GENERAL EMBRYOLOGICAL INFORMATION SERVICE

Supplement to
VOLUME 13
1970

Utrecht-Netherlands
GENERAL EMBRYOLOGICAL INFORMATION SERVICE

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VOLUME 13
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Utrecht-Netherlands
Edited by Prof. P. D. Nieuwkoop,
Director of the Hubrecht Laboratory

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Universiteitscentrum ‘De Uithof’
UTRECHT, Netherlands

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- New addresses of persons appearing in the main issue
- Names of persons deceased since publication of the main issue
- Full addresses of I.S.D.B. members whose addresses were received too late for the main issue

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Communications from the
HUBRECHT LABORATORY

I The scientific staff

Dr. J. Faber was appointed Deputy Director of the Laboratory as from January 1st, 1970. He is therefore no longer in charge of the research unit of developmental genetics. However, this unit continues to exist and the vacancy will be filled in 1971.

II Annual Progress Reports

Reports on the progress of research at the Hubrecht Laboratory are at present available for the years 1968 and 1969. They will be distributed as reprints and are available on request. The work of foreign guests is also summarized in these reports.

III Seventh International Research Group in Developmental Biology

This project was formerly called the "international team project". The seventh international research group will meet at the Hubrecht Laboratory from January 17th till July 15th, 1972. It will be open to young post-graduates (age limit 35). The members will work on a variety of research subjects, most of which are concerned with the establishment of structural and metabolic patterns in developing systems.

A circular pertaining to this International Research Group has been distributed on a large scale. Copies are available on request from the Director of the Hubrecht Laboratory. The closing date for application is April 15th, 1971.

IV International facilities

These facilities comprise the Central Embryological Collection and the Central Embryological Library, with its extensive reprint collection and its documentation and information services. Details pertinent to these facilities may be found in the information booklet distributed on a large scale in 1966. This booklet is available on request. A special leaflet describing the Central Embryological Library and its facilities is also available on request.
The I.S.D.B. intimates with deep regret the death of its members F. W. R. Brambell (Bangor), H. Hayek (Wien), D. R. S. Kirby (Oxford), and F. E. Lehmann (Bern).

The I.S.D.B. sponsored a local Symposium on "Environmental factors in cell differentiation" which was held in Jerusalem, Israel from April 29th till May 1st, 1970. Dr. H. Eyal-Giladi was chairman of the local organizing committee. The Hebrew University of Jerusalem and the Weizmann Institute of Science, Rehovot acted as co-sponsors. The Symposium had 38 invited participants from 13 countries; there were 82 local observers.

The I.S.D.B. at present has 479 members; 34 new members were admitted by the Board in 1970. The latest membership list is to be found in the main issue of vol. 13 of "General Embryological Information Service" (1969, p. 305). A new list will be published in vol. 14 (1971).

Proposals and spontaneous applications for membership are welcome at any time. The procedure and requirements for application are as follows:

a) Candidates for membership can be proposed or supported by two members at any time. The Board screens the application once or twice a year.

b) The requirement for membership is that the candidate should have made a substantial contribution to the field of developmental biology. The Board decides whether a particular applicant meets this standard.

c) Proposals must be accompanied by a curriculum vitae and a list of publications of the candidate, and should be sent either to Prof. E. Zwilling, Dept. of Biology, Brandeis Univ., Waltham, Mass. 02154, U.S.A. or to Prof. P. D. Nieuwkoop, Hubrecht Laboratory, Uppsalalaan 1, Universiteitscentrum "De Uithof", Utrecht, Netherlands.

Utrecht, October 1970

The Adjunct Secretary-Treasurer,

P. D. Nieuwkoop
N.B. These notices are descriptive rather than critical. Their aim is to provide an idea of the scope and potential usefulness of the books.

SBN = Standard Book Number

General biology and miscellaneous items


Instruction in developmental biology

General developmental biology

5. Gilchrist, F. G., 1968 — A survey of embryology
12. Watterson, R. L. and R. M. Sweeney, 1970 — Laboratory studies of chick, pig and frog embryos

Bio-medical science


Research in developmental biology

General developmental biology

17. Brondsted, H. V., 1969 — Planarian regeneration
20. Fischer, M., 1969 — Die Verwandlung der Insekten
22. Hadek, R., 1969 — Mammalian fertilization
Symposium reports, etc.

General developmental biology
40. Gallien, L. and A. Collenot (Edits.), 1969 — Travaux du VIe Congrès International d’Embryologie
42. Mizell, M. (Edit.), 1969 — Biology of amphibian tumors
43. Teas, H. J. (Edit.), 1969 — Genetics and developmental biology
45. Wagner, R. P. (Edit.), 1969 — Nuclear physiology and differentiation
46. Warren, K. B. (Edit.), 1968 — Differentiation and immunology

Bio-medical research, including teratogenesis
47. Compston, N. D. (Edit.), 1968 — Life before birth
48. Hafez, E. S. E. and R. J. Blandau (Edits.), 1969 — The mammalian oviduct
49. Pecile, A. and C. Finzi (Edits.), 1969 — The foeto-placental unit
50. Wolstenholme, G. E. W. and M. O’Connor (Edits.), 1969 — Foetal autonomy

Plant development
52. Mohr, G. and H. Ziegler (Edits.), 1969 — Symposium über Morphaktine
54. Turian, G., 1969 — Différenciation fongique
1

PHILOSOPHISCHE ASPEKTE IN DER
ENTWICKLUNGSPHYSIOLOGIE DER TIERE
1970
by E. Bandlow
104 pp., 4 figs.
(paper-bound)

It is rather striking that within a period of four years two Eastern-German authors have written short books on philosophical aspects of development (see Plesse, 1967, reviewed in General Embryological Information Service, supplement 1968). Apparently dialectic-materialistic philosophers are strongly attracted by developmental phenomena because these lend themselves particularly well to adstruct certain aspects of this particular brand of philosophy.

Aside from the particular marxist predilections of the author, the present book contains a measure of interesting thought on the great problems of animal morphogenesis. Much of the treatment centres around a critical discussion of neo-vitalist theories, and in most of this almost any present-day embryologist will find himself in agreement with the author’s views. This also holds for what he has to say on fields and gradients and on the principle of interaction in embryonic development.

On the other hand, there is little in the book that is really new or very original. One particularly misses a discussion of an important concept like canalization, and a reference to recent models based on cybernetics and systems analysis. Much of the literature cited is rather old.

2

THE AFRICAN CLAWED TOAD XENOPUS LAEVIS
A guide for laboratory practical work
1970
by A. L. Brown
155 pp., 36 figs.
(paper-bound)

Xenopus laevis today is very widely used by developmental biologists. This guide was written for use in schools and colleges, where Xenopus is gradually replacing the frog, at least in Great Britain. Consequently it contains little embryology in the strict sense. On the other hand, the sections on biology, maintenance, diseases, artificial breeding, and rearing of tadpoles contain much that may be of considerable help to those starting research on this material. The author obviously has accumulated much experience over the years, which is arranged in a series of short and easily surveyable chapters.

The book is of handy oblong format and is illustrated with simple but clear line drawings. Among these is a useful chart showing the speed of development at various temperatures. There is a brief bibliography and a subject index.

3

BIOLOGIE DER GEBURT
Eine Einführung in die vergleichende Geburtskunde
1970
by C. Naaktgeboren and E. J. Slijper
225 pp., 126 figs., 13 tbs.

Contents: I. Vergleichende Geburtskunde; II. Weibliche Fortpflanzungsorgane und Geburtsweg; III. Das Schwangerschaftsprodukt; IV. Die Geburt des Tieres; V. Die Regulierung der Geburtsfunktion; VI. Die Geburtslage der Frucht; VII. Die Nabelschnur; VIII. Das Neugeborene; IX. Die Mutter nach der Geburt.
The first author of this thorough and comprehensive monograph has been an active investigator in this field for at least ten years. He is one of the world's very few authorities in the field, and has received a distinction from a Dutch medical society for his work.

The book contains an amazing wealth of data on the general and comparative biology of parturition. The material is arranged logically and clearly, and covers a broad range of aspects: the approach is truly biological. The anatomy, physiology, and ethology of birth are considered exhaustively. The longest chapter, that on the birth process per se (Ch. IV) consists of a general and a special part. In the latter all mammalian orders are considered. It contains several extended protocols of birth sequences observed in nature or in captivity. The manuscript of Chapter II was contributed by the second author shortly before his death.

The book is profusely and beautifully illustrated. Of the many unique photographs a large proportion are original. Each chapter has its own bibliography, and the book is concluded by a detailed subject index. The book is well printed and well produced and the price is reasonable.

4

TOWARDS A THEORETICAL BIOLOGY

Editor: C. H. Waddington

1. Prolegomena 1968
2. Sketches 1969
3. Drafts 1970

Edinburgh University Press
Edinburgh
Aldine Publ. Comp.
Chicago, Ill.

Price: 50 s., 80 s., 70 s. respectively


These three books are the outcome of three IUBS Symposia held in Bellagio, Italy in 1966, '67, and '68. They are best reviewed together, because there is a great deal of overlap between them, both in topics and in participants. For this reason a combined list of participants is given above. Most of the participants were biologists, neuroscientists, theoretical chemists and physicists, computer scientists, and mathematicians.

It is not our intention to review the books in detail. The reason why we bring them to the attention of our readers is that developmental biology is one of the cornerstones of contemporary biology, along with cell biology, molecular biology, genetics, and evolutionary biology; this is reflected in the contents of these books. In a large proportion of the contributions problems of differentiation and morphogenesis are discussed explicitly or implicitly.

We believe that all-round developmental biologists cannot afford to ignore what is going on in the field of theoretical biology to-day. We therefore recommend these books to those who are interested but do not regularly have
access to the specialist journals in this field. It should be stressed, however, that many of the contributions presuppose a good acquaintance with contemporary physics and mathematics. The reader may obtain a more detailed picture of the sort of problems discussed at these meetings from an article by Waddington in Nature (vol. 218, no. 5141, pp. 525-527, 1968).

One of the major aims of these Symposia was "to decide what are the type of questions which in biology might correspond to the kind of questions discussed by theoretical physicists in their field" (Waddington, in vol. 2).

The contents of all three books are extremely varied, ranging from rigorous physics and mathematics to the tentative expression of personal thought, with excursions into semantics and metaphysics. There are formal presentations but also what may be called attempts at thinking aloud. Also included is a fair amount of personal comment and exchange, and some correspondence issuing from the Symposia. Part of the contents consists of reprints of previously published material, or of material published elsewhere since the Symposia were held.

The books are attractively produced at a very reasonable price. They are adequately illustrated and have author and subject indexes.

5

A SURVEY OF EMBRYOLOGY
1968

by F. G. Gilchrist
426 pp., 234 figs., 2 tbs.

McGraw-Hill Book Comp.
New York - London etc.
Price: 96 s.; $ 9.95

In this text-book for undergraduates the author has aimed at integrating descriptive and analytical embryology, in which he has succeeded admirably. The "backbone" of the book is the descriptive account of the early development of amphibians, birds, and mammals, followed by an account of vertebrate (mainly mammalian) organogenesis by organ systems. This main part is preceded by an historical introduction (which clearly brings out the major problems of embryology and the way in which they have arisen), and three good basic chapters dealing respectively with the nucleus in development, the cytoplasm in development, and general features of development (comparative gametogenesis, fertilization, cleavage and gastrulation, supplemented by a section on phylogeny). In these four chapters, which occupy about a quarter of the book, much of the subject matter treated relates to invertebrates and even to unicellular organisms.

Throughout the book (also in the main part) a surprising amount of modern experimental and biochemical work has been smoothly integrated into the text. This material is presented clearly and succinctly without going too much into details. The author's style is simple but by no means dull, and should appeal to young students. Of particular importance is the emphasis on the embryo as a whole arising through epigenetic processes.

The numerous drawings, all made by the author in a uniform style, are highly successful and strike the correct balance between realism and simplification. All chapters end with an excellent list of selected readings. At the end of the book there is a very useful annotated bibliography of sources of embryological information, covering books, monographs, paperback texts, journals, symposia, and review publications. The book is well produced and is concluded by a combined author and subject index.
The reproduction of the articles with their illustrations is very good. The book has no indexes.
This is the second edition of a book that first appeared in 1962. The basic organization of the book has remained unaltered, but the size has increased by almost one quarter and 26 new illustrations were added.

In the general part particularly the section on oogenesis and that dealing with experimental embryology have been enlarged. In the special part many minor additions have been made, partly dealing with new morphological and experimental work, partly with recent biochemical findings. Entirely new sections have been included on the Pauropoda and the Symphyla (Arthropoda). Throughout the book more reference is made to basic biochemical and molecular-biological aspects. The selected bibliographies have for the greater part remained unaltered.

The production of the second edition is equal in quality to that of the first. The subject index is more than twice as long, among other things due to the inclusion of generic names.

**EMBIOLOGIA E MORFOGENESI**
Corso per studenti di scienze biologiche e scienze naturali
1970

by L. Raunich
445 pp., 328 figs.

This is an elementary textbook of animal embryology for first-year biology students, and is the first of its kind to appear in Italian. It will no doubt be welcomed by many University teachers in Italy. The author has aimed at presenting a fairly complete survey of both general and comparative embryology, illustrating the general principles without undue emphasis on details. To instill more enthusiasm in the students he also devotes attention to the basic facts of experimental embryology, ultrastructure, and molecular biology. He has thus succeeded in writing a book that is modern in outlook, while at the same time providing a sound morphological basis. The only area that is not touched upon is developmental genetics. No literature is cited in the text.

The first chapter deals with gametogenesis, egg structure, and fertilization, the second with ooplasmic segregation, cleavage, and gastrulation in diblastic, holoblastic and meroblastic forms respectively. Then follows a chapter entitled “Morphogenesis”, which treats the formation and differentiation of the three germ layers, first generally and then comparatively. This chapter is concluded by a section on causal factors in morphogenesis.

Chapter four is devoted to the embryonic adnexa, while chapter five describes the general embryology of the organ systems. Chapter six then surveys the development of the principal types of metazoan animals, from the sponges to the chordates. A brief chapter on larval forms concludes the book.

The book is profusely illustrated with line drawings specially prepared for this purpose. They are simple but of very good quality, and clearly labeled; however, several of them could have been reproduced on a somewhat larger scale for greater clarity. Chapter three has a very useful chart showing the comparative embryology of the mesoderm in metazoans in schematic drawings.

At the end of the book the following schemes are included: Classification
of egg types according to amount and distribution of deutoplasm; Egg and cleavage types in the various metazoans; Derivatives of the ectoderm, mesoderm and endoderm; Metazoan classification on the basis of mesoderm and coelom development; and General metazoan classification (with reference to genera cited in the text). Finally a brief list of suggested books is given. The book is concluded by a detailed subject index.

10  
CELLS INTO ORGANS  
The forces that shape the embryo  
1969  
by J. P. Trinkaus  
Prentice-Hall, Inc.  
Englewood Cliffs, N.J.  
237 pp., 64 figs.  

This book was intended as an essay — rather than an exhaustive survey — on some of the major problems of cell contact and cell movement, particularly as they relate to changes in shape of multicellular systems during development. In contrast to what the title suggests, it deals much more extensively with early morphogenesis (gastrulation and neurulation) than with organogenesis in the strict sense. The treatment is modern, objective, and critical.  
The first six chapters deal with cellular aspects from a broad biological viewpoint. The emphasis is on animal cells, but some attention is devoted to the cellular slime molds. Among the subjects discussed are mechanisms of cell locomotion, directional movements and chemotaxis, the structural basis of cell adhesion, and physiological mechanisms of cell adhesion. Chapter seven deals succinctly but competently with cell segregation in vitro and the various theories proposed to explain it. The remaining seven chapters deal with multicellular aspects, exemplified largely by the early morphogenetic movements of echinoderms, amphibia ns, teleosts, and the chick. The epilogue devotes special attention to the role of microfilaments and microtubules, the implications of contact inhibition, the role of the cell membrane as an autonomous unit, and the genetic control of morphogenetic movements.  
Each chapter is concluded by a selective bibliography. The book is adequately illustrated with line drawings, photomicrographs, and electron micrographs. It is concluded by author and subject indexes.

11  
THE CHROMOSOME THEORY OF INHERITANCE  
Classic papers in development and heredity  
1968  
Editor: B. R. Voeller  
Appleton-Century-Crofts  
New York  
246 pp., 7 figs., 10 tbs.  
(paper-bound)  

Although the title of this "book of readings" might suggest that it is chiefly of interest to geneticists, heredity and development are, and always were inseparable. This book is therefore equally commendable to students of embryology.  
The editor has made a very interesting selection of classical papers, some reproduced in full and some in part only, the authors ranging from Kölreuter in the late 18th to Dobzhansky in the early 20th century. The German and French papers were carefully translated into English. A few original illustrations were included. The papers are linked by brief but expert comments by the editor.  
The papers are grouped into seven sections as follows: I. The role of the nucleus in fertilization (papers by Hertwig and Fol); II. The equivalence of contribution of the two parents (paper by Kölreuter); III. The role of the
nucleus as vehicle of inheritance (papers by Strasburger, Hertwig, and Weismann); IV. The continuity of chromosomes (papers by Flemming, Roux, Van Beneden, and Weismann); V. The individuality of the chromosomes (papers by Montgomery, McClung, Boveri, Sutton, Wilson, and Stevens); VI. Mendel (one paper and two letters by Mendel); VII. Mendelian genetics and the chromosome theory of inheritance (papers by Sutton, Carothers, Morgan, Sturtevant, Bridges, Blakeslee, and Dobzhansky).

The book has a thoughtful preface and is well produced.

12 LABORATORY STUDIES OF CHICK, PIG AND FROG EMBRYOS
2nd. edit., 1970
by R. L. Watterson and R. M. Sweeney
184 pp., 9 figs., 38 pls.

The second edition of this well-known laboratory guide (first printed in 1955) has been thoroughly revised. However, the basic plan has been retained. The two major improvements are the addition of a section on the early development of the frog, and the inclusion of a large number of photographic illustrations. The number of text figures was increased to nine.

Of the 38 plates 21 relate to the chick embryo, 14 to the 10-mm pig embryo, and 3 to the frog (blastula, gastrula, and 4-mm embryo). The pig and frog illustrations are all serial or single sections. The chick illustrations cover the 18, 24, 33, 48, and 72-hour embryo. Many of them represent whole mounts, some of them injected to show the blood vessels.

All illustrations are of high quality and are well reproduced. The book is printed in offset, which is a great improvement over the first edition.

13 PRINCIPLES OF DEVELOPMENT
A text in experimental embryology
1969 (facsimile reprinting)
by P. Weiss
672 pp., 124 figs.

An unrevised reprinting of this book, originally published in 1939, is amply justified by the fact that it has been epoch-making in a field which to-day enjoys a renewed world-wide interest: developmental biology.

The original book is reprinted in facsimile, but the author has added a new foreword, in which he gives his reasons for acceding to this reprinting, and an appendix which takes the form of a lengthy "Essay on hierarchically organized systems" (43 pages). In this essay he considers organisms (and more particularly the developing organism) from the viewpoint of system theory. It is a very thoughtful contribution, written with utmost clarity, and points out many of the pitfalls of contemporary biological thinking, not least those resulting from careless use of language. The essay will be read with profit by advanced biology students, and indeed by all biologists, developmental or otherwise, who want to deepen their insight into what their research is about: the organism as a dynamic system. It should be particularly useful to all those entering the field of theoretical biology.

The book is produced with great care.
This is a practical manual intended for use in conjunction with laboratory classes dealing with the structure of the early mammalian embryo. It has been planned so that it can serve as a substitute for the study of actual microscopic sections, if aided by adequate demonstrations. The text is concise.

The book is largely based on the 8 mm pig embryo. It consists of the following sections: 1. the chorionic sac and the placenta (4 drawings); 2. the external form of the 8 mm pig embryo (1 drawing); 3. selected sagittal sections (4 drawings); 4. correlation of external form with transverse sections (16 figs. partly "exploded" in toto photographs, partly photographs and corresponding drawings of sections); 5. selected transverse sections (31 drawings); 6. a brief section illustrating the principle of graphic reconstruction (2 drawings); some features of older embryos (18 mm pig) (8 drawings). The book ends with suggestions for a brief practical course, consisting of six sessions of two hours each, based on the material in this book.

The drawings are simple sketches, such as the student himself might make. The photographs are not very satisfactory. Most are too dark and show little detail. This is a drawback particularly if the student is expected to do without actual slides, as the author suggests. It is also awkward that the figures are referred to by number only on the text pages. Several figure numbers have dropped out altogether. There are some mistakes in the references to figures. The book is concluded by and index to structures.

BIOLOGIA DEL DESARROLLO
Fundamentos de Embriología
1969

by J. M. Génis Gálvez
406 pp., 394 figs.

The author of this textbook of embryology is Professor of Anatomy in the University of Granada. The book is primarily meant for medical students, but the word "biology" in the title is intentional. It has been the author's aim to integrate the facts of human development with the results of modern research in developmental biology.

At first sight the organization of the book appears conventional. However, the first thing that attracts attention is the inclusion of a chapter entitled "Molecular bases of development", which discusses such subjects as the genetic code, transcription and translation, regulation of gene activity, and differential protein synthesis during development. Moreover, throughout the book ample attention is devoted to experimental-embryological, biochemical, and ultrastructural findings, sometimes very recent ones. This makes the book very stimulating to read. It is regrettable, therefore, that no literature references whatsoever are provided for further reading. (It is also a pity that rather many misspellings occur in the names of the numerous foreign authors cited in the text.)

The emphasis throughout the book is of course on human development, but frequently other data are also adduced, particularly to illustrate experimental findings. A chapter following that on fertilization briefly describes the early development of Amphioxus, the frog, and the chick. Later another brief chapter is devoted to primary induction. A separate chapter on the development of the heart was contributed by Prof. Orts Llorca of Madrid.
The book has numerous excellent illustrations, many of which are original. The book is well produced and is concluded by a subject index.

16 GRUNDRISS DER ENTWICKLUNGSGESCHICHTE DES MENSCHEN
7th. revised edit. 1970
by O. Grosser
revised by R. Ortmann
215 pp., 200 figs.

Revised editions of this well-known book appear at regular intervals. The last three (’59, ’66, ’70) were revised by Professor Ortmann. He has always succeeded in incorporating new advances without unduly expanding the book.

In the present revision first of all some recent advances in induction research and molecular genetics were incorporated. Secondly, some attention is devoted to the histochemistry of organogenesis. Finally, new chapters were devoted to twinning, to cardiac malformations, and to the developmental state at the time of (precocious) birth.

Production and illustrations are excellent as always.

17 PLANARIAN REGENERATION
1969
by H. V. Brondsted
Intern. Ser. of Monogr.
in Pure and Appl. Biol.,
Zool. Div., Vol. 42
284 pp., 166 figs.

Few animals exhibit such amazing morphological plasticity as the flatworms. Therefore they have always been of great value for the study of morphogenesis. H. V. Brondsted, who has been working with them for more than 30 years, is eminently qualified to provide the synthesis that has been badly needed for a long time, and he has taken the job very seriously. The book presents a virtually complete review of experimental work extending over almost 200 years, placed against a general embryological background.

The style of writing is somewhat old-fashioned in places, but on the whole the author expresses his ideas remarkably well in a language that is after all not his own. Brondsted’s major personal contribution to the field has been the notion of the “time-graded regeneration field”, which is extensively discussed.

The complexity of the field is reflected in the large number of chapters (23). These will not all be enumerated. Early in the book there is an interesting historical introduction, a very useful chapter on systematics, morphology and cytology of planarians, and a chapter devoted to Morgan and Child, the early pioneers. Towards the end there are chapters devoted to Child’s gradient hypothesis (which is discounted although its great heuristic value is acknowledged), and further to biochemical and biophysical work, to the famous experiments on regeneration and learning in planarians, and to genetic aspects of regeneration.

The book is well illustrated. The bibliography covers some 700 titles and is up-to-date until 1966. Some more recent papers are discussed in an addendum and an appendix. Unfortunately the important work of Coward (1968) with actinomycin D is not included.

The book is concluded by indexes to authors and to subjects and species. There are a number of errors in authors’ names, years, figure and page numbers throughout the book. One author (Holzinger = Holtzer?) is absent both from the bibliography and from the authors’ index.
GENE ACTIVITY IN EARLY DEVELOPMENT
1968

by E. H. Davidson
375 pp., 102 figs., 15 tbs.

Academic Press
New York - London
SBN 12 205150 5
Price: $ 12.50; 116 s.


This is a very important book. The rate of accumulation of new data in this field is so high that many, particularly teachers, will welcome this competent and extremely readable survey. An important feature of the book is that it provides a link between the biochemical research of the last ten years or so, and the large body of brilliant classical research on ooplasmic localization that was performed in the years around the turn of the century, with which most of the present-day workers are insufficiently familiar. In this respect the book may almost be regarded as a sequel to E. B. Wilson's famous treatise "The cell in development and heredity".

The author has intentionally restricted himself largely to early stages of embryogenesis (up to and including gastrulation) because of the wealth of information available on these stages in particular, and because in later stages the problem is increasingly complicated by tissue interactions.

To characterize the book, we can do no better than quote part of the preface:

Section I is concerned with gene activity in early embryogenesis, with the time of onset and the nature of embryo genome control, and with recent attempts to analyze the shifting patterns of gene expression as development proceeds. In Section II various classic and recent studies relevant to the phenomenon of cytoplasmic localization of morphogenetic potential are reviewed, and the significance, from a contemporary vantage point, of this often neglected area of developmental biology is discussed. Section III deals with genomic function in oogenesis, beginning with a general survey of what could be described loosely as the natural history of the oocyte nucleus, and proceeding to current attempts to understand the character and the ultimate function of the oocyte gene products. In Section IV various aspects of the general problem of gene regulation in animal cells are discussed.

For the historically-minded embryologist we may add that Section II contains an excellent discussion of the origins of nineteenth-century neopreformationism. This is followed by a thoughtful discussion of the much debated antithesis of regulative versus mosaic development.

The book is profusely illustrated and most figures have extensive explanatory captions. The only feature of the book that is apt to provoke criticism is the irrational literature reference system, which, among other things, makes the author index very difficult to use. Also, the subject index could have been more detailed.

ETUDE BIOCHIMIQUE DE LA METAMORPHOSE CAUDALE DES AMPHIBIENS ANOURES
1969

by Y. Eeckhout
Acad. Roy. Belg. Cl. des Sci.,
Mémoires 38, fasc. 4
113 pp., 29 figs., 26 tbs.
(paper-bound)

Although this research monograph is not commercially available, it is of sufficient interest to be briefly reviewed. After an extensive literature survey, it reports on original biochemical investigations both on the intact metamorphosing tadpole tail and on the isolated tail treated with thyroxine. The
emphasis is on the localization and activity of lysosomal acid hydrolases and on the role of thyroxin. Experiments were also performed with inhibitors of protein synthesis.

The investigation was performed at the Laboratory of Physiological Chemistry, University of Louvain.

20 DIE VERWANDLUNG DER INSEKTEN
1969
by M. Fischer
Handbuch der Zoologie,
IV. Band, 2. Hälfte, Teil 1, Beitr. 16
68 pp., 63 figs.
(paper-bound)

This is a useful survey of insect metamorphosis written mainly from the viewpoint of morphology and general biology. Completeness is of course impossible in just over 50 pages of text. The most useful parts are those covering the morphology of larval development and metamorphosis (both external and internal), and those on polymorphism with reference to season, sex, social differentiation, and generation cycle. They provide a good picture of the enormous variety of postembryonic developmental patterns in insects.

An attempt was made also to cover the causal aspects of larval development and metamorphosis, particularly endocrine regulation. This part is less satisfactory because it is far from complete. Particularly the sections on determination and regeneration are very sketchy. No mention is made of the extensive experimental data on imaginal disks and on morphogenetic gradients in the insect cuticle.

An important feature of the issue is the bibliography of over 400 titles, which is up-to-date until 1967. There is also an index of taxonomic names. The illustrations consist of good line drawings.

21 DEVELOPMENT OF STURGEONS
Oocyte Maturation, Fertilization and Embryogenesis
1969
by A. S. Ginsburg and T. A. Dettlaff
134 pp., 67 figs.

This monograph is written in Russian and is announced only briefly. The contents are sufficiently characterized by the title.

The book is illustrated mainly with good line drawings, the majority of which constitute a 36-stage Normal Table of Acipenser gilデンstadti. The bibliography consists mainly of Russian titles (more than 100).

22 MAMMALIAN FERTILIZATION
An atlas of ultrastructure
1969
by R. Hadek
307 pp., 152 figs.

Contents: I. The mammalian spermatozoon; II. The vaginal plug; III. From oocyte to zygote; IV. The functional aspects of granulosa cell ultrastructure; V. Experiments; VI. Discussion

It is difficult for a non-specialist to review a highly specialized work like this. However, a specialist has assured us that it is incomplete in its presentation of the dynamic process of fertilization. This may be due to the fact that
some essential stages were not present in the photographic material at the
author's disposal. If so, he would have done well to solicit the co-operation
of others. In any case the title of the work is misleading, and oddly enough
the author more or less concedes this in his preface by saying that it only
deals with certain aspects of the topic.

The atlas depicts the ultrastructure of the gametes of five laboratory animals
before, during, and after fertilization: rabbit, golden hamster, ferret, mouse,
and gerbil (of the latter two species only a few illustrations are included).
The accompanying text is kept brief. Chapter V deals with ferritin injection
experiments aimed at assessing the possibility of exchange of material between
the oocyte and the perivitelline space.

Most of the plates are full-page size, and most are accompanied by line
drawings showing the approximate orientation of the sections depicted. These
are not always entirely satisfactory, and sometimes puzzling. Part of the plates
are of less than superior quality. Judging from the fixation procedures used
these may date from a time when methods were not yet optimal.

The book is exceedingly well produced at a reasonable price. The bibliog-
raphy covers more than five pages. Unfortunately the book has no indexes.

23 ORGANIZATION AND DEVELOPMENT
OF THE EMBRYO

by R. G. Harrison †
Edited by S. Wilens
314 pp., 151 figs., 7 pls., 3 tbs.

Contents: Foreword; Preface; Synopsis of the Silliman Lectures; Ch. 1 Cellular differen-
tiation and internal environment; Ch. 2 Harrison stages and description of the normal de-
velopment of the spotted salamander, Amblystoma punctatum; Ch. 3 On the status and significance
of tissue culture; Ch. 4 On the origin and development of the nervous system studied by
the methods of experimental embryology; Ch. 5 Relations of symmetry in the developing
embryo; Ch. 6 Heteroplastic grafting in embryology; Ch. 7 Recapitulation and conclusion;
Supplementary references cited in notes from the Silliman Lectures; Ross G. Harrison’s
Publications 1893—1948; Memorial tributes: Index

In 1949 Prof. R. G. Harrison delivered the Silliman Lectures at Yale
University, but he was prevented from preparing them for publication by
illness. This book does not contain the actual text of the lectures, but reprints
of five of his papers dating from 1927 to 1945, which he used as the major
source for the lectures. Dr. Wilens, his life-long associate, has re-edited these
by inserting illustrations and excerpts from his Silliman Lecture notes that
bridge the interval between the publication date of the papers and the delivery
of the lectures. She has moreover added a chapter consisting of the original
figures of his famous series of normal stages of Amblystoma punctatum with
the descriptions belonging to them, which had never been available in published
form. As a final chapter she has added Harrison’s own “Recapitulation and
conclusion” from his Silliman Lecture notes.

Dr. Wilens has also written a ten-page preface characterizing Harrison as
a scientist and teacher, and has compiled a complete bibliography of his
publications.

The book has been produced with the utmost care and constitutes a worthy
tribute to the great man that Harrison was.
This monograph is devoted to the hatching gland of anuran embryos. *Alytes obstetricans* is the main object, but 12 other German species and 27 foreign species were also investigated. The techniques used were those of histology, cytology, and histochemistry. Much use was made of epidermal whole mounts.

Some additional attention is devoted to other epidermal structures, such as the intercalar gland cells and a simple sense organ (?) of unknown function associated with the nares.

The work is well illustrated and has a lengthy bibliography and a subject index. It can be ordered separately from the publishers.

**25**

ENTWICKLUNG, WACHSTUM, MISSBILDUNGEN
UND ALTERN BEI MENSCH UND TIER

1969

Editor: K. A. Rosenbauer

Wissenschaftliche Verlagsgesellschaft Stuttgart

Price: DM 72.—

Contents: Zelle, Zellteilung, Keimzellen, Primitiventwicklung und Placentation: eine allgemein-biologische Einleitung (K. A. Rosenbauer); Exogene Missbildungen (K. A. Rosenbauer); Erbliche (endogene) Missbildungen (H. Schade); Das Wachstumshormon (W. Staib und H. Reinauer); Wachstum und Altern der Organismen (R. Bertolini); Der physiologische Tod (W. Ries); Merkmale individuellen Wachstums bei Fossilien (U. Jux); Aufgaben und Ziele der Gerontologie (W. Ries)

It is difficult to say for which category of readers this book is meant. It is certainly not for the specialist in any of the topics covered. On the other hand, the content is sufficiently sophisticated to make the book valuable to all those (general biologists, doctors, students) who want a means of rapid orientation in an increasingly important area of investigation, on a high scientific level. A point of particular merit is the broad biological framework of the various discussions, and the inclusion of extensive and modern bibliographies in all chapters.

Of particular interest is the inclusion of a chapter on individual growth patterns in fossils. In all other chapters the human species is placed in the centre, but the broad context is biological rather than medical. All chapters are authoritative and well written.

The book is well produced and profusely illustrated. It is concluded by a subject index.

**26**

ENTWICKLUNGSPOTENZEN DES FRÜHEN
SÄUGETIERKEIMES

1969

by F. Seidel

Arbeitsgemeinschaft für Forschung des Landes Nordrhein-Westfalen, Heft 193

91 pp., 26 figs.

This important review was published in a medium that is not easily accessible in countries other than Western Germany. Although it is not commer-
cially obtainable, it is deemed important enough to be reviewed here. An additional reason is that it devotes considerable attention to the work of five of Professor Seidel's former associates (Beier, Denker, Kirchner, Krauskopf, Schwick) whose work was either not published so far, or published for the greater part in German journals.

After an introduction and a brief survey of the normal development of the rabbit, the author takes up the following subjects in succession: the potencies of the blastomeres and the developmental-physiological structure of the egg; histochemical data relevant to embryonic regulation; electron-microscopical studies on oocyte and blastomeres; proteins in the uterine secretion and in the blastocyst; chemical feedback relationships between the egg and the genital system (both directly and via the endocrine system).

The review has summaries in German, English and French and is well illustrated. The bibliography numbers close to one hundred titles.

27 EXPERIMENTELLE BEITRAGE ZU EINER THEORIE DER ENTWICKLUNG
1968 (facsimile reprinting)
by H. Spemann
296 pp., 217 figs.

Springer-Verlag
Berlin - Heidelberg - New York
Price: DM 58.—; $ 16.—

This is a facsimile offset reprinting of the classical work first published in 1936. It is printed on heavy quality paper and attractively bound. The original figures are of course included; most line drawings have come out well, but the photographs and half-tone illustrations are less sharp than the original ones. However, this was probably unavoidable if the original blocks were not available. The publishers deserve our gratitude for re-issuing this important and still miraculously topical book.

28 GENETIC MOSAICS AND OTHER ESSAYS
1968
by C. Stern
196 pp., 59 figs., 2 tbs.

Harvard University Press
Cambridge, Mass.
Price: 62 s.

This book is based on three lectures given in 1965 at Harvard University in the framework of the John M. Prather lectures. The book is named after the second lecture, by far the longest of the three, and considerably enlarged in its printed version. It is called "Genetic mosaics in animals and man", numbers over 100 pages, and has a 13-page bibliography brought up-to-date until 1966. It devotes considerable attention to such subjects as gynanders, somatic crossing-over, mutational and chromosomal mosaicism, blood mosaicism, intersexes, position effects, functional mosaicism, and dosage compensation (the Lyon hypothesis).

The other two lectures are a short essay placing the history of human genetics in the perspective of Mendel's influence, and a very interesting and well-written essay devoted largely to the work of Stern himself and his associates on the developmental genetics of patterns in Drosophila. The latter essay has been updated until 1967.

A brief concluding section entitled "Thoughts on research" shows the author in a more philosophical vein.

The book is beautifully printed and illustrated, and is concluded by author and subject indexes.
THE SEGMENTATION OF THE PRIMITIVE NEURAL TUBE IN CHICK EMBRYOS
A morphological, histochemical and autoradiographical investigation
1969
by S. Vaage
Ergebn. Anat. Entw.gesch., Band 41, Heft 3
87 pp., 92 figs.
(paper-bound)

Springer-Verlag
Berlin - Heidelberg - New York
Price: DM 32.50

This thorough monograph is largely based on the author's own research. Since early neurogenesis in birds and man is essentially identical, the work is also of interest to neurologists.

After a lengthy introduction the author describes his findings obtained by a variety of methods such as observations on the living embryo, dissection of embryos, wax plate reconstructions, serial sectioning of the neural tube, PAS staining and \(^{3}H\)-thymidine labelling.

The work is beautifully illustrated and contains a lengthy bibliography and a subject index. It can be ordered separately from the publishers.

IMMUNOLOGY AND DEVELOPMENT
1969
Editor: M. Adinolfi
187 pp., 33 figs., 21 tbs.

Spastics Intern. Med. Publications,
London, in association with
W. Heinemann Medical Books Ltd.,
London
Price: 63 s.: $ 9.50

Contents: I. The nature of immunological response (D. W. Talmage); II. Ontogenesis of immunoglobulins and components of complement in man (M. Adinolfi); III. Phylogeny of immunoglobulin structure and function (L. W. Clem); IV. Immunological processes in mammalian reproduction (W. D. Billington); V. Primary immune paresis (J. R. Hobbs); VI. The immunological relationship between mother and fetus (R. B. McConnell)

This collaborative work written by five British and three American authors directs itself mainly to developmental immunologists and paediatricians. Its contents are sufficiently characterized by the chapter headings listed above. The chapters range in length from 25 to 45 pages. They are essentially reviews of the current state of the particular aspect concerned, but several of them also contain unpublished observations as well as a certain amount of speculation. All chapters have substantial and up-to-date bibliographies.

The book is well printed and adequately illustrated, although the reproduction of the figures is not ideal. Unfortunately there are no indexes.

PRENATAL RESPIRATION
1970
by H. Bartels
Series "Frontiers of Biology" Vol. 17
199 pp., 79 figs., 16 tbs.

North-Holland Publ. Comp.
Amsterdam - London
SBN 7204 7117 6
Price: $ 10.—; 84 s.


The author of this monograph has been active in the field for almost 20 years. His intention has been to write a personal review, with due emphasis on unsolved problems and on the strategy used in research in this field. The
approach is comparative with emphasis on the mammals. The word “respiration” is not used in its wider sense, but as a synonym of gas transport.

The nature of the book is for the most part sufficiently characterized by the table of contents. Chapter 1 discusses gas exchange from the oocyte onwards, the influence of fertilization and cleavage, regional differences in the gastrula and the metabolism of the organizer region (in amphibians), critical oxygen pressure, the notion of maximal tissue thickness, and some related subjects. Chapter 2 was included because of the large number of excellent studies available on the chick embryo, although comparison with mammalian data is often difficult.

The book is well produced and illustrated, and is concluded by a 15-page bibliography and an extensive subject index.

32 ESSAYS ON FOETAL AND NEONATAL PHYSIOLOGY

Editor: V. I. Bodyazhina
312 pp., 78 figs., 29 tbs.
Izd. Meditsina
Moscow


This book is written in Russian and is announced only briefly. It is a collaborative treatise organized in six main parts as follows: I. General questions of early development (3 chapters); II. Development of movement and feeding (2); III. Development of the respiratory system and of cardiac activity in the human foetus (2); IV. Development of electrical activity of the brain of foetus and newborn (1); V. Development of the blood system in the human foetus (3); VI. Some data on the development of the ovary and adrenal gland in the foetus (2).

The bibliography covers 22 pages. Twelve of these are devoted to Russian titles.

33 REGENERATION, HYPERPLASIE, CANCERISIERUNG

Editor: F. Büchner
Handbuch der allgem. Pathologie
VI/2
897 pp., 314 figs., 17 tbs.
Springer-Verlag
Berlin - Heidelberg - New York
Price: DM 358.—; $98.50

Contributors: Calvo (Ulm), Cottier (Bern), Fließner (Ulm), Grétillet (Bern), Grundmann (Wuppertal), Hess (Bern), Oehlert (Freiburg i.Br.), Roos (Bern), Schindler (Bern), Seidel (Wuppertal)

This book is part 2 of volume 6 (“Development, growth, cancer”) of a voluminous Handbook of General Pathology. Part 1 of this volume appeared as far back as 1955 and was mainly morphological in character. The present book consists in fact of five separate but related extensive monographs, which all draw heavily on recent to very recent work carried out with the help of modern biochemical and ultrastructural methods. They were written with medical readers in mind, but are also of immediate interest to biologists working on cell renewal systems. They bring together and digest an enormous amount of literature in the systematic way characteristic of the best German and Swiss tradition.

The five chapters deal with the following subjects: I. “Biochemistry of regeneration” (general principles and examples from regeneration in epithelia, cell cultures, and liver) (128 pp.); II. “Reparative regeneration of liver parenchyma” (115 pp.); III. “Regeneration, hyperplasia, and neoplasia in renewing epithelia” (131 pp.); IV. “Normal and pathological bone marrow regeneration”
The book is beautifully produced and illustrated, and is concluded by extensive author and subject indexes. The number of entries in the former can be estimated at more than 7,500, each of which refers to a specific literature reference.

34

DIE ENTWICKLUNG DER MENSCHLICHEN GROSSHIRNHEMISPHERE
1969

by W. Kahle

Schriftenreihe Neurologie, Band 1
116 pp., 55 figs.
(paper-bound)

Springer-Verlag
Berlin - Heidelberg - New York
Price: DM 58.—; $ 14.50

This thorough monograph deals with the development of the human telencephalic hemisphere from the second to the eighth month inclusive. The material consisted of whole brains and serial sections, the techniques used were plastic plate reconstruction, graphical reconstruction, and ventricular casting. Apart from the differentiation of the outer surface, much attention was also devoted to the development of the inner (ventricular) wall. The stress lies on topographical changes and mass dynamics (heterochronous growth) rather than on histogenesis.

The work is beautifully illustrated and is concluded by a bibliography and a subject index.

35

FOETUS AND PLACENTA
1969

Editors: A. Klopper and E. Diczfalusy

639 pp., 123 figs., 29 tbs.

Blackwell Scient. Publications
Oxford - Edinburgh
SBN 632 05140 X
Price: £ 6.10.0

Contents: 1. The growth of the conceptus and its blood supply (H. G. Dixon and W. B. Robertson); 2. Utero-placental pathology (W. B. Robertson and H. G. Dixon); 3. The functional morphology of the placenta (K. Thomsen and H. Hiersche); 4. Three topics in placental transmission (M. Young); 5. Oestrogen metabolism in pregnancy (E. Diczfalusy and S. Mancuso); 6. Neutral steroids in human pregnancy: isolation, formation and metabolism (S. Solomon and E. V. Younglai); 7. Protein hormones and hormonal peptides from the placenta (S. Brody); 8. The enzymology of the placenta (D. D. Hagerman); 9. The assessment of placental function in clinical practice (A. Klopper); 10. Endocrinology of the foetus (M. C. MacNaughton)

As the editors say in their preface, this book reviews a more or less arbitrary selection of particularly topical subjects and has a strong endocrinological bias. The original aim of a more or less complete coverage had to be abandoned. The book deals mainly with the human species. The contributors are obstetricians, pathologists, and endocrinologists and biochemists working in medical research institutes. Five are working in the United Kingdom, three in the U.S.A. and Canada, and the remainder in various Western-European countries. The book will be mainly of interest to clinicians.

All chapters have extensive bibliographies. The book is well produced and well illustrated. It has author and subject indexes.
Contents: A. Changes in the morphological structure of the small intestine of mammals during development; B. The development of motor activity of the digestive tract; C. Development of absorption of water, ions and vitamins; D. Digestion and absorption of carbohydrates; E. The digestion and absorption of lipids; F. Development of absorption of proteins and amino acids; G. Developmental changes in some other enzymatic activities; H. Functional development of the small intestine of human fetuses.

Owing to its very specialized nature this thorough monograph is announced only briefly. The author works in the Laboratory of Developmental Nutrition, Institute of Physiology of the Czechoslovak Academy of Sciences, Prague. For the benefit of the reader the main chapter headings are listed above.

The book is well produced. It is illustrated mainly with graphs. The bibliography covers 15 pages. There is no author or subject index, but the table of contents is very detailed.

37

CONGENITAL DEFECTS

by L. Saxén and J. Rapola

1969

Developm. Biol. Series

255 pp., 108 figs., 22 tbs.

Holt, Rinehart and Winston, Inc.

New York

SBN 03 079255 X

Price: $ 10.50 (cloth); $ 5.95 (paper)


As far as the reviewer is aware this book is the first of its kind. So far anyone interested in teratogenesis had to go either to the large handbooks or to specialist monographs. The present book concisely discusses all the major aspects of the subject from the viewpoint of the developmental biologist rather than of the clinician or pathologist. It is therefore of interest to the embryologist who wants a general orientation in an important related field, as well as to those planning to go into teratogenesis for its own sake and seeking basic information. The authors are active investigators both in experimental embryology and in teratogenesis.

The book presupposes rather much knowledge of basic biology, and therefore cannot be recommended to undergraduate students. Medical terminology is avoided as much as possible. Equal attention goes to morphological, cellular, physiological, and biochemical congenital defects.

Major features of the book are the use of a great variety of examples from many systems, and the inclusion of much of the important recent literature. All chapters are concluded by selected bibliographies divided up into reviews and special articles.

The book is illustrated with a great many good drawings, graphs, and diagrams, all especially prepared for this work, and several good photographs. Much tabular material, sometimes especially compiled for this book, is also included. The captions and lettering of the figures are not always absolutely clear; some extra attention should be devoted to this in future editions. The book is concluded by a combined author and subject index.
This monograph is of interest to members of the medical profession only. It is based on many years of personal experience and on a thorough search of the literature. In fact the author states that he reviews almost all of the available literature on the subject. The bibliography contains close to 500 titles. The book is well produced and profusely illustrated, and is concluded by a combined author and subject index.

**BIOLOGY OF ACETABULARIA**

1970

Editors: J. Brachet and S. Bonotto

300 pp., 113 figs., 10 tbs., 7 pls.

Academic Press
New York - London
Price: $ 10.00

Contributors: M. Boloukhère (Brussels), S. Bonotto (Mol), J. Brachet (Brussels), H. Clauss (Berlin), J. C. W. Crawley (London), W. L. Dillard (Wilhelmshaven), A. Goffeau (Brussels), B. R. Green (Vancouver, B.C.), V. Heilporn (Brussels), M. Janowski (Brussels), S. Puiseux-Dao (Paris), H. G. Schweiger (Wilhelmshaven), D. C. Shephard (Cleveland, Ohio), Th. Vanden Driessche (Brussels), G. Werz (Wilhelmshaven), K. Zetsche (Tübingen)

This book contains the 15 papers read at the First International Symposium on Acetabularia held in Brussels and Mol (Belgium) in June 1969. The Symposium was attended by 86 scientists, for the far greater part from Belgium and Western Germany.

Since its introduction as an experimental organism for the study of nucleocytoplasmic interactions in differentiation about 40 years ago, research on Acetabularia has become more and more sophisticated. One of the major focusses still is that of stable mRNA species and their role in morphogenesis. However, the picture has become complicated by the discovery that the chloroplasts are also engaged in DNA, RNA, and protein synthesis. All this is reflected in the contents of this book. Other aspects considered are nuclear DNA and RNA synthesis, regulation of RNA synthesis and enzyme activity, ultrastructure, photosynthesis, effects of light and gamma radiation, and circadian rhythms. The book is closed by 17 pages of "concluding remarks" by Jean Brachet, which provide a thoughtful summary and perspective of the Symposium.

The book is produced in offset print. The discussions held at the Symposium are not recorded. The book is profusely illustrated; the many photographs and electron micrographs are very well reproduced. There is a subject index but no author index; although its compilation would no doubt have retarded publication, we feel that its absence considerably reduces the usefulness of the book as a work of reference.
This Supplement to Annales d’Embryologie et de Morphogenèse contains the main reports and other contributions presented at the 6th International Embryological Congress held in Paris in September 1968. The central theme of the Congress was “Nucleo-cytoplasmic interactions during differentiation”.

Most of the reports are essentially surveys of work already published elsewhere. They are therefore well suited for reference purposes and for rapid orientation in specific areas. The reports are grouped in five sections as follows: 1. Nucleic acids in embryonic differentiation (7 papers); 2. Nuclear transplantation and differentiation (4); 3. Activities of polytene and lampbrush chromosomes (3); 4. Nucleo-cytoplasmic relations in the Protista (2); and 5. Chromosomal aberrations and differentiation in Vertebrates (3). Most reports are followed by brief discussions.

The reports are followed by summaries of three round-table discussions, respectively on the control of micro-molecular synthesis during embryogenesis, on nuclear control of regeneration, and on cytochemical aspects of cartilage formation. The latter two take the form of a series of abstracts and brief reports. The book is concluded by the abstracts of the 56 free communications presented at the meetings, which cover a very broad range of subjects.

41 COMMUNICATION IN DEVELOPMENT

Editor: A. Lang
Developm. Biology, Suppl. 3
269 pp., 78 figs., 17 tbs.

Academic Press
New York - London
Price: $12.—
paper-bound: $10.—


This book contains the 11 papers read at the 28th Symposium of the Society for Developmental Biology held in Boulder, Colorado in June 1969. The papers review and describe work carried out on a variety of organisms: bacteria, algal eggs, higher plants, insects, amphibian eggs, and mammals.

The papers are arranged in five sections, the first of which contains two theoretical papers, one on the concept of molecular messengers, and one on the evolution of developmental communication systems. Section two deals with intracellular communication (in bacteria, in amphibian eggs, and in Fucus eggs). Intercellular communication is discussed in section three (antibody synthesis). The next section deals with communication between the cell and the organism (insect endocrinology, estrogen-receptor interaction in the uterus, auxin and cell enlargement). Finally section five discusses environmental
developmental instructions (growth regulation by nutrients in cultured plant cells, role of light in plant and animal development).

In his postscript A. Lang states that the general trend of the Symposium pointed away from direct applications of the Jacob-Monod model to developmental problems. The very first reactions to the developmental effectors characteristic of higher organisms (particularly hormones) seem always to occur at the level of membranes or protein receptors, not at the level of the chromosomes. Experiments on Fucus eggs also implicate the cell surface in the primary response to various effectors.

The discussions held at the Symposium are not recorded, although Lang repeatedly refers to them in his postscript. The book is well produced and is concluded by author and subject indexes.

42 BIOLOGY OF AMPHIBIAN TUMORS 1969

Editor: M. Mizell
Recent Results in Cancer Research
Special Supplement
484 pp., 186 figs.


This book contains the papers read at a Symposium held at Tulane University, New Orleans, in October 1968. It is reviewed here because its scope is much broader than the title would suggest. It contains a considerable amount of material of general interest to developmental biologists working on amphibian material.

Almost all of the 43 papers report on recent original research. We will mention only those subjects that are of more specific interest to our readers: (1) population genetics of Rana pipiens (Moore), (2) mutations in Pleurodeles (Gallien), (3) nucleo-cortical interactions in the blastula (Grant), (4) mass culture of amphibian cells (Rafferty), (5) cell lines from haploid and diploid embryos (Freed et al.), (6) several papers on the immunology of amphibians (Cooper, Volpe et al., Cohen, Legler et al., Pollara et al.), (7) organ culture of amphibian tissues (Balls), (8) development of genetically defined strains of amphibians (Nace), and (9) diseases of frogs kept in the laboratory (Abrams).

The book is well produced and well illustrated. Publication has been very rapid, but a great drawback for the use of the book as a work of reference is the absence of indexes.
This book contains the ten papers read at the Morgan Centennial Symposium held at the University of Kentucky in 1966. The Symposium had no central theme, and the contributors were apparently selected only because they had some relation with Morgan or his work. This has resulted in a heterogeneous collection of papers under a stopgap title. Moreover, publication has been so slow that most papers are largely out of date. Some of them have been updated to some extent, however.

We will only mention those papers that may still be of interest to developmental biologists, viz. a paper by the late Albert Tyler on masked messenger RNA and embryonic determination, one by James Bonner on the control of gene activity, and, last but not least, a very interesting paper by William B. Wood on gene action in the control of bacteriophage morphogenesis. The latter paper has been updated to 1969.

The anonymous introduction contains a brief sketch of Morgan's personality and significance as a scientist.

The book is well produced but has no indexes.

This report of a Symposium held in Riga in July 1966 is written in Russian and is announced only briefly. It contains 30 papers arranged in three sections as follows: I. General cytology (15 papers); II. Cytology of the nervous system (5); III. Cellular pathology (10). The research reported was carried out on a great variety of systems with an equally great variety of morphological, experimental, and biochemical techniques.

All papers have English summaries. Among the illustrations there are numerous photomicrographs, which are unfortunately poorly reproduced.
NUCLEAR PHYSIOLOGY AND DIFFERENTIATION
1969

Editor: R. P. Wagner
Genetics, suppl. to Vol. 61 no. 1
481 pp., 199 figs., 48 tbs., 3 pls.
(paper-bound)

Genetics Society of America
Austin, Texas

This supplement of "Genetics" contains all the papers read at an inter-
national Symposium held in Belo Horizonte, Brazil, in December 1968. Most
of the papers deal with two main subjects: chromosome structure and repli-
cation, and molecular genetics, both in a variety of experimental material
ranging from bacteriophage to mammals. Of the 68 contributors 26 are Bra-
zilian scientists.

The 37 papers are arranged in seven sections as follows: 1. Chromosomal
activities during meiosis I (5 papers); 2. Chromosomal activities during meiosis
II (7); 3. Nuclear activities during development (6); 4. DNA metabolism
during development (7); 5. Genetic redundancy (4); 6. Gene expression
during differentiation (6); 7. Nucleic acids in bacteriophage development (2).
In his closing remarks H. Swift confines himself to three main areas: chromo-
some structure, gene transcription, and gene amplification.

All papers have English and Portuguese summaries. The volume is amply
illustrated and has an alphabetical index.

DIFFERENTIATION AND IMMUNOLOGY
1968

Editor: K. B. Warren
291 pp., 79 figs., 15 tbs., 8 pls.

Contributors: Beale (Edinburgh), Cebra (Baltimore, Md.), Cohn (San Diego, Calif.), Cohn
(New York, N.Y.), Coombs (Cambridge), Dingle (Cambridge), Feldman (Rehovoth), Fell
(Cambridge), Gilmour (Glasgow), Goldberg (New York, N.Y.), Green (New York, N.Y.),
Halpern (Paris), Iso-Heikkila (Helsinki), Lachmann (Cambridge), Lepinay (Paris), Lia-
poulos-Briot (Paris), Kourilsky (Paris), Mitchison (London), Palmer (Oak Ridge, Tenn.),
Papaconstantinou (Oak Ridge, Tenn.), Paul (Glasgow), Phillips (Toronto), Rabes (New
ork, N.Y.), Robineaux (Paris), Saukkonen (Helsinki), Silverstein (Baltimore, Md.), Teir
(Helsinki), Waksman (New Haven, Conn.), Weiss (New York, N.Y.)

This Symposium was probably held some time during 1967, but the book
does not state when and where. In most of the bibliographies the most recent
literature cited is from 1967.

The object of the Symposium was to promote collaboration between students
of differentiation and of immunology, and the book should arouse the interest
of all those who use to think about cytodifferentiation and cell heredity. Why
this is so is made clear by Paul Weiss in his lucid introduction entitled "Mo-
lecular specificity — link between immunology and differentiation".

The book contains 16 papers, all by prominent authorities in their respective
fields. Several of these of course deal with the immune system and lymphoid
cells, but others describe work on protozoa, embryonic cartilage, collagen-
synthesizing cells, the embryonic lens, the rat orbital gland, isolated thymus
chromatin, and organ-specific tissue extracts.

The book is well illustrated and well produced, and has an author index.
The Royal Society of Medicine
London
Price: 15 s.; $ 2.50


This is the report of a one-day Symposium held in London in May 1968. The 10 papers included are concise reviews of selected aspects of foetal life, and are followed by discussions. A few of the papers are of exclusively medical interest. We will mention those that are of more fundamental scope.

First of all, there is an interesting and well-illustrated account of the evolution of viviparity by E. C. Amoroso. Furthermore there are two papers on the immunology of pregnancy, two on foetal homeostasis, one on metabolic fuels in the foetus, and two on breakdown of maternal protection (by infections and drugs respectively).

The Symposium number is well produced and adequately illustrated. It has no indexes.

THE MAMMALIAN OVIDUCT
Comparative Biology and Methodology
1969

Editors: E. S. E. Hafez and R. J. Blandau
559 pp., 205 figs., 55 tbs.

Contributors: Behrman (Ann Arbor, Mich.), Benirschke (Hanover, N.H.), Bishop (Toledo, Ohio), Black (Amherst, Mass.), Blandau (Seattle, Wash.), Bodemer (Seattle, Wash.), Boling (McMinnville, Ore.), Brenner (Beaverton, Ore.), Brinster (Philadelphia, Pa.), Brundin (Stockholm), Chang (Shrewsbury, Mass.), Dziuk (Urbana, Ill.), Fox (Charlottesville, Va.), Fredericsson (Stockholm), Glass (San Francisco, Calif.), Greenwald (Kansas City, Kansas), Hafez (Pullman, Wash.), Hamner (Charlottesville, Va.), Herrmann (Seattle, Wash.), McLaren (Edinburgh), Mastroianni (Philadelphia, Pa.), Nalbandov (Urbana, Ill.), Nilsson (Uppsala), Ortiz (Rio Piedras), Pickworth (Shrewsbury, Mass.), Price (Chicago, Ill.), Reinius (Uppsala), Rumery (Seattle, Wash.), Smith (Seattle, Wash.), Spadoni (Seattle, Wash.), Sugawara (Sendai), Zaayer (Leiden)

This book presents the results of an international Symposium held in Pullman, Wash. in July and August 1967. The book opens with an historical introduction by C. W. Bodemer and closes with an epilogue by L. Mastroianni.

The 22 papers presented are partly research papers and partly reviews. They are grouped in five parts as follows: I. Development and structure (4 papers); II. Physiology, Endocrinology, and Pharmacology (7); III. Biochemistry (4); IV. Experimental Manipulation of Oviductal Eggs and Oviduct (6); V. Clinical Aspects (1). Of particular significance to embryologists are the papers in part IV on egg transfer in laboratory animals (Chang and Pickworth), on egg transfer in cattle, sheep, and pigs (Dziuk), on mammalian embryo culture (Brinster), and on mechanisms affecting embryo development (McLaren). In part III there is a paper by Hafez and Sugawara on the biochemistry of oviductal eggs.

The book is beautifully produced and illustrated. It is concluded by extensive author and subject indexes. The use of glossy paper throughout has led to an unnecessarily high price.
This book embodies the papers read at an international Symposium held in Milan in September 1968. As the President, Prof. C. A. Villee, points out in his foreword, a particularly striking instance of the interdependence of the foetus and the placenta is the synthesis of oestrogens. This provided the impetus for the present symposium. It was attended by about 300 investigators from all over the world.

The 39 research papers are arranged in five groups as follows: I. "Structural and ultrastructural studies" (5 papers); II. "Immunology" (3); III. "Endocrinology" (13); IV. "Physio-pharmacological aspects" (9); V. "Clinical investigations" (9). The discussions held at the Symposium are not recorded.

The book is beautifully produced on heavy-quality glossy paper, but this has led to an unduly high price. The illustrations are excellent. The book is concluded by an extensive subject index and an index to contributors.
initiation of parturition); drug sensitivity; programming and maturation of the CNS (including genetic aspects).

The 15 papers presented are reproduced together with the discussions following them, which contain much additional information, complete with literature references. G. S. Dawes was the chairman and provided the opening and closing remarks. He sums up the whole Symposium in the following sentence: The present solution to the problem of mammalian viviparity is not merely compatible with but is directly dependent on a high degree of foetal autonomy.

The book is adequately illustrated and has an index to contributors (also contributors to the discussions) and a subject index.

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**PRECIS DE BIOLOGIE VEGETALE**

Vol. III, Croissance, morphogenèse, reproduction

1969

by P. Champagnat, P. Ozenda and L. Baillaud

Masson et Cie

Paris

518 pp., 326 figs.

Price: F 115

This students' text-book aims at providing a concise picture of the well-established facts of plant growth and development. It is very clearly organized and didactically lucid. Literature references are restricted to some 35 important books.

The book is in three parts: "Growth, morphogenesis and development" (by Champagnat); "Plant movement" (by Baillaud); and "Plant reproduction" (by Ozenda).

The first part has 11 chapters which consecutively discuss growth and growth hormones, differentiation and morphogenesis (genetic and epigenetic factors), regeneration, inter-organ correlations, abnormal growth and morphogenesis, dormancy, physiology of flowering, and other periodic phenomena. Embryogenesis is not dealt with in this part, but in part three, which also discusses such subjects as asexual reproduction, fertilization, and general biology of sexuality in plants.

The illustrations are numerous and carefully selected. The book is well printed and is concluded by a subject index.

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**SYMPOSIUM ÜBER MORPHAKTINE**

1969

Editors: G. Mohr and H. Ziegler

Vortr. Gesamtgeb. Bot., N.F., Nr. 3

190 pp., 67 figs., 32 tabs., 4 pls.

Gustav Fischer Verlag

Stuttgart

Price: DM 38.—

Contributors: G. Alleweldt (Stuttgart-Hohenheim), P. Boeker (Stuttgart-Hohenheim), M. Bopp (Heidelberg), T. Buban (Ujfeherto), H. Buchenauer (Giessen), D. von Denffer (Giessen), B. Hacclius (Mainz), H. Harada (Gif-sur-Yvette), E. C. Humphries (Harpenden), H. Lorenzen (Göttingen), G. Mohr (Darmstadt), S. Rehm (Göttingen), W. Richter (Oldenburg), G. Schneider (Darmstadt), H. Schraudolf (Giessen), D. Stanković (Zemun), F. Tognoni (Pisa), H. Ziegler (Darmstadt)

The morphactins are a new group of synthetic plant growth regulators derived from fluorene. In contrast to the auxins they do not act primarily on zones of intensive growth in length, but on the shoot apex and other meristems, and more particularly on cell division. They inhibit apical dominance.

The present report of a Symposium held in 1968 consists of 18 papers. The first two (by Mohr and by Schneider) discuss the chemistry and biochemistry of morphactins, and general principles of their action. The remaining papers are research reports on various aspects of morphactin action, on interaction
with other growth factors, and on their practical applications. Fourteen papers are in German and four in English. Most of the German papers have English summaries. Several of them are followed by brief discussions, usually in German.

The book is well produced and well illustrated. It has no indexes.

53 PLANT STRUCTURE AND DEVELOPMENT
A pictorial and physiological approach
1969
by T. P. O'Brien and M. E. McCully
114 pp., 155 figs.
(paper-bound)


This book was written primarily for undergraduate students and is intended as an introductory and selective guide to the internal structures of higher plants and their functions. Most of the anatomy and histology is treated pictorially, while the text concisely but authoritatively summarizes what is known of the function of the structures illustrated as investigated by experimental morphology, developmental biology, physiology, and biochemistry. The book has a laudative preface by K. V. Thimann.

Almost all illustrations are photographs of outstanding quality. They comprise macrographs, micrographs of freehand or very thin sections (stained with various specific procedures), electron micrographs, and some phase contrast and interference contrast photographs. All chapters have lists of general and specific references (the latter are numerically referred to in the text). The book is beautifully printed and has a short index.

54 DIFFERENCIATION FONGIQUE
1969
by G. Turian
Monographies de Physiologie Végétale, vol. 5
144 pp., 30 figs., 10 tbs., 2 pls.
(paper-bound)

This book is a first attempt to synthesize the large body of data at present available on fungal differentiation and morphogenesis. The author has been an active investigator in this field for nearly twenty years.

Although primarily written for students, the book will certainly be useful to others who wish to orient themselves in the field. The emphasis is on modern research carried out with physiological, biochemical, and ultrastructural techniques. The discussion is therefore intentionally restricted largely to those forms which have proved most useful for this type of work (moulds and yeasts).

Apart from brief introductory and concluding chapters, the book is in three main chapters successively discussing vegetative differentiation (29 pp.), sexual differentiation (gametogenesis) (26 pp.), and spore differentiation (sporulation) (45 pp.). In the first of these some attention is devoted to the cellular slime molds. The true slime molds are discussed in connection with sporulation in the third main chapter.

The book is illustrated mostly with line drawings. The bibliography contains about 600 titles, most of them recent, the most recent ones dating from 1967. The book unfortunately has no indexes, which reduces its value as a reference work. The price of the book seems excessive.
This mammoth volume contains the 112 papers read at the 6th International Conference on Plant Growth Substances held in Ottawa in July 1967. The plant hormones discussed at the meeting included auxins, cytokinins, gibberellins, ethylene, and abscisic acid. Important subjects discussed were hormone actions in relation to nucleic acid metabolism, protein synthesis, cell wall physiology, and cell ultrastructure.

The papers are grouped into 19 sections. In view of the specialized nature of the meeting we will mention only those sections which we consider to be of special interest to plant morphogeneticists. They are the following: VII. Hormonal control of cell division and cell growth (8 papers); XI. Hormonal regulation of differentiation and metabolism in plant tissue cultures (6); XII. Hormonal regulation of organ development (3); XIV. Hormone transport in relation to tropisms, growth and differentiation (8); XVI. Hormonal regulation of flowering (6).

The book is well printed and sturdily bound. It has no indexes.