviet regeneration research underwent a pronounced shift in the late 1940s from basic work on amphibians to more practically oriented problems in mammals. The book in particular summarizes the work of the author and his associates during the post-war years, which is much less known in the West than his earlier work.

The book is written in the verbose and somewhat involved style typical of Russian writers of an older generation. Moreover, there is a rather strong preoccupation with theoretical issues which may seem to be of only academic interest to many. However, the organization of the book is such that the highly interesting factual results of this group are not too difficult to unearth. Although it may sound surprising, they will probably appeal most to members of the medical, dental, and veterinary professions, and might well open up entirely new ways of surgical treatment in the not too distant future.

The first part of the book lays the theoretical foundation (eight brief chapters, 79 pp.). The second part (six chapters, 188 pp.) then deals with experiments on the loss and the restoration by various means of regenerative capacity in the following systems: extremities of amphibians, lizards, and young rats; bones of the cranial vault; dental tissues; myocardium; cerebral cortex; X-irradiated axolotl limbs. In the last part (five brief chapters, 36 pp.) the insight gained is applied to some other areas: restoration of damage to internal organs, functional restoration, and relationships between regenerative capacity, immunity, and tumor formation.

The translation is very competent. The book is well printed in offset print, well illustrated, and remarkably cheap. The 77-page classified bibliography is separated into Russian and non-Russian titles (proportion ca. 2:1). All Russian titles are transliterated as well as translated. There are no indexes.

L.V. POLEZHAEV. 1972. ORGAN REGENERATION IN ANIMALS; recovery of organ regeneration ability in animals. Thomas, Springfield. X, 190 pp., 108 figs., subject index. $14.

It is unfortunate for the publisher of this book that an excellent English translation of Polezhaev' s 1968 book on the same subject has just appeared (see review no. 65). The present book is a considerably shortened version of the earlier work, especially written for American readers. It restricts itself almost entirely to factual results. Although the book contains some work more recent than 1968, it compares unfavourably with the translation in almost every respect (even the price).

The English is clumsy - the author is not to blame, of course, but why has nobody suggested a linguistic check by an expert? Almost no care seems to have been devoted to the preparation of the graphs and figures. The former are unbelievably amateurish in execution. The latter have bad captions, are not properly labelled, and the component pictures are often transposed or ro-
tated in an inexcusable manner. Moreover, even though printed on glossy paper, they are often inferior in quality to the corresponding ones in the other book; several lack contrast, some of the blocks seem to be badly scratched, etc. The only positive point is the presence of an index.

**Symposium reports**

Sabchota Sakartvelo, Tiflis. 244 pp., 70 figs., 12 tabs.

Proceedings of a conference held in Tiflis in December, 1968; 26 research papers, most of them with English summaries; 2 papers in German (Kirsche, Richter); most papers deal with mammalian CNS, three with lower vertebrates, six with peripheral NS, and two with invertebrates.

**Collections of papers**

68. A.P. AVTSYN, ed. 1973. DEDIFFERENTIATION IN REGENERATIVE PROCESSES (in Russian)
Moscow Univ. Press, Moscow. 99 pp.

Contains seven articles ranging in length from 10 to 20 pp., by the following authors: Dedov, Korotkova and Tokin, Liosner, Lopashov, Sarkisov, Studitskiy, Fridenshtejn; various regenerating, metaplastic, regressing, and asexually reproducing systems are considered.

**Books of readings**

MSS Inf. Corp., New York. Vol.I 175 pp., 72 figs., 10 pls., 10 tabs. $15.00; Vol.II 188 pp., 42 figs., 14 pls., 38 tabs. $17.50

For general characterization of the series, see review no.139. Vol.I: Out of 15 papers, three (by Koscielski) deal with the embryology of Dendrocoelum lacteum (1964-'67); other papers on ultrastructure, molecular and cell biology, and behaviour. Vol.II: Out of 11 papers, four deal with regeneration in Dugesia (authors: Ansevin, Betchaku, Marsh, years of publication: 1967-1970); other papers on pathology and radiation biology.

70. LIVER REGENERATION. 1973. Vol.II
MSS Inf. Corp., New York. 213 pp., 100 figs., 34 tabs. $15.00

For general characterization of the series, see review no.139. Enzyme changes (8 papers), portal blood factor (2), vascular effects (2), drug effects (7), radiation effects (2). First authors: Banerjee, Chernozemski, Coggle, Dinman, Donohoo, Fausto, Fisher, Henderson, Japundzić, Koizumi, Looney, Morais, Morris, O'Connor, Ortega, Patterson, Queener. Years of publication: 1968-1971.
MSS Inf. Corp., New York. 161 pp., 67 figs., 25 tabs. $15.00

For general characterization of the series, see review no. 139.
Adrenal gland (3 papers), ureter (1), hemoletic and lymphatic
tissues (8). First authors: Blackburn, Nettlesheim, Nowell, Rapp,

72.
REGENERATION IN LOWER VERTEBRATES AND INVERTEBRATES. 1972.
Vols. II and III
tabs. $15-.; Vol. III 186 pp., 128 figs., 1 pl., 21 tabs. $15-. 

For general characterization of the series, see review no. 139.
Vol. II: Amphibians: neural influence in limb regeneration (3 pa-
pers), effects of hormones and drugs on limb regeneration (4),
iris regeneration (4). First authors: Campbell, Egar, Eisenberg-
Zalik, Francoeur, Lentz, Reyer, Tassava, Tweedle, Zalik. Years
Vol. III: Lower vertebrates: regeneration of glandular structures
(3 papers); Invertebrates: papers on Hydra (3), Tubularia (1),
annelids (2), insects (4), echinoderms (3). First authors:
Clark, Datta, Davis, Eichler, Fitzharris, Heatfield, Kass-Simon,
Maderson, Marks, Slaughter, Smith, Streett. Years of publication:

ORGANO- AND HISTOGENESIS (incl. tissue and organ culture, histo-
chemistry) (see also 20, 24, 25, 59, 64, 67, 99, 100, 109, 128)

Treatises
73.
G. H. BOURNE, ed. 1972. THE STRUCTURE AND FUNCTION OF MUSCLE,
Academic Press, New York, etc. XX, 576 pp., 231 figs., 10 tabs.,
author and subject indexes. $33.00

The first edition of this work was published in three volumes
in 1960. It has now grown to four volumes; many of the chapters
were revised by the original authors, and several new chapters
were added. We will only review vol. I, which contains four chap-
ters that are of particular interest to our readers.

The first and longest of these is that by Fischman (74 pp.).
It briefly discusses the embryonic origins of muscle, but most
of it is taken up by the treatment of the myoblast concept, mi-
tosis, cell fusion, and the myotube. Most of the emphasis is on
DNA synthesis, general ultrastructure, and the nature of myofil-
aments and myofibrils. The histochemistry of developing skeletal
and cardiac muscle is treated in the revision of the original
chapter by Beckett and Bourne (30 pp.). Goldspink discusses the
postembryonic growth and differentiation of striated muscle
(56 pp.), devoting attention to structural, ultrastructural, bio-
chemical and physiological changes, and to factors that in-
fluence muscle growth. Murray deals with skeletal muscle in cul-
ture (63 pp.); one section of this chapter deals with the in-
sights tissue culture has provided into the early histogenesis of
muscle (induction, sarcoblast derivation, cytodifferentia-
tion); another section deals with some histogenetic aspects of
muscle regeneration as elucidated by tissue culture. (Muscle re-
generation as such will get a systematic treatment in vol. II, in
The book is very well produced and beautifully illustrated.

74.
H.C.SLAVKIN and L.A.BAVETTA, eds. 1972. DEVELOPMENTAL ASPECTS OF ORAL BIOLOGY
Academic Press, New York, etc. XVI, 426 pp., 198 figs., 20 tabs., author and subject indexes. $ 26.00

This multi-author treatise is of much wider interest than to members of the dental profession alone. The reason is threefold: first, oral biology is placed against a broad biological background; second, the chapters are not didactic reviews, but reflect judicious "pruning" so that they remain readable and enjoyable for the non-specialist; and, third, the authors have been urged to outline the broad biological issues involved and to point out critical unsolved questions.

Of the 21 contributors the majority are North-American, with two from England and one from Belgium. Most of them work in the research departments of dental schools. Throughout the book the discussion considers all levels of organization, from the organismal down to the molecular.

The broad scope of the book is reflected in the variety of subjects considered. Of the 18 chapters seven deal with tooth and periodontium, and five with other oral tissues and organs (neural crest, cephalic mesoderm, palate, taste bud, gingiva, salivary gland). Four chapters discuss general problems (nutritional aspects of embryogenesis, molecular developmental biology, immuno-embryology, collagen biochemistry), while two others deal with normal and malignant lymphoid cells, and with the relation between epithelial carcinogenesis and the possible role of the mesenchyme. Most chapters range in length from about 15 to 30 pages; all have up-to-date bibliographies.

The book is exceedingly well produced and profusely and superbly illustrated.

Monographs

75.
G.ALTNER. 1971. HISTOLOGISCHE UND VERGLEICHEND-ANATOMISCHE UNTERSUCHUNGEN ZUR ONTOGENIE UND PHYLOGENIE DES HANDSKELETTES VON TUPAIA GLIS (DIARD 1820) UND MICROCEBUS MURINUS (J.F.MILLER 1777)
Karger, Basel, etc. Folia Primatologica Vol. 14, suppl. VI, 106 pp., 24 figs., 3 tabs. S.fr. 29.00, $ 8.15, £ 3.05, DM 29.00 (paper)

Thorough study of the embryonic development and adult anatomy of the skeleton of the carpal-metacarpal region; material supplemented by hands of selected insectivores, rodents and primates; photographs, micrographs, reconstructions and drawings; extensive discussion defines "spread hand" and "prehensile hand" and considers ethology, phylogeny, and taxonomy.

76.

Summary of original work of about a decade, based on 373 series of hands and feet of closely-spaced embryonic stages of 10 to 100
1972.
Embryol. tabs., 10.00, tabs. 31x619 mm.

DEVELOPMENT OF THE CHICK HEART
Johns Hopkins Univ. Press, Baltimore, etc. X, 80 pp., 19 pls.
$ 10.00, £ 4.75

This atlas is based on a study conducted at the Laboratory of Embryology of the Instituto Nacional de Cardiología de México. It contains 19 composite full-page plates printed on high-quality paper, each accompanied by a concise text. The developmental period covered is from 26 hrs. till hatching, comprising 18 stages of the Hamburger/Hamilton series selected to show the most conspicuous changes (the first stage being st.8 and the last st.44). Separate plates are devoted to the heart and great vessels in the newly hatched chick, and to the formation of the interatrial septum. Until st.32 most plates include good diagrams illustrating the embryonic human heart at comparable stages, mostly taken from classical sources. Up to and including st.22 the chick embryos were stained and photographed as whole mounts, thereafter the fixed hearts were photographed in toto or after partial microdissection, as seen from various sides.
The text, based on personal observations only, is clearly written and contains references to those developmental disorders which give rise to the most common congenital heart defects.
The illustrations are of outstanding quality and are clearly labelled. The book is concluded by a brief selective bibliography. The production is luxurious but the format somewhat unwieldy; the price is surprisingly low thanks to a Mexican grant.

78.
W.KIRSCHE. 1972. DIE ENTWICKLUNG DES TELENCEPHALONS DER REPTILIEN UND DEREN BEZIEHUNG ZUR HIRN-BAUPLANLEHRE
Barth, Leipzig. Nova Acta Leopoldina NF.204, Bd. 37, 2. 78 pp., 29 figs., 2 tabs. M. 14.80 (paper)

Histological study on 23 embryos of Testudo hermanni of 13-66 days; extensive discussion with emphasis on neocortex primitivus and comparative aspects; photomicrographs, reconstructions and diagrams.

79.
M.KLIMA. 1973. DIE FRÜHENTWICKLUNG DES SCHULTERGÜRTELS UND DES BRUSTBEINS BEI DEN MONOTREMEN (Mammalia: Prototheria) (The morphogenesis of the shouldergirdle and sternum in the monotremes (Mammalia: Prototheria)
Springer, Berlin, etc. Adv. in Anat. Embryol. and Cell Biol. vol. 47, fasc. 2. 80 pp., 33 figs., 2 tabs., subject index

Study based on embryos, pouch young and adult skeletons of Ornithorhyncus and Tachyglossus (one skeleton of Zaglossus); adult morphology 11 pp., embryogenesis 27 pp.; extensive discussion with emphasis on comparative anatomy; excellent drawings, reconstructions, and photomicrographs.
80.
W.E.KNOX. 1972. ENZYME PATTERNS IN FETAL, ADULT AND NEOPLASTIC RAT TISSUES
Karger, Basel, etc. XII, 354 pp., 32 figs., 36 tabs., combined author and subject index. Sfr. 93.00, $ 22.30

This monograph deals with a comparatively new approach in biochemistry, that based on chemical patterns of tissues. The author calls it "chemical anatomy" and shows that it may develop into a tool at least as effective as histology and cellular pathology. It is based not on individual tissue constituents but on the differential patterns of concentration or activity of the same constituents in different tissues. Pioneers work in this area was done by J.P. Greenstein a quarter of a century ago.

The author's main concern is with enzyme activities in tissue extracts (not with chromatography, electrophoresis, etc.) with emphasis on fetal, adult, and regenerating rat liver and various rat tumours. He shows that meaningful comparisons can be achieved by using a common tissue base (1 g of fresh tissue) and by expressing all activities in "liver units" (the unit being the activity in adult rat liver). The resulting patterns are then subjected to correlation analysis and principal component analysis. The methodology is set out with clarity.

The book is based on original results and on numerous re-evaluated data of others. It considers 160 components in 17 different rat tissues, compiled in tabular form and in the form of histograms and graphs. The book is essentially an inventory and analysis of crude data, and no attempt is made to explain underlying regulatory phenomena. The results of most interest to developmental biologists are the consistent differences in enzyme patterns between fetal and adult tissues; the similarity in patterns among various tumours and between tumours and fetal tissues; and the correlations between growth rate and tissue pattern, which are different for fetal and neoplastic tissues.

81.

Fluorescence histochemical study using freeze-dried brain tissue and pituitary and pineal glands from fetuses (for technical reasons rather than for their embryological interest); fetuses of 10-15 cm CRL; photomontages and clear summarizing diagrams.

82.
P.F.PARAKKAL and N.J.ALEXANDER. 1972. KERATINIZATION, a survey of vertebrate epithelia
Academic Press, New York, etc. IV, 59 pp., 58 figs., subject index. $ 7.50 (paper)

This concise monograph presents a survey of a very special type of cell differentiation, that of the epithelial cells of vertebrate skin, from a structural and comparative viewpoint. The introduction briefly discusses the main phases of the life cycle of these cells: mitosis, differentiation, and exfoliation. The five main chapters then deal with the salient features of the epithelial portion of the skin and its appendages in the five vertebrate classes, with emphasis on ultrastructure. The chapter on avian epidermis consists of brief sections on skin
development in the embryo and on feathers and their development. The chapter on mammals contains sections on fetal epidermis and on the three phases of the hair growth cycle.

The booklet is superbly illustrated with electron micrographs and half-tone drawings.

83.
H.URSPRUNG and R.ÖSTHIGER, eds. 1972. THE BIOLOGY OF IMAGINAL DISCS
Springer, Berlin, etc. Results and Problems in Cell Differentiation 5. XVIII,172 pp., 56 figs., 12 tabs. DM 46.00, $ 14.60

It is fitting that this volume should be dedicated to Ernst Hadorn. The dedication is by D.Bodenstein and accompanies a delightful portrait of the great Swiss biologist. All the contributors have at one time been associated with Hadorn.

The six reviews making up the volume are comprehensive and well organized, and as up-to-date as is possible in such a book. There is some overlap between the chapters, but this is inevitable and suitable cross references are provided. The subjects treated successively are larval development (Östhiger), the stability of the determined state (Gehring), pattern formation (Garcia-Bellido), fine structure (Ursprung), biochemistry (Fristrom), and hormonal control (Oberlander). The chapter by Gehring is a revised and updated version of an article that appeared in vol.1 of this series. Several chapters contain unpublished work; this holds particularly for Fristrom's chapter, which is the first published review in this area and clearly brings out the molecular-biological parallels between imaginal disc development and embryogenesis in other species.

The book is produced and illustrated in the usual excellent manner, but as in the other volumes of the series the absence of indexes is regrettable.

84.
C.VAGO, ed. 1972. INVERTEBRATE TISSUE CULTURE, Vol.II
Academic Press, New York, etc. XIV,415 pp., 105 figs., 25 tabs., author and subject indexes. $ 25.00

Contributors: Ball, Barigozzi, Berreur-Bonnenfant, David, Demal, Gomot, Hink, Leloup, Mitsuhashi, Řeháček, Rougier, Takami, Vago

Volume I of this multi-author research monograph was reviewed in Gen. Embryol. Inf. Serv. Suppl.14, 1972, p.34. The present volume is in three parts, the first dealing with embryo and organ culture (3 chapters), the second with various applications of invertebrate tissue culture (7 chs.), and the third being a catalogue of invertebrate cell lines compiled by Hink (with formulas of 22 culture media).

All three chapters in part one are of interest to developmental biologists. Demal and Leloup deal with insect organ culture with particular reference to morphogenesis (38 pp.); they pay special attention to the brain and the eye-antennal imaginal discs, the thoracic discs, the circulatory and digestive organs, and the gonads. Gomot reviews organ culture in invertebrates other than insects, arranged according to nine major phyla (95 pp.); the chapter has several sections on the culture of regeneration blastemas. Finally Takami deals with insect embryo culture in a review centered on Bombyx mori (27 pp.).

In part two the following chapters may be mentioned: Barigozzi on cell culture in genetic research (centered mainly on Drosophila), and Berreur-Bonnenfant on organ culture in hormonal research
(postembryonic development, regeneration, and sexual differentiation). Most of the other chapters deal with applications of invertebrate tissue culture in pathology.

The book is well produced and illustrated.

85. Ch. VERMEIJ-KEERS. 1972. TRANSFORMATIONS IN THE FACIAL REGION OF THE HUMAN EMBryo

Study based on serial sections and glass-plate reconstructions of the facial region of 17 embryos of 4.4-17 mm. CRL; formation of placodes, maxillary and lateral and medial nasal processes, nasal tube, organ of Jacobson, conchae, naso-lacrimal duct, and meatus nasi inferior.

Dissertations

86. J.-C. BISCONTE. 1973. HISTOGENESE DU SYSTEME NERVEUX CENTRAL CHEZ LE RAT, études chronoarchitectoniques par radioautographie quantitative

Quantitative autoradiographic study of the entire brain in embryos, juvenile and adult animals, using 3H- and 14C-thymidine injected at various times during gestation; emphasis on the temporal development of cyto-architecture; formulation of a kinetic model and various hypotheses concerning morphogenesis, cell migration, and cell differentiation; numerous gross autoradiographs; photometric scanning maps and maps showing the temporal sequence of cell marking at 10 transverse levels of the adult brain; 3-dimensional diagrams based on the latter; extensive bibliography.


Histological and quantitative autoradiographic study of the behaviour of all types of glial cells during postnatal development, with special reference to prosencephalon and optic tract (based in part on work published elsewhere); relation with myelinisation; cellular proliferation and migration; effects of eyelid closure and enucleation of the eye; drawings, photomicrographs and autoradiographs; extensive bibliography.


Thorough study on embryos from 10 to 21 days old and on some postnatal stages and the adult; aspects considered are neuromerism, ventricular relief, matrix activity (heterochrony), and
mantle layer differentiation (supplemented by thymidine autoradiography); extensive discussion; numerous excellent micrographs, drawings, diagrams and reconstructions.

89.
C.G. van OOSTROM. 1972. DE INITIELE REGIONALE ECTODERM-ONTWIKKELING IN HET KOPGEBIED BIJ DE MUIS (The initial regional development of the cephalic ectoderm in the mouse)
M.D.thesis, Univ.of Amsterdam. 96 pp., 41 figs., English summary (2 pp.)

Eleven embryos of 7-10 days (0-21 somites); mapping of local differences in thickness and mitotic activity of cephalic ectoderm; relation with formation of cephalic placodes; comparison with man and lower vertebrates; numerous good reconstructions.

90.
S.C.J. van der PUTTE. 1971. DE ONTWIKKELING VAN HET LYMPHVAATSTELSEL BIJ DE MENS (The development of the lymphatic system in man)
M.D.thesis, Univ. of Amsterdam. 124 pp., 45 figs., English summary (3 pp.)

Study based on serial sections of 40 human embryos ranging in length from 8 mm (total) to 33 mm (CR); photomicrographs, schematic drawings, and 11 very clear graphical reconstructions, from inception till complete establishment of main lymphatic trunks.

91.
V.B. VEENHOF. 1969. THE DEVELOPMENT OF STATOCONIA IN MICE
M.D.thesis, Univ. of Amsterdam. North-Holland, Amsterdam, etc. 49 pp., 6 figs., 18 pls.

Study based on 12-20-day mouse embryos, juvenile and adult mice; histology, histochemistry, electron microscopy, microradiography, Ca-autoradiography, X-ray microradiography, X-ray diffraction.

Symposium reports

92.
B.Q. BANKER, R.J. PRZYBYLSKI, J.P. van der MEULEN, and M. VICTOR, eds. 1972. RESEARCH IN MUSCLE DEVELOPMENT AND THE MUSCLE SPINDLE Excerpta Medica, Amsterdam, etc. International Congress Series no.240. X,474 pp., 280 figs., 44 tabs., subject index, index to contributors. D.fl.105.00, £ 14.65

Contributors to part I: Carlson, Cosmos, Fischman, Hauschka, Herrmann, Holtzer, Kelly, Love, Marchok, Meyer, Przybylski, Shaflq, Simpson, Yaffe, Zak

The Symposium of which this book is the report was held in October, 1970 in Cleveland, Ohio. It had 40 invited participants, most of them from North America, while 200 others attended and took part in the discussions. We will only review part I, which deals with the development of muscle; part II (14 papers) is entitled "The muscle spindle and the Golgi tendon organ".

The 15 papers in part I are all reports of recent results, partly unpublished in 1970. Most of them have an average length of 15 pages, and several were amplified prior to printing. They deal with structural, biochemical, and molecular-biological aspects of muscle development in vivo and in vitro, involving nor-
mal or dystrophic muscle tissue of mammals, the chick, and the lizard. Each group of two or three papers is followed by 2-4 pages of highly interesting discussion, with separate references.

The book is very well produced and profusely illustrated, mostly with very good light and electron micrographs. Unfortunately the price must be considered excessive.

93.
R. J. GOSS, ed. 1972. REGULATION OF ORGAN AND TISSUE GROWTH Academic Press, New York, etc. XIV, 365 pp., 91 figs., 35 tabs., author and subject indexes. $ 20.00

This book is based on an all-American Symposium held in Philadelphia in December, 1971. Most of the 23 contributors work in bio-medical institutions and departments. The Symposium was meant to encourage the exchange of ideas among people whose paths do not ordinarily cross. It is therefore a pity that the discussions are not recorded; nevertheless, the book is valuable for the breadth of its coverage.

There are introductory chapters on theories of growth regulation (Goss) and on growth and renewal (Leblond). In the remaining 16 chapters a great variety of mammalian organs and tissues pass in review, most with emphasis on postnatal growth: brain, muscle, heart, skeleton, blood, lymphatic system, liver, kidney, lung, and several more. Each chapter is a review by a specialist of recent work, seldom more than 10 years old, and together they constitute an excellent overview of the field. The multitude of regulatory factors that emerge should be an incitement to much more investigation.

The book is well produced and illustrated.

CELLULAR DEVELOPMENTAL BIOLOGY (incl. cell culture, cytochemistry) (see also 16, 68, 83, 113, 119)

Treatises

94.

This treatise, written by an international team of experts, is primarily meant for workers using mammalian material in basic bio-medical research. However, the cell cycle is so basic to all biological research, and the book is so well-balanced and authoritative that we briefly review it as a service to our readers. It consists of a series of concise but well-organized and clearly written reviews which cover nearly every aspect of the subject in a thoroughly modern fashion. Literature data are often condensed into very useful tables, and extensive bibliographies are provided. The chapters are linked together singly or in groups by thoughtful introductions by the editor.

We restrict ourselves to enumerating the subjects of all chapters (except the two that deal specifically with cancer cells): proliferative cycle of mammalian cells (Lipkin); proliferation and maturation of hemopoietic cells (Blackett); critical evaluation of the FLM method (Mendelsohn and Takahashi); differentiation and the cell cycle (Malamud); effects of hormones on the cell cycle (Epifanova); biochemistry of growth initiation in resting cells (Cooper); cytophotometry and histochemistry of the cell cycle (Vendrely); biochemistry of G1 and S phases (Mueller);
biochemistry of G2 and mitosis (Tobey et al.); radiobiology and the cell cycle (Frindel and Tubiana).

Monographs

95.
G. CSABA. 1972. REGULATION OF MAST-CELL FORMATION
Akadémiai Kiadó, Budapest. Studia Biol. Acad. Sci. Hung. 11. 148 pp., 76 figs., 17 tabs., author and subject indexes. $ 5.20, £ 2.00 (paper)

Concerned specifically with the site, induction, and mechanism of mastocytopoiesis and the production of the characteristic substances of mast cells; review of literature and author's original research spanning a period of a dozen years; quantitative and qualitative regulation of m.c. formation by steroids and amino-acid-type hormones; discussion of m.c. system, m.c. precursors, hormonal regulation, inducers and their inhibitors, feedback problem, nature of m.c. as unicellular endocrine gland; appendix gives author's recent results up till 1971; numerous black-and-white and colour photomicrographs, reasonably reproduced.

96.
D. WENDLER. 1972. DER EMBRYO-FETALE ZELLTOD WÄHRENDE DER NORMOGENESE UND IM EXPERIMENT

Thorough comparative study on chick, rat and man with complementary material of mouse and pig; histology, histochemistry, vital staining, cyclophosphamide teratogenesis; early stages and almost all organ rudiments considered; 56 pages of discussion against a broad embryological and biological background; 17-page tabular literature survey; 47-page bibliography; numerous photomicrographs.

Dissertations

97.
H.J. HOUTHOFF. 1973. ASPEKTEN VAN NEURONALE RIJPING, een histologisch en histochemisch onderzoek van enkele facetten van de ontwikkeling van het centrale en perifere zenuwstelsel van de kip onder normale en experimentele omstandigheden (Aspects of neuronal development, a histological and enzyme histochemical investigation into some developmental features of the central and peripheral nervous system of the chick under normal and experimental conditions)

Study based on embryos, chicks and adult animals (6-120 days); normal development of motor neurons in the lumbar sacral spinal cord, spinal ganglion cells, and sciatic nerve; effects of sciatic nerve transection at critical stages; 7 enzyme reactions used throughout as markers for cytodifferentiation; special emphasis on neuronal organelles and relationships between neurons and various satellite cell types; good photomicrographs.
Symposium reports

98. R. HARRIS, P. ALLIN, and D. VIZA, eds. 1972. CELL DIFFERENTIATION Munksgaard, Copenhagen. X, 350 pp., 131 figs., 5 pls., 54 tabs., index to contributors. D.Kr. 195.00

This book contains the papers read during the First International Conference on Cell Differentiation (held in the summer of 1971 in Nice, France - this information is not to be found in the book). It is unfortunate that the book bears the same title as a multi-author treatise published in 1970 (Schjeide and De Vellis, eds.). The Conference had a widely international attendance. Its chief aims were "to define important questions and to indicate the available experimental models and suggest new ones, in a series of short presentations".

Most of the papers are very short and avoid technical detail. Most report on unpublished or very recently published work, while some are reviews or are of a theoretical nature. The range of cell systems and methods covered is astonishing. In the list of speakers one encounters many of the "big names" one would expect, but the majority of the authors seem to belong to a younger generation, which is very refreshing. The book is fascinating "browsing" material if one wishes to acquire a broad idea of what is going on in the field at this very moment, and particularly where new frontiers are being opened up and new interdisciplinary approaches tried out. However, if one wants details one would have to go back to the relevant journal articles. Nevertheless, despite its heterogeneity (or perhaps just because of it) the book may be expected to serve as an eye-opener to many.

No less than 65 papers are arranged (admittedly more or less arbitrarily) in four sections as follows: Embryology (12 papers, with relatively most of the "big names"); Immunology (9); Cancerology (18); Cell biology (26). The last section is concluded by a brief synthesis of the final round table discussion on cell biology and differentiation. The editing of the papers has been minimal, resulting in a lack of editorial uniformity that is sometimes irritating.

The book is beautifully produced and illustrated, and not too expensive for its value; the more the pity that it is disfigured by numerous printing errors. There is no subject index. The so-called author index is really an index to contributors; it is not clear why only first authors are included.

99. L.G. SILVESTRI, ed. 1972. CELL INTERACTIONS; Proceedings of the third Lepetit Colloquium North-Holland, Amsterdam. 324 pp., 79 figs., 46 tabs., subject index. D.fl. 45.00, ca. $ 18.00 (paper)

This Symposium was held in London in November, 1971, and was attended by an international group of experts. All the papers describe very recent work, and although they vary in length and some of them are little more than abstracts, most are highly interesting particularly for those who want new information on cell surface properties and intercellular messengers. We mention only those papers which have a direct bearing on developmental biology.

In the section on cell interaction and differentiation (7 papers) there is first of all an important and stimulating paper by
Bennett, Boyse, and Old on cell surface immunogenetics and the study of morphogenesis. Weston deals with cell interaction in neural crest development, and Robertson et al. with cellular interactions in slime mould aggregation. Papers by Humphreys on contact inhibition of growth and by Pitts on intercellular nucleotide exchange are well worth reading.

The section on intraneural interactions (6 papers) contains papers by Sidman on cell interactions in the developing mammalian brain; by Horridge on cell specificity and precision of connectivity in differentiating invertebrate neurons; and by Giacobini on the role of regulatory mechanisms of neurotransmission in the establishment of synaptic connections in developing avian ganglia. Two papers in the section on immunology (18 papers) should be mentioned: that by Greaves and Janossy on a model for antigen-induced differentiation based on lymphocyte activation, and that by Mandel et al. on interactions of epithelial and lymphoid cells in the differentiating thymus.

The book is produced in offset print from typed manuscripts. The discussions held at the Symposium are not recorded.

100.
H.C. Slavkin, ed. 1972. THE COMPARATIVE MOLECULAR BIOLOGY OF EXTRACELLULAR MATRICES
Academic Press, New York, etc. XXIV, 468 pp., 136 figs., 29 tabs. $15.00

Contents: I. The developmental aspects of extracellular matrices; II. Cell surfaces: cell interactions; III. Evolution of cartilage; IV. Evolution of mineralizing tissues: bone, dentin and enamel; V. The molecular biology of collagen and structural glycoproteins; VI. Biophysical properties of connective tissues

Session moderators: Slavkin, Beierle, Meyer, Sognnaes, Nimni, Petruska

This book contains the proceedings of a Conference held on Santa Catalina Island, Calif. in June, 1972. Of the 60 participants the large majority were Americans; eight came from countries outside the U.S.A. The aim of the Conference was not to review the well-documented aspects of matrix biology but to engage in intensive informal discussions of contemporary issues. No formal papers were presented; each session is a continuous discussion led by the session moderator, who had previously framed a number of questions which are printed at the beginning of the session. The rough draft of the discussions was edited on the spot by the participants and produced in offset print at remarkable speed by Academic Press Rapid Manuscript Reproduction.

The book is not suitable as an introduction for the uninitiated, but will be read with great profit by those actively engaged in matrix biology. The first two sessions are of particular interest to developmental biologists. They contain attempts at re-evaluation of organogenetic induction and the expression of potential during cell differentiation, and suggest new approaches to the epigenetic influence of the cell matrix (particularly collagen); both of these in a variety of systems, some of which are relatively unknown to most developmental biologists (e.g. corals, mollusc shells).

Literature references are given in the text, and numerous good illustrations are included. It is sometimes confusing that the figure legends are printed in the same type as the text. The book has no indexes.
Monographs

101.
Karger, Basel, etc. Monographs in Developmental Biology vol.6. VI,106 pp., 23figs., 25tabs. Sfr. 46.00, $12.90, £5.40, DM 39.00

Contents: 1. Glycolysis in early embryogenesis; 2. Co-ordination changes in activities of glycolytic enzymes during oogenesis; 3. Peculiarities of oocyte metabolism; 4. The role of phosphorylase in the control of hexose monophosphate levels; 5. Enzymes of hexosmonophosphate metabolism; 6. Control of the fructose-1,6-diphosphate level in the developing embryo; 7. Factors controlling the conversion of triosephosphates to lactate in the loach embryo; Appendix: Allosteric regulation of enzyme activity

The authors of this monograph have been active investigators in this field since about 1965 and have produced a long series of joint papers written mostly in Russian. The book reviews this work, carried out on eggs and embryos of the loach, Misgurnus fossils, in connection with the work of many others on eggs and embryos of fish and other animals.

The book is largely characterized by the table of contents. Particular attention is devoted to a comparison of the metabolism of oocytes and embryos, since in the loach the Embden-Meyerhof pathway emerges during the phase of rapid growth of the oocyte. The period of early embryogenesis considered roughly extends till the end of gastrulation. The stability and self-adjustment of metabolic systems during development by feedback control in several controlling steps is extensively discussed.

The book is well produced and has a 13-page bibliography that is up-to-date until about 1969/70. There are no indexes.

102.
H.URSPRUNG, ed. 1972. NUCLEIC ACID HYBRIDIZATION IN THE STUDY OF CELL DIFFERENTIATION
Springer, Berlin, etc. Results and problems in cell differentiation vol.3. XI,76 pp., 29figs., 12tabs., DM 36.00, $11.50

This volume brings together six articles by investigators active in developmental and cell biology who use nucleic acid hybridization as a tool in their research. Contrary to what the title suggests, only the first two papers have a direct bearing on cell differentiation, while the others are mainly concerned with the wider area of gene regulation at the biochemical level. Not all papers are equally up-to-date.

Tobler briefly reviews the problem of the genetic identity of different cell types, basing himself on data from a variety of organisms. Church and Brown discuss the tissue specificity of genetic transcription, mainly on the basis of their own work on mouse embryos (a welcome complement to the numerous studies on sea urchins and amphibians). The paper by Purdom, Williamson, and Birnstiel is largely methodological in character. Hybridization of nucleic acids to chromatin and to chromosomes, respectively, is discussed by Kim and by Steffensen and Wimber. Final-
ly, Huang and Smith deal with the nature of chromosomal protein-bound RNA and its possible role in gene transcription. The book is well produced but has no indexes.

Dissertations

103.

O. PELKONEN. 1973. STUDIES ON DRUG METABOLIZING ENZYMES IN THE HUMAN FETUS

Brief account of work described extensively in 9 published research papers (1971-1973); main result: a mono-oxygenase system capable of metabolizing foreign compounds is localized mainly in fetal liver microsomes and becomes functional at 6-7 weeks.

Symposium reports

104.

E. DICZFALUSY and A. DICZFALUSY, eds. 1972. GENE TRANSCRIPTION IN REPRODUCTIVE TISSUE

This volume is a reprinting of a Supplement to Acta Endocrinologica. A limited number of copies are available from the Reproductive Endocrinology Research Unit at the Karolinska Sjukhuset, Stockholm. The book contains the papers read and discussions held at the fifth international Karolinska Symposium, Stockholm, May 1972. Although most of the 20 papers have no direct bearing on development, the book contains such a wealth of recent information on many aspects of molecular biology that a brief review is considered appropriate.

Three papers deal directly with developmental problems: Brown, Mattoccia and Tocchini-Valentini on the role of RNA in gene amplification in immature Xenopus ovaries; Kafatos on mRNA and cell differentiation in the silkworm galea; and Turkington and Kadohama on gene activation in mammary cells in vitro. The other 17 papers deal with such diverse subjects as nuclear and chromosomal structure and biochemistry, morphology and chemistry of transcription, DNA antibodies, RNA polymerases, and control of gene expression by cyclic AMP and steroids, all studied in widely differing systems.

The discussions have their own references. The 14-page general discussion at the end of the book centres on two major areas: chromatin structure (and the pitfalls of reconstitution studies), and possible new systems for the study of reproductive molecular biology.

105.

A. MONROY and R. TSANEV, eds. 1973. BIOCHEMISTRY OF CELL DIFFERENTIATION
Academic Press, London, etc. FEBS Symposium Vol. 24. X, 191 pp., 82 figs., 25 tabs., author and subject indexes. £ 4.00

This volume contains what is apparently a selection from the papers presented at the seventh FEBS meeting held in Varna, Bulgaria in September, 1971. Twenty-one of the contributors are from Western Europe, 12 from Eastern Europe, and seven from North America. Almost half of the 21 papers are no more than abstracts or preliminary notes of one or a few pages. They may be
interesting to the specialist but it is not clear what is the purpose of including them in a book. Unfortunately, several contributions of potential interest by less well-known investigators are in this category.

From among the longer papers we single out the following as being of possible interest to our readers: Induction of glutamine synthetase in embryonic neural retina (Moscona, 24 pp.); Cell-cycle-dependent events during myogenesis, neurogenesis, and erythrogenesis (Holtzer et al., 14 pp.); RNA synthesis in giant chromosome puffs (Pelling, 14 pp.); and Specific biological inhibitors of protein synthesis in differentiated cells (Kruh et al., Paris, 12 pp.). Papers of less than ten pages deal with ribosomal genes during amphibian oogenesis (Crippa and Tocchini-Valentini), RNA transcription from single copy DNA during mouse development (Church and Brown), and hormonal receptors of chromatin and their possible role in ontogenesis (Salganik et al., Novosibirsk).

Several other papers, e.g. those by Bishop, Georgiev, and Stenram (Sweden) are of interest to molecular biologists but not specifically to developmental biologists.

106.
M.ROCKSTEIN and G.T.BAKER,III, eds. 1972. MOLECULAR GENETIC MECHANISMS IN DEVELOPMENT AND AGING
Academic Press, New York, etc. XII, 254 pp., 83 figs., 31 tabs. $ 8.50

Contributors: Baird, Blumenfeld, Chen, Clever, Lang, Massie, Painter, Patel, Rockstein, Samis, Stidham

This book contains the papers presented at a Symposium held in Miami, Fla. in March, 1972. It is one of the first volumes produced by Academic Press Rapid Manuscript Reproduction, and the speed of publication is indeed remarkable. This was achieved in part by the use of offset print, and no doubt also by adequate urging of the participants to produce their manuscripts in time.

The two editors, both from the convening Department of Physiology at the Miami School of Medicine, are active in the study of ageing processes in insects, and it would have been fair to indicate in the title that all of the nine review and research papers making up the book report on work done on insects. The borderline between development and ageing is vague and almost all papers are of interest to developmental biologists. They deal with a variety of subjects ranging from the hormonal control of cellular growth and death via overall nucleic acid, protein, and enzyme biochemistry to molecular biology (examples of the latter are satellite DNA and soluble DNA). One paper deals with ovarian maturation, oogenesis and embryogenesis. Another paper compares findings obtained in rodents with data on insects.

The book is well produced at a very reasonable price.
Monographs

107.
J.M. ANDERSON. 1972. NATURE'S TRANSPLANT, the transplantation immunology of viviparity
Butterworths, London, etc. VIII, 145 pp., 2 figs., 10 pls., 2 tabs., subject index. £ 3.00 (paper)


The author of this concise research monograph writes in his preface: "The important facets of the possible mechanisms that avert immunological destruction of the fetus by the mother and allow fetal immunity to develop without reacting to maternal antigens in humans remain speculative. The available clues to an understanding of these mechanisms indicate that the depression of some immune responses during pregnancy resembles other sorts of adaptive immunity such as "tolerance", "paralysis" and "enhancement", also that firm correlations exist between the fetus-mother relationship and the surgical transplant-recipient and cancer-host relationships". This sets the scene for an authoritative and highly interesting discussion of these subjects on a broadly biological basis in eight short chapters, the titles of which speak for themselves. The aspects which are considered in the concluding chapter are artificial inertia, hemolytic disease, and infertility.

Each chapter has its own selective reference list. Apart from this, there is a 48-page, up-to-date classified bibliography (9 sections) which covers the literature much more completely and shows hardly any overlap with the chapter references. The book is illustrated with ten photographic plates bound in the middle of the book.

108.
Thomas, Springfield. X, 171 pp., 36 figs., 38 tabs., subject index. $ 15.75

Most of this book deals with amniotic fluid and with water and electrolyte exchange among uterine compartments. The book is mainly meant for clinicians, and all authors are obstetricians or pediatricians. However, some chapters contain information that may be of interest particularly to human embryologists.

This holds particularly for the chapter by Biggers (29 pages), in which he reviews modern work on the origin of blastocoelic fluid and the formation of the blastocyst in mammals, and points out possible parallels with amnion formation. Seeds briefly treats the biophysics of intra-uterine water transfer in pregnancy (16 pp.), and then deals more extensively (26 pp.) with various aspects of amniotic fluid per se, such as its volume and chemical composition throughout pregnancy and their regulation, fetal urine production, and fluid exchange between amniotic fluid, fetus, and maternal organism. A chapter by Nadler (17 pp.) is mainly a compilatory review of biochemical components of am-
niotic fluid and of cells isolated from it, with a long bibli-
ography. The other four chapters are of clinical importance only.

109.
H. E. PERSSON. 1973. DEVELOPMENT OF SOMATOSENSORY CORTICAL
FUNCTIONS, an electrophysiological study in prenatal sheep
64 pp., 26 figs.

Study involving 67 experiments performed on externalized, non-
anaesthetized sheep fetuses from 42 days till full term, still
attached to the ewe; laminar analyses of evoked surface and
depth gross responses as well as extracellular single-unit acti-

vity following tactile trigeminal stimulation; correlation with
changes in cortical cyto-architecture.

110.
M. WINICK, ed. 1972. NUTRITION AND DEVELOPMENT
X, 245 pp., 58 figs., 36 tabs., subject index. £ 7.80

Contents: 1. Development of physiological regulations; 2. En-
zyme development and nutrition; 3. Nutrition and cell growth;
4. Lipid metabolism and nutrition in the prenatal and postna-
tal periods; 5. Hormonal and dietary factors in the develop-
ment of digestion and absorption; 6. Metabolic changes in
children with protein-calorie malnutrition

This book was written by an international team of experts:
five Americans, four Jamaicans, two Australians, and one Cana-
dian. All chapters are synthetic reviews and all deal with pre-
and postnatal mammals and man. The subject is discussed against
a broad biological background.

Ch. 1 (by Adolph; 22 pp.) views the emergence of physiological
regulation in the fetus and neonate in a broad context and
serves as a theoretical introduction to the volume. Chs. 3 and 5
are the longest (50 and 66 pp., respectively); the other chap-
ters range in length between 26 and 38 pages.

As the various chapters were apparently not written at the
same time, their bibliographies are not equally up-to-date. Sev-
eral chapters contain much tabular material; the illustrations
are confined to graphs. The book is well produced.

Dissertations

111.
H. van der HELM-HYLKEMA. 1973. EFFECTEN VAN VROEG NEONATAAL TOE-
GEDIEND ACTH EN AAN ACTH VERWANTE PEPTIDEN OP DE SOMATISCHE EN
GEDRAGSONTWIKKELING VAN DE RAT (Effects of early-neonatally in-
jected ACTH and ACTH-related peptides on the somatic and behav-
ioural development of the rat)
Ph.D. thesis, Utrecht. 112 pp., 14 figs., 11 tabs. (English sum-
mary, 4 pp.)

Study of the effects of a single injection, on the 3rd day of
life, of ACTH or peptides derived from it, on somatic develop-
ment (weight gain and eye opening) and on walking activity and
behaviour patterns; evidence for a direct effect on CNS.
Symposium reports

112.  
L.O. BOREUS, ed. 1973. FETAL PHARMACOLOGY  
Raven, New York. XVIII, 487 pp., 121 figs., 45 tabs., subject index. $21.50

This book is the report of a Symposium held in Stockholm in December, 1971. It was attended by an international group of specialists in which North Americans and Scandinavians predominated. The book is not only of interest to physicians but partly also to mammalian embryologists (more than is apparent from the session headings listed below). Most of the 29 papers contain review material and original research data in varying proportions. The majority range in length from ca. 10 to 25 pages; there is one paper of 72 pages on cholinergic function in the developing fetus.

The range of subjects covered is very broad. Apart from the closing session, which contains a brief report of a discussion on some biochemical and pharmacological aspects of the developing embryo, the main papers are grouped into five sessions as follows: Drug distribution (8 papers); Drugs and autonomic function (9); Drug metabolism (6); Drugs and the blastocyst (2); and a session containing a paper on the theory of fetal drug equilibrium and one on the contributions of teratology to fetal pharmacology.

113.  
CIBA - Symposium. 1972. ONTOGENY OF ACQUIRED IMMUNITY  
Elsevier - Excerpta Medica - North Holland, Amsterdam, etc.  
X, 283 pp., 41 figs., 43 tabs., index to contributors, subject index. Dfl. 35.00, $12.75

The CIBA Symposium volumes hardly need recommendation any more. The present Symposium was held in November 1971. Among the 14 papers five are of predominantly clinical significance. Of particular value are the extensive discussions, complete with references. They are characterized by a lively exchange of information between laboratory workers and clinicians.

Among the more biologically oriented papers we want to single out the following as being of general interest to our readers: Owen on the development of lymphocyte populations; Adinolfi on the ontogeny of complement and lysozyme; Stites et al. on the development of cellular immune competence in man; and Beer and Billingham on the uterus as a graft site and the foetus as a natural homograft. The remaining papers in this group are either more theoretical or more specialized in nature, but all will be of great interest to the specialists in this field.

The Symposia are now produced by another publisher, on much better paper and with a sturdy cover. This has entailed some price increase, but the price is still very reasonable. The indexes refer not only to the papers but also to the discussions.

114.  
R.S. COMLINE, K.W. CROSS, G.S. DAWES, and P.W. NATHANIELSZ, eds.  
1973. FETAL AND NEONATAL PHYSIOLOGY  
Cambridge Univ. Press, London, etc. XXIV, 641 pp., 253 figs., 17 pls., 76 tabs. £11.60, $32.50

This volume contains the papers read at a three-day Symposium held in Cambridge, England in July 1972. Of the 66 contributions, the great majority are by American and English workers (49), five
each are from Australia and Canada, and the remainder from Sweden, France, and New Zealand. The organizers have made an effort to cover a very wide field, with emphasis on those areas where research is particularly lively. An area that was explicitly excluded is foetal immunology.

The contributions vary widely in character, and deal with a variety of mammals including man. About two-thirds are from a few to about ten pages long; most of these are concise research reports, while some are hardly more than abstracts. The remainder range in length from ca. 15 to 25 pages and are usually mixtures of review and research report, but occasionally restricted to recent review material only. The papers are arranged in seven sessions as follows: Central nervous system (11 papers); Circulation and breathing (12); Placental function (10); Metabolism (11); Endocrinology (10); Parturition (8); Surfactant colloquium (4).

In the interest of rapid publication the discussions were not included, and no indexes or list of contributors were compiled. Although the speed of publication is indeed remarkable, it is doubtful whether this outweighs the lack of indexes. The book is very well produced and well illustrated.

115. J.J.MENN and M.BEROZA, eds. 1972. INSECT JUVENILE HORMONES: Chemistry and action Academic Press, New York, etc. XVI, 341 pp., 63 figs., 57 tabs., subject index. $ 11.00

This is the report of an all-American Symposium held in Washington, D.C. in September, 1971. It was attended by scientists representing universities, government agencies, and industry, and its primary focus was on the possible use of juvenile hormones and their analogues as pesticides. However, the scope of the Symposium was much wider than this, and scientists working on any aspect of JH research will find the book useful and interesting. The contributions were reproduced in offset print from typescript copies in the interest of rapid publication; this has led to some overlap and some inconsistency in nomenclature. The discussions are not recorded.

The 14 contributions deal with biological (6 papers), biochemical (3), and chemical (5) aspects. Three papers in the first group deserve special mention: Williams and Kafatos on the theoretical aspects (proposing a model in which JH participates in the negative control of master regulatory genes coding for RNA polymerase); Ilan, Ilan and Patel on JH effects at the translational level; Riddiford on JH and insect embryonic development. In the second group attention is focussed on the metabolic breakdown of JH in insects, mammals, and the environment.

Books of readings

116. V.H.DENENBERG, ed. 1972. READINGS IN THE DEVELOPMENT OF BEHAVIOR Sinauer, Stamford. X, 483 pp., 94 figs., 112 tabs., subject index. £ 2.90 (paper)


This book of readings is concerned entirely with postnatal behaviour in mammals and man. It has been organized in such a way that broad principles can be derived which apply to animals and humans alike. In each chapter the papers reporting on human studies illustrate the same principles as the papers dealing with animal experiments. Of the 65 papers, 21 deal with the human, 23 with the rat, and 21 with four other mammalian species. Each of the chapters 2 to 13 consists of between four and seven short to medium-length papers. Sometimes somewhat older papers were intentionally selected rather than very recent ones.

Ch.1 is a lengthy and thoughtful introduction to the entire field covered by the book, and has its own references. Each chapter is opened by a very good introduction of a few pages, with separate references, in which the readings are placed in proper perspective and briefly characterized. Together these introductions provide an excellent brief survey of the field.

DEVELOPMENTAL GENETICS, EVOLUTION (see also 1,6,10,17,21-23,35, 43,47,49,56,83,98,102,104-107,116,132)

Textbooks


This is a highly competent, well-written and well-illustrated review of an important field of enquiry. The only odd point is the statement on the first page that "There is no known way of making a cell committed to one kind of differentiation change into a cell of another kind". One immediately asks: What about lens regeneration from the iris in the eye of urodeles? This phenomenon, admittedly the only well-established case of cellular metaplasia in a vertebrate, is not mentioned in the text. There are a number of confusing printing errors.

Monographs

118. W.BEERMANN, ed. 1972. DEVELOPMENTAL STUDIES ON GIANT CHROMOSOMES Springer, Berlin, etc. Results and problems in cell differentiation Vol.4. XVI,227 pp., 110 figs., 14 tabs. DM 59.00, $ 18.70

Contents: 1. Chromomeres and genes (Beermann); 2. Chromosomes isolated from unfixed salivary glands of Chironomus (Lezzi and Robert); 3. Replication in polytene chromosomes (Rudkin); 4. Transcription in giant chromosomal puffs (Felling); 5. Puffing patterns in Drosophila melanogaster and related species (Ashburner); 6. Relation of puffing to bristle and footpad differentiation in Calliphora and Sarcophaga (Ribbert); 7. The control of puffing in Drosophila hydei (Berendes); 8. Balbiani ring activities in Acricotopus lucidus (Panitz)

The editor of this new volume of a successful series states in his preface that he has not aimed at completeness. The table of contents shows that this is so, but the contributors who have been selected are all recognized authorities in the field and have provided well-organized, well-written, and up-to-date reviews which nobody even remotely interested will want to miss.
The scope of most contributions is wider than the volume title suggests, and they will be read with profit by all those interested in chromosome structure and function, and in eukaryotic gene regulation generally. Contribution 1 has some striking electron micrographs of Drosophila chromosomes, while contribution 6 devotes attention to the strict parallelism between puffing activity and cellular differentiation in "Kleinorgane", the latter illustrated with electron and Nomarski interference micrographs.

The book is beautifully produced and illustrated, but one wonders whether the luxurious production and the concomitant high price were really necessary, particularly in view of the absence of indexes.

119.
B. EPHRUSSI. 1972. HYBRIDIZATION OF SOMATIC CELLS
Princeton Univ. Press, Princeton. XII, 175 pp., 35 figs., 14 tabs., author and subject indexes. £ 4.75, $ 9.50 (cloth); £ 2.50, $ 4.95 (paper)

This stimulating monograph is based on the text of three lectures given at Princeton University in January, 1971. The text has been somewhat extended and updated and 30 pages of notes were added, but the treatment is still highly selective. The resulting brevity makes the book very suitable for rapid orientation in this fascinating field, particularly for developmental biologists, because the author's main interest has always been in problems of cell differentiation. The book has a distinctly personal flavour; much attention is devoted to theoretical implications.

The author was one of the pioneers in this area since it was opened up in 1960. The first chapter presents an introduction into the principles of the cell fusion technique in the form of an historical account. The bulk of the book deals with its application to three areas of research: human genetics, cell differentiation, and cancer. The second area takes up almost half of the main text, i.e. three chapters, two of which bear the subtitles Reactivation of nuclei of differentiated cells in heterokaryons, and The fate of luxury functions in somatic hybrids. In the latter the main theoretical preoccupation is with the stability of the determined (epigenetic) state of cells in vitro. The other two areas mentioned are treated much more briefly, that of cancer again chiefly in view of its possible implications for normal development. In his concluding remarks the author touches upon much broader theoretical problems, such as the possible role of the cell membrane in differentiation and the cell theory generally.

The book is attractively produced and well illustrated.

120.
G. JÄGERSTEN. 1972. EVOLUTION OF THE METAZOAN LIFE CYCLE, a comprehensive theory
Academic Press, London, etc. X, 282 pp., 59 figs., author and subject indexes. £ 5.00, $ 15.50

This book is essentially a translation of a book first published in Swedish in 1968. It contains a new, comprehensive (but somewhat controversial) theory of metazoan evolution which has its starting point in the author's "bilaterogastraea" theory first expounded in 1955. Since then the author has carried out a number of necessary supplementary studies which are incorporated into this text. The central thesis of the new theory is
that the life cycle original for all metazoan phyla comprises
two phases, a pelagic larval and a benthic adult phase. This
then leads to extensive discussions, particularly of Haeckel's
"biogenetic law".

The introductory chapter briefly discusses "primary larvae",
"adultation", direct development, and "secondary larvae". The
special section which follows occupies about three-quarters of
the book and systematically examines the marine larvae of all
metazoan phyla. The general section then discusses these data
in 10 short chapters, the last two being devoted to the evi-
dence for recapitulation in its modified and qualified sense.
The book is well printed and illustrated with good, largely
original line drawings.

121.
U.MITTWOCH. 1973. GENETICS OF SEX DIFFERENTIATION
Academic Press, New York, etc. XIV, 253 pp., 40 figs., 6 tabs.,
author and subject indexes. $ 16.50

Contents: 1. Classical genetics of sex differentiation; 2.
Genetics of continuous variation; 3. Aspects of the gene; 4.
Heterochromatin; 5. The nature of sex differentiation with
special reference to vertebrates; 6. Sex determination in man
and other mammals; 7. Genes, chromosomes, growth, and sex

This interesting book elaborates a thesis based primarily on
recent findings of the author in mammals and birds. The thesis
and its wider biological implications become clear from a quo-
tation from the preface:
The purpose of this book is to bring together evidence that
the sex chromosomes may affect the rates at which cells di-
vide and that the process of sex differentiation is based on
differences in growth rates during development ..... [It] is
hoped that the approach I have chosen -- looking beyond the
formal gene- phenotype relationship and emphasizing the dynam-
ic relationship between chromosomes and growth -- will lead
to a better understanding of the role of chromosomes in the
development of sexual and other characteristics, i.e., those
which are basically of a quantitative nature.

Although it must be admitted that the direct evidence for
the thesis is still scarce, it is supported by much indirect
evidence, partly from outside the area of sex differentiation
itself, and this is expertly discussed in a series of concise
but well-organized chapters. The theory of sex determination
by Mendelian genes is dismissed, and much stress is placed on
the non-genic heterochromatic chromosome regions and their reg-
ulatory role in cell proliferation and growth generally, i.e.
in a variety of plants and animals and in both sexual and non-
sexual organs and phenomena. Thus the scope of the book is much
wider than the title indicates.

Symposium reports

122.
B.I.CHERFAS, ed. 1972. GENETICS, SELECTION, AND HYBRIDIZATION
OF FISH, translated from the Russian by R.Lavoott
Israel Program for Scien. Translations, Jerusalem. VI, 269 pp.,
34 figs., 62 tabs.

This volume contains 28 papers presented at a Conference held
in Leningrad in 1967. Although this is a long time ago, several
of the papers may still be of interest to fish embryologists,
if only because they provide access to work performed and published in the USSR. We restrict our review to the papers which have some bearing on fish development. (The other papers deal with various theoretical and practical aspects of the genetics, cytology, and selection of fish and with some postembryonic characteristics of interspecific hybrids.)

We mention first of all a review by Vanyakina (17 pp.) on the genetics of sex determination and on some problems of hormonal regulation of sex in teleosts, based mostly on non-Russian literature. Papers by Smirnov (19 pp.) and by Makeeva (27 pp.) deal with developmental characteristics of salmon and carp hybrids, respectively. Both have good line drawings of hybrid embryos and fry. The other three papers in question are brief research reports on artificial gynogenesis in carp (Golovinskaya), gonadal development and fertilization in grass carp (Bobrova), and the control of sex ratio by (visual?) feedback (Geodakyan and Kossbutskii). The titles of the Russian references are translated.

123. M. SUSSMAN, ed. 1972. MOLECULAR GENETICS AND DEVELOPMENTAL BIOLOGY
Prentice-Hall, Englewood Cliffs. XII, 481 pp., 138 figs., 46 tabs. $ 12.00, £ 6.00

Contributors: Baltimore, Britten, Brown, Darnell, Edmonds, Gage, Gross, Halvorson, Miller, Mintz, Pardee, Roeder, Rutter, Sarkar, Sato, Stephens, Sussman, Tashjian, Thomas, Travers, Weiss, Woodland

This book is of great interest because it provides an excellent "cross section" of the present state of our knowledge in an important area of frontier research. It is based on a Symposium held in September, 1971, but most contributions have clearly been updated prior to printing. The far greater majority of the contributions are by American groups. Although not all contributions have a direct bearing on embryonic development, all of them are no doubt highly relevant to developmental regulation in a broad sense, and all are by outstanding experts.

The 22 contributions range in length from about ten to over 30 pages, and deal with a great variety of systems. Almost all papers report on unpublished results, and many in addition contain concise, readable, and critical reviews of recent to very recent work.

The papers are arranged in four sections, the contents of which can be briefly characterized as follows: I. The genomes of eukaryotic cells: molecular and developmental aspects (moderately repetitive DNA sequences; ring-shaped eukaryotic DNA; cytological nucleic acid hybridization; evolutionary model of gene expression in immunocytes; silk fibroin genes in Bombyx); II. Information flow from the genome to the cytoplasm and back (RNA polymerases in eukaryotes and in amphibian development specifically; ribosomal RNA synthesis in bacteria; electron microscopy of gene transcription; formation of mRNA in HeLa cells; poly-A sequences in RNA; RNA-dependent DNA polymerases); III. Programs for protein synthesis (yeast melosis; Quantal control in Dictyostelium; embryonic neural retina; sea urchin cleavage; sea urchin cilia; cultured pituitary cells); IV. The inheritance of differentiative capacity (Xenopus egg as an assay system; hepatoma cell hybrids; clonal differentiation in mammals; hormone-dependent ovarian cells in culture).

The book is produced in offset print and adequately illustrated. The photographs are well reproduced except for one or
two which have lost most of the detail. The book has no indexes and rather many printing errors.

Reference works

124.
Oxford Univ. Press, London, etc. VIII, 337 pp., many figs. £ 2.25, $ 4.95 (paper)

This is the second edition of a book first published in 1968 (see review in Gen. Embryol. Inf. Serv., vol. 13, 1969, p. 312). Although it is a glossary rather than a dictionary, it is useful particularly for students who are beginning to read the primary genetical and related literature.

In the new edition 700 new entries have been added, some ex- tant entries redefined, and some of the appendices updated. A flaw that has not been removed is the inconsistency and inac- curacy of many of the cross references. For instance, under "In- trachromosomal aberrations" the reader is referred to "Aberra- tions", whence he is referred further to "Chromosomal aberra- tions". Under "Field" there is a reference to "Pattern", but the latter entry is absent. There are more similar examples. Some care should be devoted to this in future editions.

SEXUAL DEVELOPMENT, GAMETOGENESIS, FERTILIZATION, REPRODUCTION

Treatises

125.
H. BALIN and S. GLASSER, eds. 1972. REPRODUCTIVE BIOLOGY
Excerpta Medica, Amsterdam. XII, 973 pp., 280 figs., 68 tabs., subject index. Dfl. 152.00

Contents: I. Neuroendocrine-hormonal interrelationships (3 chs.); II. Gonadal factors: male (3); III. Gonadal factors: female (10); IV. Utero-ovarian-fetal interrelationships (6); V. Ancillary hormonal and socio-behavioral influences on re- production (3)

The reason why we briefly review this book is that almost all mammalian embryologists will at one time or another be confront- ed with problems of mammalian reproductive biology. The book presents a selective but well-integrated series of 25 critical and highly informative reviews of major areas in this field, written by 31 American and three European experts. Both basic and clinical aspects are considered. Perhaps understandably, not all chapters are equally up to date. The groups of chapters out- lined in the table of contents above are each preceded by an introduction by the editors which places the chapters in ques- tion in wider perspective.

Chapters of particular interest to our readers are those by Bedford on sperm transport, capacitation and fertilization, by Baker on oogenesis and ovarian development, by Brinster on the nutrition and biochemistry of the developing zygote, by Glasser on the uterine environment in implantation and decidualization, and by Parks and Zimmer on immunological aspects of the fetal- maternal relationship. In the third and fifth of these most of the literature cited does not go beyond 1969.
Textbooks


Contents: 1. Primordial germ cells (Baker); 2. Oogenesis and ovulation (Baker); 3. Spermatogenesis and the spermatozoa (Monesi); 4. Cycles and seasons (Sadleir); Fertilization (Austin)

This series of five small textbooks was written mainly for the use of undergraduate students, but is eminently suited for specialists in other fields to update their knowledge of mammalian and human reproduction.

Book 2 of the series was reviewed in this issue under no. 34. All that was said there applies to the present volume. The illustrations by Fuller are of unsurpassable quality; those based on electron micrographs are stunningly realistic.

Monographs


Contents: 1. The egg; 2. The spermatozoon; 3. Gametic association; 4. Number of spermatozoa penetrating egg and fate of supernumerary spermatozoa; 5. The cortical reaction in physiologically monospermic eggs of fishes and other animals; 6. The mechanism of the block to polyspermy

This is an unchanged translation of a book first published in Russian in 1968; it is the first comprehensive review of fertilization patterns in relation to the problem of polyspermy, with special reference to fishes. The author has worked in this area for many years and has incorporated many of her own research findings. Morphological, ultrastructural, and physiological aspects are extensively discussed.

The first two chapters each have a general and a comparative section, both restricted to fishes. Ch. 3 is a general discussion of sperm-egg interaction and of the various hypotheses proposed to explain it. Ch. 4 is largely comparative and deals first with fishes and then, more briefly, with invertebrates and chordates other than fishes. Ch. 5 is likewise comparative. Finally, ch. 6 suggests a one-step mechanism for the block to polyspermy based on the discharge of cortical granules and alveoli, which is discussed with special reference to fishes and sea urchins.

The book is produced in offset print. Most of the photographic illustrations are brought together in plates at the end of the book; unfortunately all have suffered badly from reproduction. The bibliography has more than 1,300 entries; about 250 of these are Russian titles (with English translations). The book has no indexes.
Comparative Morphology of the Mammalian Ovary


Univ. of Wisconsin Press, Madison, etc. XXVIII, 461 pp., 198 figs., 9 tabs., combined subject and taxonomic index. $25.00


This scholarly monograph was written by two eminent experts and embodies much of their unpublished material gathered in the course of several decades. They state in their preface that one of the purposes of the book is "to reduce the misunderstanding and misinformation regarding the mammalian ovary which one encounters on every hand". In so far as this is due to the fact that most people's knowledge is restricted to a few common laboratory mammals and man, the broadly comparative approach taken here is particularly valuable.

The first three chapters present the necessary background in a relatively straightforward manner, though in more detail than is usually found in textbooks. In ch.4 the red squirrel, Tamiasciurus hudsonicus, is adopted as a sort of "type species", while ch.5 follows a similar pattern for the discussion of the human ovary. Ch.6 then takes up the comparative approach in more detail; it is in part a synthesis of the extensive information presented in taxonomic order in the form of synoptic tables and supplementary notes in the 100-page appendix. A subject which was intentionally omitted is the cytology, cytogenesis, and cytolysis of ova.

Subjects of particular interest to embryologists discussed in ch.7 are the origin of oogonia, ovarian regeneration, natural superovulation, intra-ovarian parthenogenesis, and induction and metaplasia in the ovary. Ch.8 contains a schematic summary of the authors' concepts of the developmental origin of the major components of the mammalian ovary.

The book is well produced and profusely illustrated, mainly with very good photomicrographs. It has a useful glossary and a 36-page bibliography.

The Reproductive System of Male Fishes (in Russian)

A.P.Turakov. 1972. THE REPRODUCTIVE SYSTEM OF MALE FISHES (in Russian)

Ilim, Frunze. 280 pp., 61 figs., 13 tabs.

Development, structure and function of male reproductive system; sex differentiation, hermaphroditism, sex-reversal; gonadal cycles, spermatogenesis; ejaculate, spermatozoa; 34-page bibliography (8 pages Russian).

Invertebrate endocrinology has been a speciality of French zoologists for a long time. This collection of reviews contains
contributions from eight leading investigators in this field, six French, one Belgian, and one Japanese. The reviews are extensive, well illustrated and up to date, and deal with gonadogenesis, gametogenesis, and gamete maturation in different combinations, particularly from an endocrinological viewpoint.

The taxonomic groups considered are the following: hydrozoans (Brien); polychaetes (Durchon); gastropods (Streiff); higher crustaceans (Charniaux-Cotton); isopods (Legrand and Juchault); insects, especially Lampyris noctiluca (Naisse); echinoderms, particularly Asteroida (Kanatani).

The book provides a good entry into the relevant literature in French and would merit to be translated into English. It is well produced but the price is rather high.

131.
L. ZAMBONI. 1971. FINE MORPHOLOGY OF MAMMALIAN FERTILIZATION Harper & Row, New York, etc. XVI, 224 pp., 99 figs., subject index. $15.00, DM 55.50

In this atlas the author, a pathologist who has been active in this field for years, has attempted to illustrate the most fundamental events of gametogenesis and fertilization in mammals and man, from the mitotic division of the spermatogonium and the resting primary oocyte till the first cleavage division of the embryo.

The atlas consists of 132 good electron and light micrographs, combined into 99 full-page plates; 54 figures are of human, 74 of mouse, and 4 of rabbit material. The story told by the plates is very complete indeed, and considers all the essential normal aspects as well as some findings of rare or pathological occurrence. The appearance of the gametes at all stages during their migration through the male and female genital tracts is illustrated.

Each plate has an average of about half a page of text, usually with several references. The text is clear and authoritative, and frequent cross-references to other plates are provided. The figures are labelled well though perhaps somewhat sparsely. Once an arrow is left unexplained; another arrow mentioned in the text is absent.

Most of the electron micrographs look rather grey and in some cases there is loss of information through lack of contrast. It is difficult to judge whether this is due to preparatory or photographic techniques or to reproduction. Otherwise the book is beautifully produced at a very reasonable price.

Symposium reports

132.
R.A. BEATTY and S. GLUECKSOHN-WAESCH, eds. 1972. THE GENETICS OF THE SPERMATOZOO N

This book contains the papers read and the discussions held at a Symposium sponsored by the I.S.D.B., held in August, 1971 in Edinburgh. The book is not commercially available; a limited number of copies are obtainable on application from the Librarian, Department of Genetics, University of Edinburgh, U.K.; the lay-out of the articles suggests that reprints are available from the authors. The Symposium had about 40 participants from all over the world, including five from Eastern-European countries.
Most papers are a mixture of review and research report, and all have up-to-date reference lists. The data discussed relate to the whole animal kingdom, with emphasis on man, mammals, and Drosophila. The 27 papers are grouped in seven sections. We mention these below, singling out in brackets those contributions that we feel are of particular significance to our readers:

Sperm structure and development (3 papers; Fawcett on cell differentiation and organelle continuity in spermatogenesis; Bedford et al. on post-meiotic changes in the nucleus and membranes of mammalian spermatozoa); Sperm metabolism and function (Moore on RNA polymerase during mammalian spermatogenesis); Pheno- genetics of spermatozoa (5 papers); Immunogenetics of spermatozoa (3 papers); Segregation distortion (8 papers; among other things, discussions of possible haploid gene action); Determination of germ cell sex (McLaren on germ cell differentiation in mouse chimaeras; Short on germ cell sex); Effect of chromosomes on germ cell development and function (4 papers; Meyer on the influence of the Y chromosome on fertility and phenotype of Drosophila spermatozoa).

The book is exceedingly well produced and beautifully illustrated, mainly with photo- and electron micrographs. It has no indexes.

133.
J.D.BIGGERS and A.W.SCHUETZ, eds. 1972. OOGENESIS
Univ.Park Press, Baltimore; Butterworths, London. X,543 pp.,
328 figs., 63 tabs., subject, taxonomic, and author indexes.
$ 19.50, £ 8.00

Contributors: Anderson, Baker, Beatty, Biggers, Blackler,
Blandau, Calarco, Crippa, Davidson, David, Donahue, Ford,
Huang, Kanatani, Kennedy, King, Miller, Nalbandov, Odor,
Pedersen, Schuetz, Smith, Szollosi, Thibault, Tocchini-
Valentini, Wallace, Zamboni

This volume contains the contributions presented at an international Symposium held in October, 1970 in Baltimore, Md.

According to the prologue "Its purpose was to provide an up-to-date account of oogenesis in the several areas, and to encourage the exchange of ideas between the scientists involved in the three main areas of study [meiosis, developmental aspects, endocrine regulation]. Major emphasis is given to the comparative approach, and to aspects of oogenesis not generally considered. The topics were chosen to stress the viewpoint that oogenesis is a major segment in the continuum of life, and that the oocyte is specialized by a process of differentiation to (1) undergo meiosis, (2) participate in cell fusion, and (3) accumulate and provide materials which govern the nature and nurture of the new individual produced when the ovum is fertilized."

The large majority of the 25 contributions are complete and usually long reviews. Taken together they contain almost all the recent information on oogenesis in easily surveyable form (with emphasis on the vertebrates), so that the book is a valuable reference source.

The book is handsomely produced in offset print, resulting in a reasonable price. The numerous excellent photo- and electron micrographs are reproduced with great care.
134.
K.S. MOGHISSI and E.S.E. HAFEZ, eds. 1972. BIOLOGY OF MAMMALIAN FERTILIZATION AND IMPLANTATION
Thomas, Springfield. X, 509 pp., 139 figs., 2 coloured pls., 90 tabs., subject index. $ 31.00

This volume contains the proceedings of a Symposium held in October, 1970 in Detroit, Mich. All but one of the 21 contributors were Americans. Although the main preoccupation was with possible contraceptive applications, many of the contributions will be of interest to mammalian embryologists generally. Most papers range in length from about 15 to 30 pages, all are surveys of original research that was recent to very recent at the time of writing, and several have very long bibliographies (which however do not go much beyond 1970). No discussions are recorded.

The 16 contributions are arranged in three sections dealing with sperm capacitation, fertilization, and implantation respectively. The first section will not be considered here. Papers in the other two sections that are of particular interest to our readers are the following: Brackett et al. on rabbit and human fertilization in vitro; Stambaugh on acrosomal enzymes; Zamboni on fertilization in the mouse (50 pp.); Edwards on human fertilization and cleavage in vitro; Hafez on differentiation of the blastocyst (47 pp.); Mintz on an implantation factor from mouse uterus; Boving on blastocyst spacing and orientation in the rabbit; Laurence on immunological studies of nidation.

The book is well produced and profusely illustrated. The numerous photo- and electron micrographs are well reproduced.

135.
S.J. SEGAL, R. CROZIER, Ph.A. CORFMAN, and P.G. CONDLIPFE, eds. 1973. THE REGULATION OF MAMMALIAN REPRODUCTION
Thomas, Springfield. XXIV, 586 pp., 202 figs., 91 tabs., subject index. $ 44.50

This volume embodies the proceedings of a Conference held in Bethesda, Md. in September, 1970. Consequently, the publication has taken more than two years, which detracts from the topicality of the book. The Conference had more than 130 participants from 23 countries throughout the world.

The 39 papers and their discussions are grouped into six sections as follows: 1. Regulation of pituitary function (7 papers); 2. Regulation of sperm production (6); 3. Fertilizing capacity of spermatozoa (6); 4. Biology of the mammalian ovum (4); 5. Tubal transport of gametes (6); 6. Corpus luteum function (10). Section 4 has papers by Buggers on oogenesis and ovum maturation, by Graham on nucleic acid metabolism during early mammalian development, by Brinster on protein synthesis and enzyme constitution of the preimplantation mammalian embryo, and by McLaren on blastocyst activation. In sections 1, 2, and 5 almost all papers are of potential interest to mammalian embryologists. The book is concluded by 30 pages of general discussion which contain several original contributions, complete with illustrative and tabular material. Most of these centre around endocrinology and male contraception. A conference summary of nine pages is provided by Diczfalussy.

The book is beautifully produced and illustrated, but one wonders whether a less luxurious production resulting in a lower price could not have made the book accessible to more potential users.
Books of readings


For general characterization of the series, see review no. 139.

MSS Inf. Corp., New York. 169 pp., 58 figs., 25 pls., 15 tabs. $15.00

For general characterization of the series, see review no. 139.

MSS Inf. Corp., New York. 244 pp., 174 figs., 29 tabs. $15.00

For general characterization of the series, see review no. 139.
Papers dealing with male and female germ cells in a variety of plants and animals: premeiotic and meiotic DNA synthesis (11 papers); physiology and biochemistry of meiotic events (11). First authors: Antropova, Bianchi, Bogdanov, Brasiello, Brown, Callebaut, Chiang, Church, Crone, Dickinson, Gould, Hotta, Howell, Kessel, Morrill, Mukherjee, Muramatsu, Odartchenko, Parchman, Stern. Years of publication: 1968-1971.

METHODS (no entries, but see 80)

HISTORY, BIOGRAPHIES, etc. (no entries)

MISCELLANEOUS ITEMS

Books of readings

139. MSS SERIES OF BOOKS OF READINGS
MSS Information Corporation, 19 East 48th Street, New York, N.Y. 10017, U.S.A.

This new series was started in 1972 and is by now quite extensive. Volumes having a bearing on developmental biology which were at our disposal have been briefly characterized under the appropriate headings (see author index, entry MSS).

The editor or editors of the series are anonymous, and no
justification of the choice of papers is given in the brief anonymous volume prefaces. This makes it difficult for the reviewer to judge whether the choice is authoritative in areas with which he is not familiar. In those areas where he feels more competent to judge he often found it difficult to agree with the inclusion of certain papers and the omission of others. However, this holds for almost all selections of this kind.

A remark that holds for the series as a whole is that some areas are covered much more extensively than others. In some areas, but not in all, there seems to be some bias towards American publications, which may be due in part to the understandable restriction to papers written in English. The books could be useful in graduate courses, but in any particular case this strongly depends on whether one agrees with the selection and extent of coverage. Many teachers may prefer to make their own selections.

Most papers are from well-known and easily accessible journals. The papers are reprinted in fascimile, but for some reason abstracts and summaries have usually been removed, as well as authors' addresses. The text is on the whole clearly printed, but the photographic illustrations have suffered from reproduction to varying degrees, sometimes to the extent of losing most of their information content. Each volume has indexes to authors and title key-words of the papers included. The tables of contents and the credits and acknowledgements show signs of hasty composition and careless proof-reading.

The books are sturdily bound, but the price per volume is too high for the value one gets. The use of the name of the first author of the first paper on the back, where the editor's name should be, is highly misleading. One of the volumes at our disposal contains 16 wrong pages (see review no. 45).

Reference works

140.
Fed.of Am.Societies for Exper.Biology, Bethesda. XX,606 pp., numerous tabs., combined subject and taxonomic index. $ 30.00 per volume or $ 75.00 for the three-volume set

Contents: I. Genetics and cytology; II. Reproduction; III. Development and growth; IV. Properties of biological substances; V. Materials and methods; Appendix I-IX

The second edition of this book, which was first published in 1964, has been greatly expanded, and now appears in three volumes totalling more than 1,600 pages (as against 633 for the first edition). The expansion has resulted in part from the inclusion of material from the specialized handbooks previously published in the same series. In addition many more species were covered.

Vol.I is based on contributions made by 245 research scientists in the capacity of primary contributors or reviewers. Part III, which is of most immediate interest to our readers, was expanded from 40 to 74 pages. Among the new sections are: time variations in developmental stages of mammals and birds; equivalent numerical designations for stageing systems in amphibians and fishes; normal stages for Ambystoma maculatum; liver regeneration in the rat; limb regeneration in newts. Human postnatal growth data are now in a separate chapter. Normal stages for the mouse and for Xenopus laevis are lacking.
their inclusion in later editions should be considered.

The information in part II is biological rather than physiological, but there is much of interest there for embryologists: gestation and incubation times, modes of fertilization and development, breeding seasons, etc. (for both vertebrates and invertebrates).

Two new appendixes have been added: a listing of scientific names with corresponding common names, and the converse. The classification outline for living animals and plants has been considerably modified for several phyla.

Vols. II and III will appear in 1973 and 1974, respectively. The books are produced with great care and are extensively indexed.