



GENERAL EMBRYOLOGICAL INFORMATION SERVICE

1964

(supplement
to the
tenth issue)

ISSUED BY THE HUBRECHT LABORATORY

Issued by the Hubrecht Laboratory
on behalf of the
General Embryological
Information Service Foundation

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* *This Supplement contains the latest membership list of the "International Institute of Embryology" (page 12)*

Changes of address

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- TARTAR, V. B.Sc., M.S., Ph.D., Prof. — Field Lab., Univ. of Washington, R. 1 Box 132 N, NAHCOTTA, Wash., U.S.A.
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Communications from the Hubrecht Laboratory

I The new building

The new building of the Hubrecht Laboratory has been gradually put into function during the spring of 1964. The official inauguration took place on July 16th. A brief description of the building and its facilities is to be found in the last full issue, 1963, page 294.

A booklet is being prepared presenting the most essential information concerning the history, present status and accommodation, activities and facilities of the Hubrecht Laboratory. This will be distributed early in 1965.

II The international team project

The *fifth international research team* will meet from February 1st till July 31st, 1965. Its central topic will be: "Organogenesis in vertebrate embryos". The team will work under the guidance of the Director and several staff-scientists of the Laboratory.

A preliminary list of participants follows below:

- W. Achteлик, M.D. (Zabrze, Poland)
- Miss R. Czolowska, M.Sc. (Warszawa, Poland)
- R. Hirakow, M.D. (Tokyo, Japan)
- H. Maisel, M.D. (Detroit, Mich., U.S.A.)
- Miss A. Micciarelli, Ph.D. (Perugia, Italy)
- I. A. Niazi, Ph.D. (Jaipur, India)
- A. K. Ray, M.Sc. (Krishnagar, India)
- G. Reynaud, M.Sc. (Marseille, France)
- Mrs. Z. Štefanová-Mazáková, Ph.D. (Prague, Czechoslovakia)
- Miss M. Švehlová, M.D. (Prague, Czechoslovakia)
- Miss E. B. Kritchinskaya (Leningrad, U.S.S.R.)

III The scientific staff

On January 1st, 1965, the scientific staff of the Laboratory will be composed as follows:

- Prof. P. D. Nieuwkoop, Ph.D., general and scientific Director
- J. A. Leussink, M.Sc., Administrator
- J. Faber, Ph.D., 1st scientific Officer (insect developmental genetics; managing editor of "General Embryological Information Service")
- Miss E. C. Boterenbrood, Ph.D. (experimental developmental morphology; amphibian morphogenesis)
- Miss K. A. Lawson, Ph.D. (vertebrate tissue- and organ culture in relation to development)
- K. Hara, Ph.D. (photo- and cinematography in relation to development; avian morphogenesis)
- Th. M. Konijn, Ph.D. (developmental physiology; morphogenesis in slime molds)
- J. G. Bluemink, M.Sc. (ultrastructure in relation to development)
- Miss G. A. Ubbels, M.Sc. (developmental histology, histo- and cytochemistry)
- (developmental biochemistry) (vacant)

IV Guest workers

Mr. A. H. Sathananthan, M.Sc., from the University of Ceylon and the University of Reading, England, stayed at the Laboratory in May and June, 1964, to learn experimental techniques.

Prof. H. S. Chaudhry, from the University of Gorakhpur, India, stayed at the Laboratory from May till October, 1964, to learn experimental techniques and to discuss scientific problems.

V The Central Embryological Library

A *The reprint library*

An information leaflet giving details on the organization and functioning of the reprint library, and on the services rendered by the documentation service associated with it, will be distributed early in 1965. In this way it is hoped that more biologists will become aware of the existence of the extensive reprint library and its facilities.

The possibilities are studied of modernizing the classification-system used for the subject index, in order to increase the usefulness of the reprint library.

B *Services rendered by the C.E.L.: loan conditions*

See the tenth full issue, 1963, page 295.

VI The Central Embryological Collection

See the tenth full issue, 1963, pages 295/96.

VII Photographic Copying Service

See the tenth full issue, 1963, page 296.

Communications of the „International Institute of Embryology”

(Embryological section of the I.U.B.S.)

The I.I.E. announces with great regret the death of its fellows: U. D'Ancona and W. H. Lewis, and of its members: H. F. C. Damas, Ch. L. Foote and E. K. Hall.

The International Conference on Organogenesis, organized under the auspices of the I.I.E., took place on September 6—12, 1964, in Baltimore (Md.), U.S.A. Hosts to the Conference were the Department of Embryology, Carnegie Inst. of Washington, and the Department of Biology, the Johns Hopkins University. The local organization, which was excellent, was in the hands of an organizing committee, particularly of Dr. J. D. Ebert and Dr. C. L. Markert and some of their collaborators, who have done their utmost to make the participants feel at home at the Johns Hopkins Homewood Campus.

The programme of the Conference was arranged in two morning sessions and two afternoon sessions daily, and two additional evening sessions. One afternoon was reserved for four parallel sessions devoted to contributed papers (38 in total).

After introductory addresses by Dr. Ebert and Dr. Markert, the Conference was opened by the president of the I.I.E., Prof. Et. Wolff (Paris). Each session had a main speaker and a discussant. The following topics were treated in the sessions: The genetic basis of development; Chemical differentiation; Histogenesis; Various aspects of the development of the central nervous system; Aspects of limb morphogenesis; Various aspects of sexual differentiation; Organogenesis of placenta; Development of lymphoid system. At the end of the Conference Dr. Ebert presented the concluding remarks, and Prof. Wolff gave a summarizing lecture.

The Conference was attended by more than 300 participants. Among these 75 came from outside the U.S.A. The I.I.E. was represented by 81 members.

A General Assembly of the I.I.E. was held at the end of the Conference in Baltimore, on September 12, 1964. At the General Assembly a number of important decisions have been taken.

1) The proposal of the Board to abolish the distinction between fellows and members has been accepted unanimously, so that from now on the I.I.E. only has ordinary members, emeritus members and supporting members.

2) In order to meet the rapidly increasing needs of cooperation among embryologists an extension of the Board with two more members has been effectuated. Five Board members have been re-elected and four new members have been elected. The composition of the Board for the next term will be as follows:

E. Wolff (Paris)	President
S. Hörstadius (Uppsala)	Vice president
S. Ranzi (Milano)	„
T. Yamada (Oak Ridge, Tenn.)	„
M. Abercrombie (London)	Member
J. D. Ebert (Baltimore, Md.)	„
J. J. Pasteels (Brussels)	„
E. Zwilling (Waltham, Mass.)	„
A. Monroy (Palermo)	Secretary-treasurer
P. D. Nieuwkoop (Utrecht)	Adj. secretary-treasurer

3) After a lively discussion concerning the procedure of election of new members, and regarding the standards for membership, the following proposals have been accepted: a) Candidates for membership can be proposed by two members *at any time*. The Board has been authorised to screen the applications at regular intervals and to decide about their acceptance by simple majority of votes among its members. It has been envisaged to screen applications once a year.

b) The standards for membership have been slightly revised and are now as follows: Persons who have made a substantial contribution to the field of developmental biology can be accepted as members. It is left to the Board to decide whether a particular applicant meets this standard.

4) An invitation to hold the next Congress and General Assembly in 1968 in France has found general approval. It has been left to the Board to decide about the exact place and time. The proposed subject, "Nucleo-cytoplasmic interactions in development", has been received with great interest.

As a general conclusion it may be stated that the many constructive suggestions and the active cooperation among the members at this General Assembly has led towards a further democratization of the International Institute of Embryology.

The Adjunct Secretary-treasurer,
P. D. Nieuwkoop

Membership list of the I.I.E.

(alphabetical order, with years of election)

The following list was drawn up on December 1st, 1964. For full addresses see list of addresses in tenth full issue, 1963, of this journal and in the present supplement.

- | | |
|--|--|
| M. Abercrombie, London, Eng., '56 | D. Bodenstern, Charlottesville, Va., '56 |
| Mrs. U. K. Abbott, Davis, Calif., '64 | E. J. Boell, New Haven, Conn., '57 |
| H. B. Adelman, Ithaca, N.Y., '48 | J. T. Bonner, Princeton, N.J., '60 |
| B. A. Afzelius, Stockholm, '64 | E. Borghese, Napoli, '56 |
| I. P. S. Agrell, Lund, '60 | B. G. Böving, Baltimore, Md., '57 |
| R. D. Allen, Princeton, N.J., '57 | J. D. Boyd, Cambridge, Eng., '57 |
| E. C. Amoroso, London, Eng., '60 | J. L. A. Brachet, Brussels, '48 |
| R. M. Amprino, Bari, '60 | F. W. R. Brambell, Bangor, '56 |
| G. Andres, Mainz, '57 | P. L. Brien*, Brussels, '48 |
| J. Ariëns Kappers, Amsterdam, '60 | R. W. Briggs, Bloomington, Ind., '56 |
| H. L. Arora, Pasadena, Calif., '64 | H. V. Brondsted*, Copenhagen, '48 |
| C. R. Austin, Cambridge, Eng., '57 | C. Burdon-Jones, Menai Bridge, '60 |
| M. Avel, Talence, '48 | R. K. Burns, Baltimore, Md., '52 |
| B. I. Balinsky, Johannesburg, '48 | E. G. Butler, Princeton, N.J., '56 |
| F. Baltzer*, Bern, '48 | R. Cambar, Talence, '57 |
| C. Barigozzi, Milano, '60 | E. van Campenhout, Louvain, '48 |
| L. G. Barth, Woods Hole, Mass., '48 | E. W. Caspari, Rochester, N.Y., '60 |
| R. A. Beatty, Edinburgh, '56 | G. ten Cate, Utrecht, '56 |
| W. Beerman, Tübingen, '60 | C. Y. Chang, Peking, '57 |
| Mrs. M. R. Bellairs, London, Eng., '60 | Mrs. H. Charniaux-Cotton,
Gif sur Yvette, '64 |
| J. A. A. Benoit, Nogent sur Marne, '60 | H. B. Chase, Providence, R.I., '60 |
| W. E. Berg, Berkeley, Calif., '57 | P. S. Chen, Zürich, '60 |
| H. Bergquist, Göteborg, '57 | G. Chieffi, Camerino, '64 |
| Miss J. H. Bijtel, Groningen, '56 | Chuang Hsiao Hui, Shanghai, '48 |
| R. F. Blount, Galveston, Texas, '60 | Mrs. M. Cigada-Leonardi, Milano, '57 |
| | J. M. J. Clavert, Strasbourg, '57 |

* Emeritus

- Mrs. R. M. Clayton-Freedman,
Edinburgh, '60
- A. C. Clement, Atlanta, Ga., '57
- S. Cohen, Nashville, Tenn., '64
- G. Colombo, Perugia, '60
- A. L. Colwin, Flushing, N.Y., '56
- Mrs. L. H. Colwin, Flushing, N.Y.,
'60
- G. W. Corner*, New York, '52
- D. P. Costello, Chapel Hill, N.C., '48
- P. Sears Crowell, Bloomington, Ind.,
'60
- A. M. Dalcq*, Brussels, '33
- V. D'Amelio, Palermo, '64
- Mrs. J. C. Dan, Tokyo, '57
- K. Dan, Tokyo, '57
- J. Dankmeijer, Leiden, '60
- Sir G. R. De Beer, London, Eng., '38
- Mrs. T. A. Dettlaff, Moscow, '56
- Miss E. M. Deuchar, London, Eng.,
'57
- Ch. Devillers, Paris, '57
- A. Dollander, Nancy, '60
- W. J. van Doorenmaalen, Utrecht,
'60
- N. I. Dragomirov, Moscow, '48
- R. M. Eakin, Berkeley, Calif., '48
- J. D. Ebert, Baltimore, Md., '56
- M. V. Edds, Jr., Providence, R.I.,
'60
- H. Engländer, Köln-Lindenthal, '60
- Mrs. H. Eyal-Giladi, Jerusalem, '64
- J. Faber, Utrecht, '64
- G. Fankhauser, Princeton, N.J., '48
- E. Fauré-Fremiet*, Paris, '33
- J. C. Fautrez, Gent, '57
- M. Feldman, Rehovoth, '60
- Miss H. B. Fell, Cambridge, '36
- Mrs. A. A. Ficq, Brussels, '60
- G. Filogamo, Torino, '60
- M. Fischberg, Genève, '57
- L. B. Flexner, Philadelphia, Pa., '56
- R. Flickinger, Buffalo, N.Y., '60
- T. Thomson Flynn*, London, Eng.,
'38
- Mrs. F. Martindale Foote,
Carbondale, Ill., '64
- T. Fujii, Tokyo, '60
- P. J. Gaillard, Leiden, '60
- J. Gallera, Genève, '57
- L. G. Gallien, Paris, '56
- P. W. Gilbert, Ithaca, N.Y., '60
- A. Giroud, Paris, '48
- T. W. Glenister, London, Eng., '60
- Ph. Grant, Baltimore, Md., '64
- J. R. Gregg, Durham, N.C., '57
- C. Grobstein, Stanford, Calif., '56
- Z. Grodziński, Krakow, '60
- H. Grüneberg, London, Eng., '56
- T. Gustafson, Stockholm, '56
- E. Hadorn, Zürich, '48
- A. Haget, Talence, '60
- T. Hama, Yokohama, '60
- V. Hamburger, St. Louis, Mo., '48
- H. L. Hamilton, Charlottesville, Va.,
'56
- W. J. Hamilton, London, Eng., '48
- J. Hämmerling, Wilhelmshaven, '60
- W. S. Hammond, Syracuse, N.Y.,
'60
- Mrs. E. Browne Harvey*,
Woods Hole, Mass., '48
- M. Hašek, Prague, '57
- Miss E. D. Hay, Boston, Mass., '64
- Y. Hayashi, Nagoya, '60
- H. Hayek, Vienna, '60
- H. Herrmann, Storrs, Conn., '60
- C. H. Heuser*, Augusta, Ga., '48
- Y. Hiramoto, Misaki, '60
- L. Hoadley*, Cambridge, Mass., '48
- H. Holter, Copenhagen, '57
- J. K. F. Holtfreter, Rochester, N.Y.,
'36
- H. Holtzer, Philadelphia, Pa., '60
- D. Hooker*, New Haven, Conn., '56
- S. Hörstadius, Uppsala, '48
- J. M. T. Hultin, Stockholm, '56
- R. R. Humphrey*, Bloomington, Ind.,
'49
- Miss T. Humphrey, Birmingham,
Ala., '56
- M. Ichikawa, Kyoto, '60
- J. Ishida, Tokyo, '60
- J. Jansen, Oslo, '60
- Miss A. G. Johnen, Köln-Lindenthal,
'64
- A. D. Jost, Paris, '56
- T. Kajishima, Nagoya, '60
- A. J. B. Källén, Lund, '60
- Y. Kanoh, Akkeshi, '60
- I. Kawakami, Fukuoka, '57
- N. E. Kemp, Ann Arbor, Mich., '57

- T. J. King, Philadelphia, Pa., '60
 J. J. Kollros, Iowa City, Iowa, '56
 G. Krause, Würzburg, '56
 A. Kühn*, Tübingen, '57
 Miss T. K. Kuusi, Helsinki, '56
 R. A. Lallier, Villefranche sur Mer,
 '60
 W. Landauer, London, Eng., '57
 J. Langman, Charlottesville, Va., '56
 S. Leghissa, Bologna, '60
 H. E. Lehman, Chapel Hill, N.C., '57
 F. E. Lehmann, Bern, '48
 Th. Lender, Orsay, '60
 V. Leone, Milano, '57
 G. L. Levi*, Torino, prior to '33
 Miss R. Levi-Montalcini, St. Louis,
 Mo., '56
 G. V. Lopashov, Moscow, '48
 S. Lovtrup, Göteborg, '60
 W. Luther, Darmstadt, '60
 H. Lutz, Clermont-Ferrand, '57
 D. J. McCallion, Toronto, Ont., '64
 Miss R. Maggio, Palermo, '64
 T. Mann, Cambridge, Eng., '60
 C. L. Markert, Baltimore, Md., '57
 P. N. Martinovitch, Beograd, '60
 C. B. Metz, Coral Gables, Fla., '56
 Y. Mikami, Tsu, '60
 J. Milaire, Brussels, '64
 A. Minganti, Palermo, '56
 Miss B. Mintz, Philadelphia, Pa., '57
 A. Monroy, Palermo, '57
 Miss F. Moog, St. Louis, Mo., '56
 S. Mookerjee, Calcutta, '60
 J. A. Moore, New York, '57
 A. A. Moscona, Chicago, Ill., '57
 H. W. Mossman, Madison, Wis., '56
 I. Motomura, Sendai, '57
 J. G. Mulnard, Brussels, '57
 Mrs. M. R. Murray, New York, '60
 P. D. F. Murray, Armidale, N.S.W.,
 '48
 G. W. Nace, Ann Arbor, Mich., '60
 O. Nakamura, Osaka, '57
 E. Nakano, Nagoya, '57
 J. Needham, Cambridge, Eng., '48
 D. R. Newth, London, Eng., '57
 P. D. Nieuwkoop, Utrecht, '57
 M. C. Niu, Philadelphia, Pa., '56
 H. Oka, Tokyo, '60
 T. S. Okada, Kyoto, '60
 Y. K. Okada*, Tokyo, '52
 Miss K. O. Okazaki, Philadelphia,
 Pa., '60
 O. M. Olivo, Bologna, '57
 Miss J. M. Oppenheimer,
 Bryn Mawr, Pa., '56
 R. O'Rahilly, St. Louis, Mo., '64
 Mrs. M. C. Ward-Orsini, Madison,
 Wis., '64
 F. Orts Llorca, Madrid, '56
 Mrs. J. H. Overton, Chicago, Ill., '60
 S. Pai, Shanghai, '48
 P. Pasquini, Roma, '57
 J. J. Pasteels, Brussels, '38
 B. M. Patten*, Ann Arbor, Mich., '56
 H. P. Perlmann, Stockholm, '60
 J. Piatt, Philadelphia, Pa., '60
 L. Pikó, Pasadena, Calif., '64
 L. V. Polezhaev, Moscow, '48
 K. R. Porter, San Francisco, Calif.,
 '64
 D. F. Poulson, New Haven, Conn.,
 '60
 Miss D. Price, Chicago, Ill., '60
 S. Ranzi, Milano, '48
 L. Raunich, Ferrara, '56
 Chr. P. Raven, Utrecht, '41
 Mrs. M. E. Rawles, Baltimore, Md.,
 '56
 A. Raynaud, Sannois, '60
 G. Reverberi, Palermo, '48
 R. W. Reyer, Morgantown, W.Va.,
 '56
 K. T. Rogers, San Francisco, Calif.,
 '64
 S. M. Rose, New Orleans, La., '56
 J. Rostand*, Ville d'Avray, '60
 Miss D. Rudnick, New Haven,
 Conn., '56
 R. Rugh, New York, '56
 M. N. Runner, Boulder, Colo., '60
 J. A. M. Runnström*, Stockholm, '48
 M. Sala, S. J., Padova, '60
 Miss B. Salzgeber,
 Nogent sur Marne, '64
 T. Sato, Nagoya, '57
 J. W. Saunders, Milwaukee, Wis.,
 '56
 L. O. Saxén, Helsinki, '60
 Mrs. D. Scheib-Pfleger,
 Nogent sur Marne, '64

Announcements of recently published books on development and related subjects

General

1. MAYER, E., 1963 — Introduction to dynamic morphology
2. ROSE, G. G. (Edit.), 1963 — Cinemicrography in cell biology
3. TAZIMA, Y., 1964 — The genetics of the silkworm
4. WAGNER, R. P. and H. K. MITCHELL, 1964 — Genetics and metabolism (2nd edit.)
5. WOLFF, Et., 1963 — Les chemins de la vie

History

6. KLEISS, E., 1964 — Historia de la embriología y teratología en la antigüedad y épocas pre-colombinas (A history of embryology and teratology in antiquity and in pre-columbian eras)
7. WILLIER, B. H. and J. M. OPPENHEIMER (Edit.), 1964 — Foundations of experimental embryology

Instruction

8. COHEN, J., 1963 — Living embryos; an introduction to the study of animal development
9. EAKIN, R. M., 1964 — Vertebrate embryology; a laboratory manual (7th edit.)
10. FALIN, L. I., 1963 — Histology and embryology of the oral cavity and the teeth
11. FREEMAN, W. H. and B. BRACEGIRDLE, 1963 — An atlas of embryology
12. HARRISON, R. G., 1963 — A textbook of human embryology (2nd edit.)
13. PATTEN, B. M., 1964 — Foundations of embryology (2nd edit.)

Research

14. ABERCROMBIE, A. and J. BRACHET (Edit.), 1962 and 1964 — Advances in morphogenesis (Vol. 2 and Vol. 3)
15. ALTMAN, P. L. and D. S. DITTMER (Edit.), 1962 — Growth, including reproduction and morphological development ("Biological Handbooks" series)
16. ARMSTRONG, C. N. and A. J. MARSHALL (Edit.), 1964 — Intersexuality in Vertebrates including Man

17. HILL, J. P. † and J. FLORIAN † (edited by W. C. Osman Hill), 1963 — The development of the primitive streak, head process and annular zone in *Tarsius*, with comparative notes on *Loris*
18. KLOSOVSKII, B. N., 1963 — The development of the brain and its disturbance by harmful factors
19. MORISON, J. E., 1963 — Foetal and neonatal pathology (2nd edit.)
20. NARBEL-HOFSTETTER, M., 1964 — Les altérations de la méiose chez les animaux parthénogénétiques
21. VAKAET, L., 1962 — Pregastrulatie en gastrulatie der vogelkiem, morfologische en experimentele studie (Pregastrulation in the avian embryo, a morphological and experimental study)
22. WILKIE, D., 1964 — The cytoplasm in heredity
23. WINTREBERT, P., 1963 — Le développement du vivant par-lui-même

Symposium reports

24. ENDERS, A. C. (Edit.), 1963 — Delayed implantation
25. FOGG, G. E. (Edit.) — Cell differentiation
26. HARRIS, R. J. C. (Edit.), 1963 — Biological organization at the cellular and supercellular level
27. LOCKE, M. (Edit.), 1964 — Cellular membranes in development
28. RUDNICK, D. (Edit.), 1962 — Regeneration
29. SZANTÓ, Gy. (Edit.), 1964 — Regeneration and wound healing
30. WOLFF, Et. (Edit.), 1964 — L'origine de la lignée germinale chez les Vertébrés et chez quelques groupes d'Invertébrés
31. European Society for the Study of Drug Toxicity, 1963 — Effects of drugs on the fetus

Plant morphogenesis

32. MAHESHWARI, P., (Edit.), 1963 — Recent advances in the embryology of Angiosperms
33. REIJNDERS, A. F. M., 1963 — Les problèmes du développement des carpophores des Agaricales et de quelques groupes voisins

1. INTRODUCTION TO DYNAMIC MORPHOLOGY 1963

by E. Mayer
545 pp., 88 figs.

Academic Press
New York and London
Price: \$ 16.—

This book is not easy to review briefly, because it transcends the borders of any strictly defined scholarly discipline. The author was induced to write it by his long-standing personal experience that it is often very difficult to give non-morphologists a real insight in morphological matters. The main reason for this, in his view, is that morphological results are very seldom presented as functions of procedures, which is the usual way of presentation in other branches of science. Therefore, the organisation of the book is based on proce-

dures, rather than on structural or functional classifications. The author devotes special attention to such problems as the third dimension of biological structures, and the dynamic interpretation of static pictures. The material is organised in such a fashion that continuity is maintained between macroscopic, light microscopic, and electron microscopic levels of analysis. The book is meant for those scientists who need an understanding of normal and abnormal morphology but who have had no training in this discipline. The book is not supposed to replace textbooks or laboratory manuals. Its contents are methodological rather than descriptive.

The first two parts of the book (together 3 chapters, 77 pages) deal with fundamental aspects of physiology in order to supply the background for the subsequent parts, which are devoted to functional morphology (which the author considers to be a method of physiology). Part III is entitled "Procedures, interpretations, and the problems of presentation in dynamic morphology" (8 chapters, 280 pages). Part IV (4 chapters, 63 pages) discusses, among other things, general properties and components of cells, association patterns of cells, and intercellular substances and spaces. Finally part V (4 chapters, 76 pages) deals with the classification and identification of biological structures.

It should be borne in mind that the contents of the book are much richer than can be seen from the above brief enumeration. Probably almost every biologist would, at one time or another, find certain points of interest in it. This may e.g. apply to chapters like that on natural and artificial units, that on models of biological phenomena, and that on techniques of presentation. However, many more examples could be mentioned.

Each of the parts II — V is concluded by an extensive list of references. The book is well-illustrated with photographs and original drawings. It is concluded by a subject index.

2. CINEMICROGRAPHY IN CELL BIOLOGY

1963

Editor: G. G. Rose
500 pp., 251 figs., 13 tbs.

Acad. Press
New York and London
Price: \$ 18.50

The reasons for reviewing this book here can be made clear by a quotation from one of its chapters (by E. Borghese et al.): "In view of the huge development of time-lapse cinemicrography for the study of cellular structures and activities, it may seem surprising that the same method has been very rarely applied to research on morphogenesis . . . the advantage of obtaining an extended series of records of phenomena lasting several days, such as those of morphogenesis, generally has not been recognized . . .".

The present book, written by 25 contributors, brings together for the first time data from many disciplines of biology which have already made use of this technique. Moreover, it presents a survey of techniques and apparatus currently in use in cinemicrography and flying spot microscopy, and in the combination of cine analysis with autoradiography. The seven contributions dealing predominantly with techniques form the first part of the book. Then follow 13 contributions dealing with a variety of applications, mostly to the study of animal tissues and cells. Among these, the following may be specifically

- mentioned: 1) "Dynamics of the development of myogenic tissue under conditions of explantation and transplantation" by A. N. Studitsky (U.S.S.R.); 2) "Experiments on induction and effect of gamma radiation in mouse lung development *in vitro*" by E. Borghese, T. Alescio and A. Cassini (Italy); 3) "Cleavage of mouse egg" by E. Borghese and A. Cassini (Italy).

The well-printed and well-illustrated book is concluded by author and subject indexes.

Contributors: Alescio (La Casaccia, Rome), Ambrose (London), Bajer (Lund), Bonner (Dallas, Texas), Borghese (Naples), Brice (Davis, Calif.), Cassini (La Casaccia, Rome), Cattoni (Houston, Texas), Earle (Bethesda, Md.), Engle (Philadelphia, Pa.), Freed (Philadelphia, Pa.), Godina (Torino), Goldhaber (Boston, Mass.), Ganzaález-Ramírez (México, D.F.), Gropp (Bonn), Hancox (Liverpool), Hu (Detroit, Mich.), Huff (Bethesda, Md.), Lefeber (Pasadena, Calif.), Molè-Bajer (Cracow), Montgomery (Dallas, Texas), Rose (Houston, Texas), Sisken (Duarte, Calif.), Studitsky (Moscow), Weatherby (Athens, Georgia).

3. THE GENETICS OF THE SILKWORM 1964

by Yataro Tazima
253 pp., 59 fig., 52 tbs.

Logos Press
Academic Press
London
Price: 50 s.

Much genetical work has been done on the silkworm, *Bombyx mori* (particularly, but not exclusively in Japan). So far, however, no general account of this work has been available in English. The present book provides a synthesis of those topics on which most of this work has concentrated. It is a book written primarily for the specialist in insect physiology and genetics. The reason why it is reviewed here is that it contains much material of interest to insect developmental physiologists. In the author's opinion the silk worm is an ideal organism for the study of physiological and developmental problems.

The following sections of the book may be specifically mentioned: a chapter on the biology of the silkworm (life cycle, embryology, formation of gonads, spermatogenesis, oogenesis); a chapter on the E-group of mutant alleles, which have interesting pleiotropic effects on early stages of embryonic development, particularly on segmental differentiation; a chapter on sex determination; a chapter on genetic control of hormonal mechanisms; chapters on mosaicism and on parthenogenesis and polyploidy. Other chapters discuss more specifically genetical and physiological topics.

The book contains an extensive bibliography, in which Japanese titles of course predominate. However, many papers in other languages are also cited. The book is adequately illustrated and contains a list of silkworm genes, and subject and author indexes.

4. GENETICS AND METABOLISM 2nd edition, 1964

by R. P. Wagner and H. K. Mitchell
673 pp., 225 figs., 68 tbs.

John Wiley and Sons, Inc.
New York - London - Sydney
Price: 105 s.

In recent years the interrelations between embryology and genetics have become increasingly evident as a result of new findings in both disciplines. Consequently this new edition of a book first published in 1955 will be welcomed by many embryologists. Although the book was primarily written for students of genetics, for embryologists it constitutes a convenient means of orientation in the extensive field of gene physiology.

For this new edition the book has been fully revised and expanded. Its size has increased by more than 200 pages, and its bibliography by more than 400 titles. Of particular interest to embryologists is the chapter entitled "Gene action and development" (62 pages). In it the major aspects of the genetical approach to development are clearly stated, although some of the most recent advances are not included.

Of the other 13 chapters of the book a number provide general information, both morphological and biochemical, necessary for understanding gene action (e.g. "Some aspects of cell structure and function", "Kinetics and dynamics of metabolism", "Metabolic patterns", "Environmental modification of phenotype"). Other chapters treat more specifically genetic topics (e.g. "Mutation and its effects", "Mutation and the agents of metabolic control", "Genetic units of structure and function", "Gene interaction and balance", and a chapter on cytoplasmic inheritance).

The book is well-printed and well-illustrated. It contains a bibliography of more than 1100 titles, and an alphabetical index.

5. LES CHEMINS DE LA VIE

by Et. Wolff
 illustr. by G. Masurovsky
 238 pp.
 (paper-bound)

Hermann
 Paris
 Price: 12 N.F.

This is a collection of 14 essays by the well-known embryologist of the Collège de France, Paris. Most of the essays are based on lectures held before scientifically or philosophically interested audiences, or on articles published in general scientific or philosophical periodicals. Consequently the essays have a wider scope and are meant for a broader audience than is the case with publications in specialised journals. At the same time they are written in more personal language than is usual in strictly scientific publications. The essays deal with a variety of biological topics of which the author is a specialist, such as experimental embryology, experimental teratology, culture in vitro of embryonic organs, but also with a number of methodological and philosophical questions connected with present-day biology in its widest sense. Examples of the latter category are the essays entitled "Experimental reasoning and its applications in biology", "Possibilities and limitations of experimentation in biology", "Monsters and finality".

The book has a preface by Jean Rostand, to whom one of the essays is devoted. Another essay is devoted to the life and work of the embryologist and endocrinologist P. Ansel.

6. HISTORIA DE LA EMBRIOLOGIA Y TERATOLOGIA
EN LA ANTIGUEDAD Y EPOCAS PRE-COLOMBINAS

(A history of embryology and teratology in
antiquity and in pre-columbian eras)

1964

by E. Kleiss
214 pp., 112 figs.

Universidad de Los Andes
Facultad de Medicina
Merida - Venezuela

The author of this book is head of the Department of Embryology, Faculty of Medical Sciences, Universidad de Los Andes, Merida, Venezuela. The book is written in Spanish. The first chapter deals with embryology and teratology in prehistoric and primitive cultures. Then follow seven chapters treating the various cultures of antiquity, and two chapters devoted to pre-columbian cultures and to Venezuela in particular. The book contains an extensive bibliography and is profusely illustrated.

7. FOUNDATIONS OF EXPERIMENTAL EMBRYOLOGY

1964

Editors: B. H. Willier and J. M. Oppenheimer
225 pp., 79 figs.

Prentice-Hall Inc.
Englewood Cliffs, N.J.

This is a collection of 11 classical articles by some of the most important pioneers of experimental embryology. All but one of the articles are reproduced in full. They are arranged chronologically, the first article dating from 1888, and the last from 1939. The articles originally written in German have been translated and are thus available in English for the first time. The names of the authors are, in chronological order: W. Roux, H. Driesch, E. B. Wilson, Th. Boveri, Ross G. Harrison, O. Warburg, F. R. Lillie, C. M. Child, H. Spemann, H. Mangold, J. Holtfreter. One author, F. R. Lillie, is represented twice.

Each article is preceded by an authoritative "comment" written by the editors, which places the work of the author in question in a broader perspective and shows how it is related to more recent advances. These comments make the book to more than a mere historical anthology.

All articles contain excellent reproductions of the original illustrations. The printing and lay-out of the book are excellent.

8. LIVING EMBRYOS

An introduction to the study of animal development

1963

by J. Cohen
125 pp., 40 figs., 8 pls.

Pergamon Press
Oxford - London - Paris - Frankfurt

The Commonwealth and International
Library of Science, Technology,
Engineering and Liberal Studies;
Zoology Division, Vol. I
(paper-bound)

The MacMillan Company
New York
Price: 12 s. 6 d.

This little book was written for the use of undergraduates in zoology and medicine. The intention of the book has been to emphasize living embryos and the processes occurring in them, rather than the static sequences of morphological structure which are traditionally the subject of embryological teaching. Also, the author has tried to counteract the traditional bias towards vertebrate development by devoting relatively more attention to invertebrates than was hitherto usual in elementary textbooks.

The book is extremely concise and many of the illustrations are highly schematical. This means that the book can only be used in combination with a practical course, and that the lecturer will have to enlarge upon and supplement the subject matter.

After a generalized treatment of the gametes, fertilization and early development (including a section on fate maps), there follow short sections on the nematodes, the polychaets, the molluscs, the arthropods, the enchinoderms, and the tunicates. The vertebrates are represented by the guppy, the chick, the rabbit (and other mammals), and finally the human. Then follows a treatment of the development of the organ systems on a more or less comparative basis. Finally, there are sections on cell differentiation, metamorphosis, and embryos and evolution.

Data from experimental embryology and developmental physiology have been interspersed throughout the text. Most of this information necessarily remains sketchy in a book of this size.

Some forty photographic illustrations have been brought together on eight plates in the middle of the book. A number of these have illustrative value, but others seem superfluous.

The book gives no references. There is a good index and a brief appendix on sources of embryonic material and embryological methods.

In the reviewer's opinion the book would have been more valuable if less strict size limitations had been imposed on the author, and if more care had been devoted to the selection and preparation of the figures. Some of the sections on invertebrate phyla are too short to be of much use to the beginner, while a number of the present schematical figures can hardly be said to provide him with the mental images needed to understand the "living embryo".

9. VERTEBRATE EMBRYOLOGY
a laboratory manual
7th edition, 1964

by R. M. Eakin
242 pp., 58 figs.
(paper-bound)

Univ. of Calif. Press
Berkeley and Los Angeles
Price: \$ 2.75

This laboratory manual was first published in 1947, and was since reprinted at intervals of one or a few years, and adopted by an increasing number of institutions. It might be superfluous to review it here, were it not that in this edition a new section has been added, dealing with the frog larva, which serves to make the manual useful to a still wider circle of teachers. At present the manual contains five major sections, viz. I. Gametogenesis and the estrous cycle (in the rat); II. Early development (in the starfish *Patiria*, the polychaete *Mercierella*, the mussel *Mytilus*, and the amphibia); III. Development in the

10 mm. frog larva (*Rana pipiens*, sections); IV. Development of the chick embryo (up to 72 hours, whole mounts and sections); V. Development in the pig embryo (10 mm., sections) and fetus (dissection).

The book is essentially a guide for laboratory exercises, but it also contains 24 sections and tables in small print summarizing or discussing general topics. Lists of review questions are interspersed throughout the book. The illustrations consist of very clear drawings, mostly based on sections, and clearly labelled. There is a short bibliography of books and an alphabetical index.

10.

HISTOLOGY AND EMBRYOLOGY
OF THE ORAL CAVITY AND THE TEETH
1963

by L. I. Falin
219 pp., 142 figs.

Gosudarstvennoe Izdatelstvo
Meditsiskoi Literatury
Moskva

This book is written in Russian. It consists of two parts, one dealing with the embryology, and one with the histology of the oral cavity and the teeth. The first part consists of four chapters, viz. 1) Development of the oral cavity and the face; 2) Development and growth of the milk teeth; 3) The dentition of the milk teeth; Dentition theories; 4) Development and dentition of the permanent teeth.

The bibliography contains 81 Russian titles (35 of which date from the last decade), and 135 titles in other languages.

11.

AN ATLAS OF EMBRYOLOGY
1963

by W. H. Freeman and B. Bracegirdle
98 pp., 67 pls.

Heinemann
London, Melbourne, Toronto
Price: 18 s.

This atlas is intended to help beginning students to overcome difficulties in interpreting embryological structures seen under the microscope. The atlas consists of 67 plates, 26 illustrating frog development, and 41 illustrating chick development. Frog development is illustrated with sections only, while twelve of the plates relating to the chick represent whole embryos. The majority of the sections depicted are transverse ones. Each plate consists of a photograph of the section or embryo, accompanied by a very carefully executed line drawing of the same object, which is fully and clearly labelled. Wherever necessary the plane of sectioning is indicated in a small figure of the whole embryo.

The quality of the sections used is not always excellent, but the authors feel that this is no great drawback, since students are often required to interpret rather poor-quality slides and must learn to recognise artifacts. The quality of the photographs of whole chick embryos is very good.

A rather concise reference table of chick development is printed on the endpapers of the book. The atlas has no further text.

Some critical remarks must be made. The authors claim that the book summarises the embryology of frog and chick in sufficient detail for degree level. This may be doubted, however, since particularly the early stages (neurula and tail bud stages of the frog, primitive streak and head process stages of the chick) are insufficiently represented to provide a dynamic picture of morphogenesis necessary for understanding experimental embryological data.

The reason given by the authors for not selecting the best possible slides for illustration seems rather doubtful, especially for a book the usefulness of which depends on its didactic qualities.

The species of frog used is not stated. No reference is made to stage numbers of existing normal tables (although Hamilton and Hamburger stages are given in the table of chick development). Finally, the abbreviations used to designate planes of sectioning are not explained.

12. A TEXTBOOK OF HUMAN EMBRYOLOGY

2nd edition, 1963

by R. G. Harrison
248 pp., 140 figs.

Blackwell Scient. Publ.
Oxford
Price: 75 s. 6 d.

The first edition of this book appeared in 1959 and has been well received. It has the advantage of being shorter than most textbooks of its kind. For the second edition the book has hardly undergone any change. Inaccuracies have been corrected and the text brought into line with recent advances wherever necessary. A few figures have been omitted and one has been replaced. The size of the book has remained practically the same as before.

13. FOUNDATIONS OF EMBRYOLOGY

2nd edition, 1964

by B. M. Patten
522 pp., 1008 drawings and
photographs grouped as 327
illustrations.

McGraw-Hill Book Company
New York, San Francisco, London, Toronto
Price: 81 s. 6 d.

The first edition of this textbook appeared in 1958. The basic organisation of the text has remained unaltered. The only difference in the table of contents is that the pharynx and its derivatives and the major endocrine glands, which were previously treated in various different chapters, have all been brought together in one chapter.

Newly available information has been incorporated in the text. The emphasis on functional aspects of embryonic structures has been increased. A number of the illustrations have been redrawn, and in many others the labelling has been rearranged or expanded. There are 14 new illustrations (composed of some 50 new figures), most of which centre on the functional interpretation of the relationships of embryonic structures.

The useful section entitled "References for collateral reading" has been somewhat expanded by the inclusion of more recent references.

Typographically the second edition meets the same high standards as the first.

each originally compiled by one or more contributors. Each table is followed by a list of references. There are 154 such tables in the book, ranging in size from a part of a page to more than 10 pages. The tables are arranged in 13 sections, of which the following may be mentioned: Cells and tissues (including e.g. mitotic indices, cell volumes, compensatory hypertrophy, regeneration); Vertebrate reproduction; Invertebrate reproduction; Prenatal vertebrate development; Comparative animal morphology; Environmental factors and growth; Growth regulators and inhibitors.

There is an extensive alphabetical index which, however, refers to specific organisms only. The table of contents should serve as a subject index. Unfortunately an alphabetical subject index is lacking.

The "Biological Handbooks" are at present prepared under the auspices of the Committee on Biological Handbooks, Federation of American Societies for Experimental Biology, Washington D.C.

16. INTERSEXUALITY
In Vertebrates including Man
1964

Editors: C. N. Armstrong and A. J. Marshall
479 pp., 68 figs., 24 tbs.

Acad. Press
London and New York
Price: 90 s.

This collaborative treatise appears very soon after a similar work translated from the German, and issued by the same publishers (*Intersexuality*, 1963, Ed.: C. Overzier; see G.E.I.S. 10, 1963, p. 308). Whereas in the former book the main emphasis was on the human species, the present book gives equal attention to all vertebrates, including man, and thus will be of greater use to zoologists. There are eleven contributors, four from Great Britain, two from Australia, and five from the U.S.A.

After a general and historical introduction by A. J. Marshall, the book begins with an exhaustive chapter on chromosome deviations and sex in vertebrates (117 pages plus 10 pages bibliography). This also contains a brief account of normal chromosomes, cell division, gametogenesis and fertilization, and sections on chromosomal mechanisms of sex determination and on methods of identifying the heterogametic and homogametic sexes. This chapter is followed by six chapters dealing respectively with fishes, amphibians, reptiles, birds, mammals in general, and man in particular. The longest chapter is that on fishes (88 pages), the shortest that on reptiles (11 pages). The bibliographies range in size from 2 to 8 pages. In all chapters due attention is devoted to developmental aspects of intersexuality. The final chapter on psychiatric aspects of intersexuality seems a little out of place in a work of this kind.

The book is well printed and adequately illustrated and is concluded by author and subject indexes.

Contributors: Armstrong (Newcastle upon Tyne), Atz (New York), Ball (Bundoora, Victoria, Australia), Beatty (Edinburgh), Bruner-Lorand (Evanston, Ill.), Foote (Carbondale, Ill.), Forbes (New Haven, Conn.), Gray (Newcastle upon Tyne), Marshall (Monash, Victoria, Australia), Roth (Newcastle upon Tyne), Taber (Charleston, S. Carolina).

17. THE DEVELOPMENT OF THE PRIMITIVE STREAK
HEAD PROCESS AND ANNULAR ZONE IN TARSIUS,
WITH COMPARATIVE NOTES ON LORIS

1963

by J. P. Hill † and J. Florian †
edited by W. C. Osman Hill
Bibliotheca Primatologica, Fasc. 2
90 pp., 118 figs. and 1 table
(paper-bound)

S. Karger
Basel - New York
Price: DM 32.—

Although this is a large paper rather than a monograph, the fact that it has appeared separately as a volume of "Bibliotheca Primatologica" has induced us to announce it briefly. The paper was found in the files of Professor Hill after his death in 1954. It must have been written at some time between 1933 and 1945. The subject covered is indicated sufficiently by the title. The paper is beautifully illustrated with photographs of sections, graphical reconstructions, and diagrams.

18. THE DEVELOPMENT OF THE BRAIN
AND ITS DISTURBANCE BY HARMFUL FACTORS

1963

by B. N. Klosovskii
translated from the Russian
and edited by B. Haigh
275 pp., 53 figs., 15 tabs.

Pergamon Press
Oxford-London-New York-Paris
Price: 70 s.

Professor Klosovskii is head of the Department of brain development, Institute of Paediatrics, Academy of Medical Science, Moscow. The book, first published in Russian in 1960, presents the views held, and the original work carried out by him and members of this team. Fourteen authors have contributed to the book. It is of particular significance to paediatricians, obstetricians, and neuropathologists, but may be of interest to others working on normal and abnormal brain development in man and other mammals.

The book is in two parts. Part I, "The normal development of the brain", opens with a chapter by Klosovskii entitled "Fundamental facts concerning the stages and principles of development of the brain and its response to noxious agents". Three other chapters deal with the development of the vascular system of the brain (vaso-capillary network of the brain, vascular network on the surface of the brain and spinal cord), the cerebro-spinal fluid system, and the development of the vestibular and auditory receptor systems. Part II, entitled "Disturbance of the development of the brain as a result of the action of harmful factors", contains five chapters dealing with the influences on the developing brain of such factors as asphyxia, the maternal endocrine system, chemical and physical factors, and prematurity and birth trauma. The sixth and final chapter discusses the compensatory and regenerative properties of the brain.

The illustrations consist mainly of photomicrographs. There is a bibliography of 25 pages and a short alphabetical index.

19. FOETAL AND NEONATAL PATHOLOGY
2nd ed., 1963

by J. E. Morison
538 pp., 128 figs.

Butterworths
London
Price: 100 s.

The first edition of this book appeared in 1952. Since it deals almost exclusively with the human species, it is mainly of importance to members of the medical profession. The enormous amount of literature that has appeared in the last decade has necessitated the almost complete re-writing of the book for this new edition.

The book is in three parts, the first of which is entitled "Disturbances of pre-natal life" (8 chapters, 175 pages). This includes a short chapter on congenital abnormalities, mainly discussing general principles (e.g. the interplay of heredity and environment). Two other chapters discuss such generalised anomalies as asymmetry, double monsters, teratomas and embryomas. However, the majority of the more localised anomalies are discussed in part II, entitled "Adaptation to extra-uterine existence" (7 chapters, 245 pages). Parts I and II further deal with numerous aspects of abnormal foetal and neonatal physiology. Finally part III deals with "Infections in foetal and neonatal life" (5 chapters, 97 pages).

Throughout the book extensive bibliographies are provided. Literature in languages other than English is only exceptionally quoted. The book is well-illustrated, and is concluded by an alphabetical index.

20. LES ALTÉRATIONS DE LA MEIOSE
CHEZ LES ANIMAUX PARTHÉNOGÉNÉTIQUES
1964

by M. Narbel-Hofstetter
163 pp., 112 figs.
(paper-bound)

Springer-Verlag
Wien
Price: \$ 15.75

This monograph forms part of "Protoplasmatologia", Handbuch der Protoplasmaforschung. This handbook consists of a large number of monographs which are issued singly and are obtainable separately. The present monograph forms part of Volume VI (Nuclear and cellular division), part F (Meiotic chromosomes).

The subject matter of the book is highly specialized. It is concerned almost entirely with the behaviour of chromosomes, and is consequently mainly of interest to cytologists. However, those who are interested in aberrant types of oogenesis and early development occurring in nature, will find in it a useful, rigorously classified survey of a particular class of aberrations from the normal pattern, viz. those in which parthenogenesis is accompanied by anomalies in the behaviour of meiotic chromosomes or of the products of meiosis. Those instances where parthenogenesis follows upon normal meiosis are not treated in the book.

The book is in two parts. The first part presents the cytological facts. It has two sections, the first of which deals with aberrations in the maturation divisions and in the behaviour of their products, while the second treats true ameiotic parthenogenesis, in which meiotic prophase is highly abnormal or

altogether missing. The second part of the book is a synthesis of the data described, illustrated with numerous original diagrams. It also deals with the genetical consequences of the various meiotic aberrations combined with parthenogenesis.

Among the numerous species treated in the book are representatives of the Plathelminths, Nematodes, Oligochaets, Rotifers, Molluscs, Crustaceans, and Insects.

The book is illustrated with numerous figures which are partly taken directly from the literature, and partly carefully redrawn. The book is concluded by a bibliography and a list of genera and species.

21. PREGASTRULATIE EN GASTRULATIE DER VOGELKIEM
 morfologische en experimentele studie
 (Pregastrulation and gastrulation in the avian embryo,
 a morphological and experimental study)

1962

by L. Vakaet
 244 pp., 54 figs., 12 tbs.

Arscia Uitg. N.V.
 Brussel

This monograph, written in Dutch, embodies the results of the author's extensive re-investigation of pregastrulation and gastrulation in the avian embryo. The work was carried out mainly on chick and duck material in stages ranging from before the appearance of the area opaca till the oldest pre-somite stage. An original series of stages was established which is more detailed than that of Hamburger and Hamilton.

The results fall into three categories, viz. 1) Histological and histochemical observations; 2) Observations *in vivo* with or without vital staining; 3) Experimental investigations *in ovo* (splitting of the blastoderm in various ways) and *in vitro* (culture of isolated germ layers, culture of germ layers rotated with respect to one another, culture of fragments of the blastoderm and the primitive streak). There is an extensive discussion, in which the concept of "morphogenetic potential" (Dalcq and Pasteels) plays an important role, and in which presumptive maps are proposed for the various stages which differ rather much from the ones that are currently accepted.

The work is concluded by rather brief summaries in Dutch, French, and English. It is illustrated with line drawings and photomicrographs.

Without wishing to debase his own mother tongue, the reviewer is inclined to regret that this work, which is certainly of interest to many workers who cannot read Dutch, has not been written in one of the congress languages. It is to be hoped that a translation will appear soon.

22. THE CYTOPLASM IN HEREDITY

1964

by D. Wilkie
 Methuen's Monographs
 on Biological Subjects
 115 pp., 18 figs.

London: Methuen & Co Ltd.
 New York: John Wiley & Sons Inc.
 Price: 16 s.

So far an up-to-date synthetic account of cytoplasmic inheritance and its

implications for the problem of differentiation was not available. The present concise monograph was written primarily for advanced undergraduate students. The field is not treated exhaustively, but the various aspects of the problem are illustrated with appropriate examples from a variety of organisms. Due attention is given to modern biochemical work and the theoretical possibilities opened by it. The book seems well suited for a rapid orientation in the field, and may provide fruitful ideas to those interested in differentiation and somatic inheritance.

After a brief introduction stating the problem, the first two chapters deal with the somatic inheritance of mitochondria, chloroplasts, and centrioles. The next chapter deals with episomes and episome-like bodies, and other similar cytoplasmic particles. Then follows a chapter treating enzyme-induction and other aspects of cytoplasmic control of cell function. The final chapter deals with nucleo-cytoplasmic interactions and problems of differentiation. It contains, among other things, sections on enucleation and nuclear transplantation in amoebae, algae and amphibia, and a brief section on maternal effects.

The book is adequately illustrated. The bibliography is selective rather than exhaustive, consisting mostly of very recent titles. The combined author and subject index is rather short.

23. LE DÉVELOPPEMENT DU VIVANT PAR LUI MÊME 1963

by P. Wintrebert
455 pp., 68 figs.
(paper-bound)

Masson et Cie.
Paris

It is difficult to review this book briefly on account of the highly theoretical and often speculative nature of its contents. We will therefore mainly restrict ourselves to a brief analysis of the table of contents.

The book opens with a theoretical introduction on "epigenesis" versus "preformation". About half of the book is taken up by two extensive chapters dealing with the author's own morphological and experimental studies and interpretations concerning the development of *Discoglossus pictus* and *Scylliorhinus canicula*. The remaining chapters are devoted to theoretical discussions of development, to a discussion of contemporary theories and methods of causal embryology, and to the application of the author's theories to other fields of science and philosophy.

The bibliography of the book is restricted to books, and to publications of the author. Further very sparse references are given in footnotes throughout the text. There is a short alphabetical index. All illustrations are taken from works of the author.

The book is written in a very subjective and often very polemical style. In his definitions, interpretations and conclusions the author is in almost continuous conflict with nearly all contemporary writers on causal embryology, who are characterised throughout as "preformationists". The author's definition of "epigenesis" is clearly correlated with his neo-Lamarckian view of evolution and development, which, among other things, entails strong emphasis on the role of the cytoplasm over that of the nuclear genes.

24.

DELAYED IMPLANTATION

Editor: A. C. Enders
 published for William Marsh Rice Univ.
 318 pp., 30 figs., 43 pls., 51 tbs.

Univ. of Chicago Press
 Chicago, Ill., and London
 Price: \$ 8.50

The topic of this symposium was a rather special one. It will appeal particularly to those interested in mammalian reproduction, ovum implantation and early embryology (more particularly the phenomenon designated as "embryonic diapause"). The symposium was held at Rice University, Houston, Texas, in January 1963, and had about 60 speakers and participants. The 19 papers presented range in subject from surveys of delayed implantation in various mammals, through laboratory studies of induced delay of implantation, to studies of implantation as such. Special attention was given to endocrine aspects of implantation. Two papers deal with electron microscopy and biochemistry of implantation respectively.

The discussions following the papers are also recorded. The book is concluded by a summary of the symposium by E. C. Amoroso. The book is well-printed and adequately illustrated. It has an alphabetical index but lacks a list of participants and an author's index.

Contributors: Baevsky (Moscow), Canivenc (Bordeaux), Deanesly (Cambridge), Ealey (Clayton, Vict., Austr.), Enders, A.C. (St. Louis, Miss.), Enders, R.K. (Swarthmore, Pa.), Glenister (London), Harrison (London), Lutwak-Mann (Cambridge), Mayer (Bordeaux), Nelson (New York), Noyes (Nashville, Tenn.), Nutting (Chicago, Ill.), Sharman (Canberra, A.C.T., Austr.), Shelesnyak (Rehovoth), Tyndale-Biscoe (Canberra, A.C.T., Austr.), Ward-Orsini (Madison, Wis.), Wimsatt (Ithaca, N.Y.), Wright (Missoula, Montana).

25.

CELL DIFFERENTIATION

1963

Editor: G. E. Fogg
 Symposia Soc. Exper. Biol., nr. XVII
 404 pp., 103 figs., 49 pls., 28 tbs.

Cambridge Univ. Press
 Cambridge
 Price: 60 s.

This volume embodies the papers read at the 17th Symposium of the Society for Experimental Biology, held in Edinburgh in September 1962. The editor states in his preface that the topic of the Symposium "has been one to which zoologists have perhaps paid more attention in recent years than have botanists. Nevertheless, studies on the differentiation of plant cells are progressing rapidly and it was felt that it might be profitable at this stage to give some preference to contributions from this field when arranging the programme." Indeed, of the 20 papers recorded, 9 deal with higher plant tissues, 6 with lower plants and unicellular organisms (*Neurospora*, slime molds, *Acetabularia*, *Micrasterias*, *Chlorella*, *Naegleria*), and the remaining 5 with animal cells and tissues (molluscs, amphibians, and vertebrates in general). The papers describe recent work on physiological, biochemical, genetical and ultrastructural aspects of differentiation in single cells, cell groups and tissues, including some studies on cell division and growth regulation. The discussions of the Symposium are not recorded in the book.

The book is very well printed and illustrated, and includes a large number of photomicrographs and electronmicrographs. It is concluded by author and subject indexes.

Contributors: Blackler (Genève), Bonner (Princeton, N.J.), Brown (Edinburgh), Deuchar (London), Elsdale (Edinburgh), Fischberg (Genève), Haemmerling (Wilhelmshaven), Henshaw (Swansea), Heslop-Harrison (Birmingham), Heyes (Edinburgh), Jones (Edinburgh), Leech (Austin, Tex.), McLoughlin (Cambridge), Mollenhauer (Austin, Tex.), Northcote (Cambridge), Raven (Utrecht), Setterfield (Ottawa, Canada), Srb (New York), Street (Swansea), Tamiya (Tokyo), Torrey (Cambridge, Mass.), Waddington (Edinburgh), Whaley (Austin, Tex.), Willmer (Cambridge), Wright (London).

26. BIOLOGICAL ORGANIZATION AT THE CELLULAR AND SUPERCELLULAR LEVEL

1963

Editor: R. J. C. Harris
261 pp., 66 figs., 17 tbs.

Academic Press
London and New York
Price: 60 s.

This book embodies the proceedings of a symposium organised at Varenna in 1962 by Prof. G. Montalenti on behalf of UNESCO. The symposium was the natural successor to that organised by Prof. C. H. Waddington on behalf of UNESCO in Edinburgh in 1957 ("Biological organisation, cellular and sub-cellular", reviewed in the Supplement to the eighth issue, 1960, p. 38). However, this time an almost entirely different group of participants was selected, so that the two symposia complement each other well.

The symposium had forty participants from eleven different countries. Sixteen of them were speakers and the others took part in the discussions. No particular emphasis was placed on biochemical aspects. However, the recently developed models of gene function in bacteria (Jacob and Monod) played an important role in the symposium.

The book contains 13 papers and a summarising lecture. Papers of particular interest to embryologists are those on the kinetic structure of organisms (Kacser), on nuclear differentiation (Fischberg and Blackler), on oriented cell movements in embryogenesis (DeHaan), on the role of nucleic acids in development and differentiation (Brachet), on specific inductive substances (Tiedemann), and on the transmission of information during primary induction (Saxén).

Most papers are followed by group discussions, which are usually not very extensive. The book is adequately illustrated and is concluded by an author index.

Contributors and participants: Attardi (Gif-sur-Yvette), Barigozzi (Milano), Becker (Heiligenberg), Blackler (Genève), Brachet (Bruxelles), Buzzati-Traverso (Napoli), Cavalli Sforza (Parma), Ceppellini (Torino), D'Amelio (Palermo), De Carli (Napoli), DeHaan (Baltimore, Md.), Di Mayorca (Milano), Di Pasquale (Milano), Elkholy (Cairo), Fischberg (Genève), Foulds (London), Ghini (Milano), Hadorn (Zürich), Harris (London), Jacob (Paris), Kacser (Edinburgh), Kepes (Paris), King (New York), E. Klein (Stockholm), G. Klein (Stockholm), Koopmans (Groningen), Levi Montalcini (Roma), L'Heritier (Gif-sur-Yvette), Magni (Pavia), Montalenti (Roma), Monod (Paris), Mühlbock (Amsterdam), Nanney (Urbana, Ill.), Ohanesian (Gif-sur-Yvette), Plus (Gif-sur-Yvette), Ranzi (Milano), Reverberi (Palermo), Saxén (Helsinki), Scarano (Napoli), Sermonti (Roma), Tiedemann (Heiligenberg), Tiedemann-Waechter (Heiligenberg).

27. CELLULAR MEMBRANES IN DEVELOPMENT

1964

Editor: M. Locke

22nd Symp. Soc. Study of Developm. and Growth
382 pp., 271 figs., 16 tbs.Acad. Press
New York and London
Price: \$ 12.—

The 22nd Growth Symposium, of which this volume constitutes the report, was held at Storrs, Connecticut, in June 1963. The importance of its topic is highlighted by the editor in the first sentence of his brief summary of the symposium which is printed as a Preface: "In the recent revolution in our knowledge of the organization of living systems the discovery of the ubiquity of membranes, all with a remarkably constant structure, ranks in importance with the finding that nucleic acids are the hereditary material." It is therefore appropriate that the first contribution should be a paper by J. D. Robertson concerning his "unit membrane concept", in which the unit membrane is defined as a bimolecular leaflet with the outer polar ends of the phospholipid molecules covered by protein films. The hypothesis is defended that all membrane systems in the cell are topologically continuous, at least during their genesis. Robertson's paper is followed by a paper by Th. E. Thompson on the biophysical properties of artificial bimolecular phospholipid membranes. The remaining 8 papers discuss recent work on membranes and their genesis and behaviour in a variety of biological objects ranging from bacteria to rat liver cells. Much of this work is of course based on electron microscope studies. In the interest of our readers the following papers may be specifically mentioned: 1) The dynamics of cytoplasmic membranes during development (in the corn root tip) (Whaley et al.); 2) Cellular membranes in oogenesis (Beams); 3) The membranes of the fern egg (Bell); 4) Role of the gamete membranes in fertilization (Colwin & Colwin); 5) The problem of adhesive selectivity in cellular interactions (Steinberg). In the last-mentioned paper a hypothesis is advanced to account for the reactions of cells of different types when mixed in tissue culture; this hypothesis is based on the idea of solely quantitative differences in the number of adhesive sites on the cell membranes.

The discussions of the symposium are not recorded. The book is well-printed and well-illustrated. Much of the illustrative material consists of electron micrographs. The book is concluded by author and subject indexes.

Contributors: Beams (Iowa City, Iowa), Bell (Zürich), A. L. Colwin (Flushing, N.Y.), L. H. Colwin (Flushing, N.Y.), Kephart (Austin, Texas), Laties (Los Angeles, Calif.), Mollenhauer (Austin, Texas), Moulé (Villejuif), Nickerson (New Brunswick, N.J.), Robertson (Belmont, Mass.), Steinberg (Baltimore, Md.), Thompson (Baltimore, Md.), Whaley (Austin, Texas).

28. REGENERATION

1962

Editor: D. Rudnick

20th Symposium of the Society for
the Study of Development and Growth
272 pp., 161 figs.The Ronald Press Company
New York

This Symposium report was not available earlier, but is considered important enough still to be reviewed briefly in this Supplement. The symposium was held in Williamstown, Mass. in June 1961. Of the eight contributors, six were

from North America, and two from Europe. Their papers are reproduced without the discussions following them. Three papers discuss the "classical" amphibian limb and eye, studied with modern methods (Hay, Reyer and Rose). Three others deal with invertebrate animals (Rasmont: gemmulation in sponges; Burnett: maintenance of form in *Hydra*; Wolff: planarian regeneration). The inclusion of two papers on regeneration and morphogenesis in plants is a most welcome feature (Stonier: regeneration in *Nicotiana*; Steeves: morphogenesis in isolated fern leaves).

The book is well-illustrated and contains an alphabetical index.

Contributors: Burnett (Cleveland, Ohio), Hay (Boston, Mass.), Rasmont (Brussels), Reyer (Morgantown, W.Va.), Rose (New Orleans, La.), Steeves (Saskatoon, Sask.), Stonier (New York), Wolff (Paris).

29. REGENERATION AND WOUND HEALING 1964

Editor: Gy. Szántó
Symposia Biologica Hungaria Vol. 3
148 pp., 93 figs.

Akadémiai Kiadó
Budapest

The Symposium of which this book constitutes the report was held in Budapest four years ago (November 1960). Judging from the editor's preface its original title was "Symposium on Wound Healing", and this is clearly reflected in the table of contents. The Symposium had 22 participants, 18 of which were Hungarians, the other four coming from Bulgaria, Poland and Russia. Almost all participants work in medical or paramedical institutes. Of the nine papers presented, six were given by Hungarian speakers. The papers and the discussions following them are recorded in this book in good English. All papers are preceded by a synopsis and concluded by a bibliography.

Only two of the papers deal with body and organ regeneration in the commonly accepted sense of the word. Most of the others deal with wound healing (mainly in mammals) under normal and pathological conditions, and with its clinical implications. One paper on plant tissue growth *in vitro* seems entirely out of place in the context of the Symposium.

The first and longest paper is by B. P. Tokin (Leningrad) and is entitled "Regeneration and somatic embryogenesis". It may be regarded as a synopsis of the author's book of the same title which appeared in Russian in 1959. It discusses, against a broad taxonomic and evolutionary background, the relations between regeneration and asexual reproduction, and places the whole problem in a theoretical framework. Moreover, numerous original experiments by the author and his associates, in a variety of organisms, are reported.

Of the other papers only those which appear of specific interest to our readers will be mentioned. J. Niwelinski (Krakow) treats the activity of intracellular enzymes in regenerating newt limbs, and R. Tsanev (Sofia) the role of nucleic acids in wound healing after various types of mechanical injury. Two papers report on comparative studies on wound healing and skin carcinogenesis with regard to tissue dynamics and tonofibrillar structure. Another paper deals with regional differences in the rate of wound healing along the body axis.

The book is well printed and adequately illustrated. There is no alphabetical index.

Contributors: Bálint (Budapest), Faludi (Budapest), Juhász (Budapest), Kellner (Budapest), Krompecher (Debrecen), Niwelinski (Krakow), Peer (Budapest), Sugár (Budapest), Szántó (Budapest), Székely (Budapest), Szónyi (Budapest), Szodoray (Debrecen), Tokin (Leningrad), Tsanev (Sofia).

30. L'ORIGINE DE LA LIGNÉE GERMINALE
chez les Vertébrés et chez quelques groupes d'Invertébrés
1964

Editor: Et. Wolff
372 pp., 150 figs.

Hermann
Paris
Price: 60 N.F.

This book is the outcome of a series of seminars organised in the course of 1962 by Prof. Et. Wolff at the Collège de France, Paris. A number of Parisian investigators as well as zoologists from other French and European centres and one American specialist were invited to give lectures at the Collège de France. All lecturers were outstanding specialists in the field. Between them they have covered the topic more or less completely, particularly as far as the vertebrates are concerned. The lectures are united in this volume, together with the seminar discussions following them, in which the participants were mainly Parisian scientists.

The book is opened by a general lecture by P. Brien (Brussels) in which the problem of the germ line in invertebrates is discussed in connection with both sexual and asexual reproduction, and with regeneration and the question of dedifferentiation. Then follow lectures on the germ line in various groups of the animal kingdom: sponges, flatworms, arthropods, echinoderms, fishes, urodeles, anurans, birds, reptiles, and mammals. Two lectures deal with embryomas and teratomas in mammals and the human, as related to the germ line problem. The book is concluded by a lecture by Et. Wolff, in which he discusses the continuity of the germ line, and the much-debated question of the induction of stable heritable changes of the germ cells by the injection of DNA, proteins and other substances.

The book is printed in photo-offset. It contains numerous illustrations, of which the photographs are not always reproduced satisfactorily. Alphabetical and author indexes are lacking.

Contributors: Bounoure (Strasbourg), Brien (Brussels), Charniaux-Cotton (Gif-sur-Yvette), Delavault (Orsay), Gaillard (Evreux), Lender (Orsay), Nieuwkoop (Utrecht), Pasteels (Brussels), Simon (Rabat), Stéphan-Dubois (Strasbourg), Stevens (Bar Harbor, Maine), Tuzet (Montpellier), Vivien (Strasbourg), Wolff (Nogent-sur-Marne).

31. EFFECTS OF DRUGS ON THE FETUS
1963

Proceedings of the European Society
for the Study of Drug Toxicity, Vol. I
International Congress Series, no. 64
58 pp., 21 figs., 14 tbs.
(paper-bound)

Excerpta Medica Found.
Amsterdam - New York -
London - Milan - Tokyo
Price: \$ 3.—

This booklet contains the four papers presented in the first symposium organised by the newly established European Society for the Study of Drug

Toxicity. The symposium took place in Paris in January 1963.

The authors and titles of the papers are as follows: J. W. Millen and D. H. M. Woollam (Cambridge) — Congenital malformations of the skeletal system; A. Giroud (Paris) — Conditions de la tératogénèse; A. Jost (Paris) — Hormones et tératogénèse; G. F. Somers (Liverpool) — The foetal toxicity of thalidomide. The discussions following the papers are not recorded.

32. RECENT ADVANCES IN THE EMBRYOLOGY
OF ANGIOSPERMS
1963

Edit.: P. Maheshwari
467 pp., 113 figs.

Internat. Soc. of Plant Morphologists
Univ. of Delhi

This is a collaborative treatise written by 14 contributors. Seven of these work in the Department of Botany, University of Delhi, India, whereas the other seven are from various countries other than India.

Experimental plant embryology is still in a less advanced state than experimental animal embryology. Much of the contents of the book is therefore of a purely descriptive or purely physiological nature. However, at least three of the fourteen chapters may be of interest to animal embryologists, viz. "History and present status of plant embryology" (Maheshwari, India); "Artificial culture of embryos" (Sanders and Ziebur, U.S.A.) and "Plant embryos as reaction systems" (Wardlaw, England). The latter chapter gives a brief synopsis of some essential elements of a future theory of plant embryogenesis, and indicates the types of experiments which will be needed in the near future.

Contributors: Battaglia (Bari), Chopra (Delhi), Crété (Paris), Johri (Delhi), Kapil (Delhi), Maheshwari (Delhi), Nitsch (Gif-sur-Yvette), Rangaswamy (Delhi), Sachar (Delhi), Sanders (Cambridge, Mass.), Steffen (Braunschweig), Vasil (Delhi), Wardlaw (Manchester), Ziebur (Binghamton, N.Y.).

33. LES PROBLÈMES DU DÉVELOPPEMENT
DES CARPOPHORES DES AGARICALES
ET DE QUELQUES GROUPES VOISINS
1963

by A. F. M. Reijnders
467 pp., 2 figs, 55 pls. and 1 table of 76 pp.

Dr. W. Junk
Den Haag
Price: \$ 17.00

This monograph is concerned with the morphogenesis of the fruiting bodies of a restricted group of mushrooms (Agaricales, Basidiomycetae). The very thorough work can only be briefly announced here. It is based on the comparative study of 234 species. The first half of the book is purely descriptive in content. The second half consists of a discussion of the physiological and phylogenetic principles of development in these organisms. This part also reports on experimental results (influence of external factors, regeneration, transplantation, histochemical determinations). This part is concluded by an extensive English summary.

The book is illustrated with numerous photomicrographs. It contains a large bibliography and indexes to authors, taxonomic names, and terms.

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