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Annual issue of the Hubrecht Laboratory  
seat of the  
„Institut International d'Embryologie”  
(Embryological section of the I.U.B.S)



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## INTRODUCTION

As we mentioned in the first edition, the foundation of a General Embryological Information Service was an experiment on a large scale. Now in publishing the second issue we can state that this international service really meets with general approval. We received so many enthusiastic letters from all over the world and, moreover, so many institutes, not yet represented in the first issue, offered their cooperation that we feel justified to continue this service.

Comparing the first and the second issue it will be evident that on the one hand the greater part of the investigations in elaboration have not been changed, but that on the other hand a rather important number of investigations have been completed and an almost corresponding number of new investigations have been started. It is the lastmentioned group which is of special importance, as it demonstrates the progress of the embryological science and will, therefore, highly interest every embryologist.

We have seriously weighed the desirability of an annual edition of the G.E.I.S. taking into consideration all the various aspects of this question. A survey of the current scientific work every two or three years only would mean that in the course of such a period the greater part of the investigations would have been completed already for a shorter or longer time. One would moreover be ignorant of the new researches, started in the course of this period. In such a way the G.E.I.S. would not answer its purposes. An annual survey will therefore be necessary.

It might, however, suffice to mention only those investigations that have been completed in the course of a year, and those started during this period, thus reducing the size of the annual publication considerably. Such a procedure would, however, not give a real reduction in work and even not a marked decrease in price, as the administrative work, which will not be changed, represents the main source of expenses. The suitability of the G.E.I.S. would however decrease markedly, as one would be compelled always to consult a volume and its supplements together. We therefore decided to publish annually a complete survey of the current scientific work.

Surveying the list of institutes included in the second issue, we can state that the list has been extended considerably, especially as regards the United States and the far East, whereas unfortunately the central part of Europe has been seceded for the greater part. The inclusion of the Japanese and Chinese embryological institutes forms an important contribution to its completeness. A small number of institutes, however, still remains, which we could not yet interest in our common enterprise. We ask the collaborators to support our work by discussing this project with members of the staff of those institutes.

### *Practical arrangements*

We have united the alphabetical list of names and addresses and that of names with subjects in preparation in order to get a clearer and more suitable form of publication.

The list of institutes with composition of scientific staffs has now been

printed in two columns, which gives an important saving of space without a loss of clearness.

We have moreover changed the chapter „list of subjects with names of investigators” by omitting the text of the subjects; thus reducing this chapter to a list of indices only. This text has been printed in two columns. We hope that this form will still fulfil all requirements of clearness and suitability.

We have tried to classify the subjects in small units in order to simplify the consultation of this rubric. The various co-workers belonging to a team have been listed in alphabetical order.

Your attention is again asked for the chapter „short notes and references to new technical methods”, which we shall have to omit in future in case of lack of sufficient interest (Cf. the introduction in the first issue).

We wish to draw your attention to the opening of the new chapter, in which recently appeared text-books will be reviewed (cf. the text of chapter *h*), and to the new suggestion of giving an annual survey of the embryological literature published in the preceding year (cf. the text of chapter *i*).

The number of subscriptions taken by institutes and individual workers has markedly passed the minimum number necessary for a safe financial base. We can therefore announce with great pleasure that we are able to reduce the annual subscription to 22,75 florins (dutch currency) which at the present moment corresponds to \$ 6.—.

We are trying to develop a system as simple as possible for the collecting of the data for the G.E.I.S., which, on the one hand, will considerably ease the collaborator's work, and, on the other, will restrict the administrative work at the Hubrecht Laboratory to a great extent. Next year we will try to complete the collecting of data in the period from April to July, hence before the beginning of the vacations, so that we can prepare the new edition directly after the summer holidays. As we will in future use the same system of classification as developed in the second issue, we shall send you only the text of the second edition and a form for new subjects in order to reduce the number of forms and circulars. We would like to emphasize the request to return proofs and forms at your earliest convenience, thus saving us a great deal of work and time and sparing yourself the unpleasantness of being reminded again.

P. D. NIEUWKOOP.

## LIST OF NAMES AND ADRESSES

## with Subjects in Preparation

(alphabetical order)

- ABELOOS, M. Prof. — Lab. de Zool. gén. de la Fac. des Sci. et Stat. de marine d'Endoume (Marseille), Place Victor Hugo, MARSEILLE, France.  
(no data received over this year)
- ABERCROMBIE, M. M.A., B.Sc. — Dept of Embryol., Univ. Coll. London, Gower Str., LONDON W.C. 1, England.
- a. A study of artificially produced duplicitas anterior. *Gallus domesticus* (*Aves*) (in collaboration with Mrs M. R. BELLAIRS)
  - b. Transplantation experiments on chick blastoderm in tissue culture. (*Aves*)
  - c. Cinematographic study of cell relations in tissue culture. *Gallus domesticus* (*Aves*)
- ADAMSTONE, F. B. Ph.D., Prof. — Dept of Zool., Univ. of Illinois, URBANA, Ill., U.S.A.
- a. Development of amnion in the chick. *Gallus domesticus* (*Aves*)
- ADELMANN, H. B. Dr, Prof. — Dept of Zool., Cornell Univ., ITHACA, N.Y., U.S.A.  
(no data received)
- ALDEN, R. H. Ph.D., Prof. — Univ. of Tennessee, Fac. of Biol. Sci., Med. Div., MEMPHIS 3, Tenn., U.S.A.
- a. Study of egg transport and implantation; early development of trophoblast; embryo-maternal relationships during nidation. *Mus* (*Mammalia*)
- ALEXANDROWICZ, St. Dr — Zakład Anat. Porównawczej U.J. im. H. Hoyer, KRAKOW, św. Anny 6, Poland.
- a. The accumulation of fat in the subcutaneous tissue of pig embryos. *Sus* (*Mammalia*)
- ALGARD, F. T. — Dept of Biol. Sci., Stanford Univ., STANFORD, Cal., U.S.A.
- a. A study of the cytology and migratory behavior of neural crest melanoblasts utilizing phase microscopy. (*Amphibians*)
- ALLANSON, Mrs M. Ph.D. — Dept of Zool., King's Coll., Strand, LONDON W.C. 2, England.
- a. Seasonal growth of reproductive organs of some South African mammals. *Tatera afra* and *T. brantsi*.
- ALOISI, Miss G. Ph.D. — Ist. di Anat. comp., Via Belmeloro 8, BOLOGNA, (103), Italia.
- a. Effects of egg extracts on tumours induced by 1.2. benzo-pyrene in *Anura. Rana esculenta*
- ALTSCHUL, R. M.D., Prof. — Dept of Anat., Univ. of Saskatchewan, SASKATOON, Canada.  
(no data received over this year)
- ALVAREZ GUTIÉRREZ, Miss J. B.S. — Dept de Histol. y Embryol., Fac. de Med., MONTEVIDEO, Uruguay, S. América.
- a. Cytochrome oxidase in the embryo. *Chick* and *Pig* (*Aves* and *Mammalia*) (together with the related work of W. BUNO and R. GONZALEZ MARINO)

- AMPRINO, R. M. M.D., Prof. — Inst. of human Anat., Corso Massimo d'Azeglio 52, TORINO, Italy.
- Study of the effect of the removal of the anlage of the rhombomesencephalon on morphogenesis of the extrinsic eye muscles. *Chick*
  - Qualitative and quantitative development of cornea and sclera in *chick* embryos following removal of parts of the eye anlage. (*Aves*)
  - Regulative and regenerative capacities of the primary optic vesicle in *chick* embryos. (*Aves*)
- ANCEL, P. Dr, Prof. (Emer.) — Boulevard de Sébastopol 102, PARIS, France.
- ANDERS, G. Dr Phil. — Zool.-vergl. Anat. Inst., Naturw. Fak., Univ. Zürich, Künstlergasse 16, ZÜRICH 6, Schweiz.
- Developmental physiology and genetics of the lozenge alleles in *Drosophila melanogaster*. (*Insecta*)
- ANDERSON, Miss I. L. B.A., M.A. — Dept of Biol., Brown Univ., PROVIDENCE 12, R.I., U.S.A.
- An X-ray study of bone development in *Rana clamitans* during metamorphosis. (*Amphibia*)
- ANDRES, G. Dr — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- Fate of embryonic cells after dissociation and reinjection into embryos. *Gallus domesticus* (*Aves*) (in collaboration with P. A. WEISS)
- ANNEZ, Ch. — Lab. of Anat., Fac. of Med., Univ. of Gent, Bylokekaai 1, GENT, Belgium.
- Experimental and cytochemical embryology. *Passalurus ambiguus* (*Nematoda*)
- ARIËNS KAPPERS, J. M.D., Prof. — Anat.-Embryol. Lab. der Rijks Univ., Oostersingel 69, GRONINGEN, Holland.
- Function of the paraphysis cerebri in *Amblystoma mexicanum*. (*Amphibia*)
  - Development and function of the paraphysis in *Lacertilia*. *Lac. muralis*, *Lac. viridis* and *Lac. vivipara* (*Reptilia*)
  - Embryological development of the roof of the fourth ventricle. *Amblystoma mexicanum* (*Amphibia*)
  - Development of the meninges and its connection to the circulation of cerebrospinal fluid. *Amblystoma mexicanum* (*Amphibia*)
  - The development of the brain of *Xenopus laevis*. (*Anura*, *Amphibia*) (Normal Table)
- ARKEI, G. A. van — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- Analysis of lithium action. *Limnaea stagnalis* (*Gastropoda*) (in collaboration with Miss E. v. d. BROEK, Mrs A. S. DUYKER—de BEER, Miss W. H. T. van HEESCH, J. C. N. KOK, J. W. KUIPER, Miss R. P. van LOO, E. D. NIJENHUIS, J. E. H. SMIT and W. L. van UTRECHT).
- ARMSTRONG, P. B. B.S., M.D., Prof. — Dept of Anat., School of Med., State Univ. of New York, SYRACUSE 10, N.Y., U.S.A.
- Function in the developing liver. *Amblystoma punctatum* and *Ameiurus nebulosus* (*Amphibia*)
- AROSIO, G. Dr — Inst. di Zool. e Anat. comp., Via Celoria 10, MILANO, Italia.
- Myosin. (*Vertebrata*)

- ASSENMACHER, I. — Inst. d'Embryol. et de Morphol. expér., Fac. de Méd., 1, Place de l'Hôpital, STRASBOURG, (Bas-Rhin), France.
- Development of gonads, hypophysis and hypothalamus in *birds*. *Chick, duck and pigeon* (in collaboration with J. BENOIT)
- ATLAS, M. Ph.D., Prof. — Dept of Biol., Yeshiva Univ., 186th Str. and Amsterdam Ave, NEW YORK 33, N.Y., U.S.A.
- Conditions of maturation of the egg and ovulation. *Rana pipiens* (*Amphibia*)
  - Nature of the yolk and its changes in development. *Gallus domesticus* (*Aves*)
- AUER, J. M.D., D.M.Sc., Prof. — Dept of Anat., Fac. of Med., Univ. of Ottawa, OTTAWA, Canada.  
(no data received over this year)
- AUSTIN, C. R. M.Sc., B.V.Sc. — Commonwealth Sci. and Industr. Res. Org., McMaster Anim. Health Lab., Parramatta Rd, GLEBE, N.S.W., Australia.
- Descriptive and comparative aspects of initial development. Investigation of fertilization and spermatogenesis with phase-contrast microscopy. *Rat* (*Mammals*) (in collaboration with A. W. H. BRADEN)
  - Experimental and developmental morphology of initial development. Chemical and physical factors involved in the sperm penetration of the zona pellucida. *Rat* and *Rabbit* (*Mammals*) (in collaboration with A. W. H. BRADEN)
  - Developmental physiology of fertilization and cleavage. Development of blastocysts and isolated blastomeres after transplantation. Induction of parthenogenesis. Investigations on the external migration of gametes. *Rabbit* (*Mammals*) (in collaboration with A. W. H. BRADEN)
- AUSTOKER, Mrs J. B.Sc. Hon. — Dept of Zool., Univ. of the Witwatersrand, Milner Park, JOHANNESBURG, South Africa.
- The bursa ovarica of *Elephantulus myurus jamesoni*. (*Mammalia*)
- AVEL, M. Dr. Prof. — Fac. des Sci. de Bordeaux, 40, Rue Lamartine, TALENCE (Gironde), France.  
(no data received)
- AVIS, F. — Roscoe B. Jackson Memorial Lab., Box 558, BAR HARBOR, Me, U.S.A.  
(no data received over this year)
- BÄCKSTRÖM, S. A. A. — Wenner-Grens Inst. for exper. Biol., Norrtrullsgatan 16, STOCKHOLM 23, Sweden.
- Morphological studies on lithium-treated developing *sea urchin* eggs. *Psammechinus miliaris* (*Echinodermata*)
- BAFFONI, G. Dr — Ist. di Zool., Univ. di Stato, Viale B. Bartolomeo 1, CAGLIARI, Sardegna, Italia.
- Reaction of nervous cells to periphery. (*Amphibians*)
  - Regeneration of spinal cord. (*Reptiles*)
  - Involution of germinal cells of *Crustaceans*.
- BAGIŃSKI, S. Dr Med., Prof. — Inst. of Histol. and Embryol., Med. Acad., Narutowicza Str. 60, Łódź, Poland.
- Histogenesis of *mammalian* alveolar epithelium. (in collaboration with co-workers)
  - Teratogenic action of acids on developing *chicken* embryos. (*Aves*) (in collaboration with co-workers)

- BAILEY, J. R. — Dept of Zool., Duke Univ., DURHAM, N.C., U.S.A.
- a. Organogenesis of developing *ammocoetes* and changes at metamorphosis. *Ichthyomyzon* (species undescribed). (*Cyclostomata*) (in collaboration with E. C. HORN)
- BAKER, Mrs A. S. M.S. — Dept of Biol., The John Hopkins Univ., Charles and 34th Strs, BALTIMORE 18, Maryland, U.S.A.
- a. Description of factors affecting pigment pattern (such as quantity and distribution of melanin, melanophores, tyrosinase, dopa oxidase and associated substrates and inhibitors) of two genotypes of *Rana pipiens* — the wild, spotted variety (genotype bb) and the non-spotted burnsi mutant (Bb). (*Amphibia*)
  - b. Analysis of factors involved in formation of adult pigment pattern in *Rana pipiens* at the time of metamorphosis. (*Amphibia*)
  - c. The rôle of epidermis and melanophores in the formation of pigment pattern in *Rana pipiens*. (*Amphibia*)
- BAKER, R. C. B.A., M.Sc., Ph.D., Prof. — Dept of Anat., Ohio State Univ., COLUMBUS 10, Ohio, U.S.A.  
(no data received over this year)
- BALINSKY, B. I. Dr of Biol. Sc. — Dept of Zool., Univ. of the Witwatersrand, Milner Park, JOHANNESBURG, South Africa.
- a. The part played by growth and cellular migration in the formation of organ rudiments. *Xenopus laevis* (*Amphibia*) and *Elephantulus myurus* (*Mammalia*)
  - b. Correlations in the development of the branchial region. *Xenopus laevis*, *Bufo regularis*, *Bufo carens* and *Rana angolensis* (*Amphibia*)
  - c. The eye-lens correlation. *Xenopus laevis*, *Bufo regularis*, *Bufo carens* and *Ptychocheilus natalensis* (*Amphibia*)
- BALTZER, F. Dr, Prof. — Zool. Inst. der Univ. Bern, Sahlistr. 8, BERN, Schweiz.
- a. Xenoplastische Chimären, *Triton* — *Bombinator*, *Triton* — *Xenopus*.
- BARAKONA, Miss M. — Dept de Med. Exper. del Servicio Nacional de Salubridad, Av. Irarrázaval 849, SANTIAGO, Chile, South America.
- a. Hormonal interrelations between ovary and hypophysis. Ovarian grafts in the spleen. *Cavia cob.* (*Mammalia*) (in collaboration with A. LIPSCHUTZ, R. IGLESIAS, S. BRUZZONE a. Miss E. MARDONES)
  - b. Influence of steroids on the gonadotrophic function of the hypophysis; and on the follicular development of the ovary. Ovarian grafts in the spleen; with the simultaneous action of steroids absorbed from beneath the skin, or absorbed from the spleen; and other devices. *Cavia cob.* (*Mammalia*) (in collaboration with A. LIPSCHUTZ, R. IGLESIAS, S. BRUZZONE and Miss E. MARDONES)
- BARIGOZZI, C. Dr Sc., Prof. — Ist. di Genet., Via Celoria 10, Univ. di Milano, MILANO, Italia.
- a. Development of tumours in rats. (*Mammals*)
  - b. Melanomes in *Drosophila*. (*Insecta*)
- BARRY, A. Ph.D., Assoc. Prof. — Dept of Anat., Univ. of Michigan, Med. School, 2500 East Med. Bldg, ANN ARBOR, Mich., U.S.A.
- a. Analyses of pressures and velocities in the developing cardiovascular system, specifically, at the present time, the effect of tension and diastolic length on systolic energy of the embryonic myocardium. *Gallus domesticus*, *Sus*, *Homo* (*Higher Vertebrates*)

- BARTH, L. G. Dr, Prof. — Dept of Zool., Columbia Univ., NEW YORK 27 (City), N.Y., U.S.A.  
(no data received)
- BAST, T. H. Ph.D., B.A., Prof. — Dept of Anat., Univ. of Wisconsin, MADISON, Wis., U.S.A.  
a. Embryology and anatomy of the middle and internal ear. *Homo (Mammalia)*
- BATTAGLIA, B. D.Sc. — Ist. di Genet. dell'Univ. di Napoli, Fac. di Sci., Via Mezzocannone 8, NAPOLI, Italia.  
a. Phosphatase distribution in *Amphibian* eggs. *Rana, Bufo (Anura)*
- BATTLE, Miss H. I. Ph.D., Prof. — Dept of Zool., Univ. of Western Ontario, LONDON, Ont., Canada.  
a. Effects of urethane (ethyl urethane) on early developmental processes of *Teleosts*. *Salmo trutta fario, Brachydanio rerio*  
b. A survey of the larval and young *fish* of central lake Erie. (*Teleosts*)  
c. Description of the pelagic eggs and early developmental stages of the *Goldeye*. *Amphiodon alosoides (Teleosts)*
- BATTY, Th. A.B. — Dept of Anat., Univ. of Kansas, Med. School, LAWRENCE, Kan., U.S.A.  
a. Development of all systems of the *toadfish* in relation to behavior. *Opsanus tau (Pisces)* (in collaboration with H. C. TRACY and J. WINBLAD)  
b. Development of the gastro-intestinal tract in the *toadfish* in relationship to its behavior. *Opsanus tau (Pisces)*  
c. Development of the skeletal, blood vascular, and muscular systems in relationship to behavior in the *toadfish*. *Opsanus tau (Pisces)*
- BAUMANN, J. A. Dr, Prof. — Inst. d'Anat., 20, R. École de Méd., GENÈVE, Suisse.  
(no data received over this year)
- BAUTZMANN, H. Dr Med., Prof. — Anat. Inst. der Univ. Hamburg, Schottmüllerstr. 1, HAMBURG 20, Deutschland, (Britische Zone)  
a. Entwicklungsphysiologie der Primitiventwicklung. (*Amphibien*)  
b. Entwicklung des lymphatischen Systems der *Wirbeltiere*.
- BAX, W. A. Dr Med. — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.  
a. Development of the mediastinal connective tissue and the pulmonary ligament. *Rat and Man (Mammals)*
- BAXTER, E. W. B.Sc. — Biol. Dept, Guy's Hosp. Med. School, LONDON S.E. 1, England.  
a. Biology of *Lampreys* (including development and metamorphosis). (*Cyclostomata*)
- BAYLEY, S. T. — M.R.C. Biophysics Res. Unit, King's Coll., Strand, LONDON W.C. 2, England.  
a. Spermatogenesis of *Vivipara vivipara*, studied by classical techniques and by phase-contrast, polarised light, ultra-violet and electron microscopy. (*Gastropoda*) (in collaboration with J. T. RANDALL and E. J. HANSON)  
b. Cytogenesis of *vertebrate* striped muscle, studied in the electron microscope, and with the aid of tissue culture techniques. (in collaboration with J. T. RANDALL and E. J. HANSON)

- BEATTY, R. A. M.A. — Genet. Lab., Anim. Breeding and Genet. Res. Organ., Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- Heteroploidy in *mammals*. Spontaneous heteroploidy — analysis of factors involved. Induced heteroploidy — methods of production. Viability of polyploid embryos. Physiological embryology of polyploid embryos. *Mus musculus* (in collaboration with M. FISCHBERG)
  - Transplantation of *mammalian* embryos. *Mus musculus* (in collaboration with M. FISCHBERG) *caniculus*.
  - Operative techniques on *mammalian* embryos. *Mus musculus* and *Lepus*
- BEAU, A. A. Dr, Prof. — Lab. d'Anat. et d'Histol., Dép. d'Embryol., Fac. de Méd., Inst. Anat., 31, Rue Lionnois, NANCY (Meurthe & Moselle), France.
- Organogénèse du poumon. *Homo (Mammalia)* (en collaboration avec A. DOLLANDER)
- BÉLANGER, L. F. B.A., M.D., M.A., Prof. — Dept of Histol. and Embryol., School of Med., Univ. of Ottawa, OTTAWA, Canada.
- The development of bones and teeth as shown by radio-autographs with the help of radio-phosphorus and radio-carbon. (*Vertebrates*) (in collaboration with C. P. LEBLOND and R. GREULICH from Dept of Anat., McGill Univ., MONTREAL)
- BELLAIRS, A. d'A. M.A., M.Sc., M.R.C.S. — Anat. Dept, London Hosp. Med. Coll., Univ. of London, Turner Str., LONDON E. 1, England.
- Descriptive and comparative embryology of *reptiles* and *mammals*, with special reference to head chondrocranium and other organs.
  - Experimental embryology *Vipera, Natrix, Lacerta, Anguis (Reptilia)* (in collaboration with Mrs M. R. BELLAIRS)
- BELLAIRS, Mrs M. R. B.Sc. — Dept of Embryol., Univ. Coll. London, Gower Str., LONDON W.C. 1, England.
- A study of artificially produced duplicitas anterior. *Gallus domesticus (Aves)* (in collaboration with M. ABERCROMBIE)
  - Experimental embryology. *Vipera, Natrix, Lacerta, Anguis (Reptilia)* (in collaboration with A. d'A. BELLAIRS)
  - Development of the foregut. *Gallus domesticus (Aves)*
- BENAZZI, M. Prof. — Ist. di Zool. e Anat. comp. dell'Univ., Via A. Volta 4, PISA, Italia.
- Fertilization, pseudogamy, cytology and heredity in *Planarians*. Species of *Tricladida*.
- BENAZZI—LENTATI, Mrs G. lib.doc. — Ist. di Zool. e Anat. comp. dell'Univ., Via A. Volta 4, PISA, Italia.
- Fertilization and cytology in *Planarians*. Species of *Dugesia (Tricladida)*
- BENOIT, J. Dr en Méd., Dr ès Sc., Prof. — Inst. d'Embryol. et de Morphol. expér., Fac. de Méd., 1, Place de l'Hôpital, STRASBOURG, (Bas-Rhin), France.
- Development of gonads, hypophysis and hypothalamus in *birds*. *Chick, duck* and *pigeon* (in collaboration with I. ASSENMACHER)
- BENOIT, J. A. A. Agr. d'Anat. — Ecole Nat. Vétér., TOULOUSE, France.
- Transplantations inversées de divers territoires de la zone marginale de la jeune gastrula chez le *Triton* et l'*Axolotl*. (Travail du Laboratoire d'embryologie de la Fac. de Méd. de Bruxelles).  
*Tr. palmatus, Tr. alpestris* et *Amblystoma mexicanum (Amphibia)*



- b. Etude de la cinématique tardive des greffons inversés. *Triton*, *Pleurodèle* et *Axolotl* (*Amphibia*)
- BER, A. Dr, Prof. — Dept of Endocr., Fac. of Med., Med. Highschool of Łódź, Nowotki 137, Łódź, Poland.
- a. The influence of hormones on metamorphosis of *Xenopus laevis*. (*Amphibia*) (in collaboration with A. ORLOWSKI)
- BERG, W. E. A.B., M.S., Ph.D., Prof. — Dept of Zool., Univ. of California, BERKELEY 4, Cal., U.S.A.
- a. Studies in protein metabolism of *amphibian* embryo. II — Free amino acids; III — Peptides; IV — Uptake of radioactive methionine. *Rana pipiens* and *Hyla regilla* (in collaboration with R. M. EAKIN and P. B. KUTSKY)
- BERGE, J. H. ten — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Determination of Li in *amphibian* eggs, treated with LiCl. *Amblystoma* (in collaboration with J. J. BEZEM)
- BERQUIST, H. — Tornblad Inst. for comp. Embryol., Biskopsgatan 7, LUND, Sweden. (from Anat. Inst., GOTHENBURG)
- a. The ontogeny of the diencephalon of *reptiles* and *mammals*.
- BERRILL, N. J. Prof. — Dept of Zool., Mc Gill Univ., MONTREAL, Quebec, Canada.  
(no data received)
- BEZEM, J. J. Ir — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Determination of Li in *amphibian*-eggs, treated with LiCl. *Amblystoma* (in collaboration with J. H. ten BERGE)
- BIJTEL, Miss. J. H. Dr Sc., — Anat.-Embryol. Lab. der Rijks Univ., Oostersingel 69, GRONINGEN, Holland.
- a. Investigations concerning the process of outgrowth of the tail in *Amphibia* with special reference to the rôle of the chorda dorsalis and the tail mesoderm. *Amblystoma mex.*, *Triton taen.* and *Xenopus laev.*
- b. Experiments concerning the factors which determine the normal course of the outgrowing pronephric duct in *Amphibia*. *Amblystoma mex.*, *Triton taen.* and *Xenopus laev.*
- c. Development and phylogenetic origin of the columella auris in *Amphibia*. *Amblystoma mex.*, *Triton taen.* and *Xenopus laev.*
- d. The development of the eye of *Xenopus laevis*. (*Anura*, *Amphibia*) (Normal Table)
- BISS, Frau R. — Abt. für Zoophysiol., Zool. Inst. der Univ., Sahlistr. 8, BERN, Schweiz.
- a. Elektronenoptische Studien über Plasmastruktur des Eies von *Tubifex*. (*Annelida*)
- BLEAKLY, M. C. D.Phil. — Dept of Zool., Univ. of Queensland, George Str., BRISBANE, Queensland, Australia.
- a. Development of the head. *Neoceratodus forsteri*, *Choanichthes (Dipnoi)*
- BLECHSCHMIDT, E. Dr Med., o.ö. Prof. — Anat. Inst. der Univ., Burgstr. 51, GÖTTINGEN, Germany.
- a. Wachstumsbewegungen der Hautorgane beim *menschlichen* Embryo.
- b. Wachstum und Differenzierung der Gliedmaszen beim *menschlichen* Embryo. (*Mammalia*)
- c. Reliefentwicklung des *menschlichen* Kleinhirns. (*Mammalia*)

- BLOOMINGDALE, Mme B. — Lab. d'Embryol., Fac. de Méd., 15, Rue Ecole de Méd., PARIS VIe, France.
- a. Recherches sur les facteurs tératogènes. *Rat (Mammifères)*
- BLOUNT, R. F. B.S., M.S., Ph.D., Prof. — Dept of Anat., Med. Branch, Univ. of Texas, GALVESTON, Tex., U.S.A.
- a. Relations of the hypophysis to development. *Amblystoma (Amphibia)*
  - b. Experimental hypertension and embryonic transplantation of hypophysis. *Amblystoma (Amphibia)*
  - c. Endocrine studies and development, time of beginning function. *Mus musculus (Mammalia)*
- BLUMER, Miss C. — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- a. Development of intrinsic functional differences among brain parts tested by larval deplantation. (*Amphibia*) (in collaboration with P. A. WEISS)
- BLUNTSCHLI, H. Dr, Prof. (Emer.) — Anat. Inst., BERN, Schweiz.
- BODENSTEIN, D. H. F. A. — Med. Div., Army Chemical Center, MARYLAND, Md, U.S.A.
- a. Development of the dorsal fin in *Amblystoma punctatum*; the relation of ectoderm and mesoderm in the process of fin induction. (*Amphibia*)
  - b. The humeral control of growth and metamorphosis in the cockroach *Periplaneta americana*, studied by transplantation and parabiosis experiments. (*Insecta*)
  - c. Physiological mechanisms of hormone actions; the relations of hormones to fat, protein and carbohydrate metabolism in *Periplaneta americana* and *Drosophila* species. (*Insecta*)
- BOEKE, J. Dr, Prof. (Emer.) — Ramstr. 47, UTRECHT, Holland.
- a. Regeneration and development of the central nervous system. (*Vertebrates*)
  - b. The autonomous nervous system. (*Vertebrates*)
  - c. The infundibular organ of *Amphioxus*. (*Urochordates*)
- BOELL, E. J. Ph.D., Prof. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- a. The dissociation of morphological and biochemical development in the central nervous system of *Amblystoma punctatum*. (*Amphibia*) (in collaboration with S. C. SHEN)
  - b. A comparative study of the development of cholinesterase, succinic dehydrogenase, and respiratory activity in the central nervous system of *Amblystoma punctatum*. (*Amphibia*) (in collaboration with S. C. SHEN)
  - c. Development of respiratory enzymes in rat muscle. (*Mammals*) (in collaboration with S. C. SHEN)
- BONDE, C. von M.A., Ph.D., B.Sc. — Div. of Fisheries, Beach Rd, Seapoint, CAPE TOWN, S. Africa.
- a. Further investigations on the metamorphosis of the Cape Crawfish. *Jasus lalandii (Crustacea)*
- BONÉ, E. — Lab. d'Embryol., Inst. de Zool., Univ. de Louvain, 71, Rue de Namur, LOUVAIN, Belgique.
- a. Modifications of the competence in *Triturus taeniatus* after local action of LiCl. (*Urodeles*) (in collaboration with G. VANDEBROEK)
- BONIN, W. B.A., M.D., Prof. — Dept d'Histol. et d'Embryol., Univ. de Montreal, 2900, Boulevard du Mont-Royal, MONTREAL, Canada.

- a. Origine des ganglions craniaux aux dépens des placodes épiblastiques. *Amia calva* (Pisces)
- b. Structure d'un oeuf *humain* au stade de la ligne primitive. Origine du mésoblaste. Mode de formation du chorion villeux. (*Mammalia*)
- BONNER, J. T. Ph.D. — Dept of Biol., Princeton Univ., PRINCETON, N.J., U.S.A.
- a. Problems of morphogenetic movements and differentiation in the amoeboid slime molds. *Dictyostelium discoideum* (Acrasiales)
- b. Problems of morphogenesis in the slime bacteria. *Chondromyces crocatus* (Myxobacteriales)
- BOOKHOUT, C. G. A.B., M.A., Ph.D., Prof. — Dept of Zool., Duke Univ., DURHAM, N.C., U.S.A.
- a. The development of *Dasybranchus caducus* (Polychaeta) from egg to pre-adult. Egg deposition, culture methods, day to day observations and records of living larvae and juveniles, study of fixed and sectioned material.
- b. The development of *Marphysa regalis* (Polychaeta) from the egg to the sixty-day stage. Egg deposition, culture methods, day to day observations and records of living larvae and juveniles, study of fixed and sectioned material.
- BOREI, H. Ph.Dr — Wenner-Grens Inst. for exper. Biol., Norrtullsgatan 16, STOCKHOLM 23, Sweden.
- a. Respiration of sea urchin eggs in different stages of development. Enzymatic constitution of eggs, kinetics of enzyme action. *Paracentrotus lividus*, *Psammechinus miliaris* and other sea urchins (Echinoderms)
- BOTERENBROOD, Miss E. — Hubrecht Lab., Internat. Embryol. Inst., Janskerkhof 2, and Zool. Lab., Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Analysis of the neural induction. Transfer of activating substances in horizontal direction through presumptive ectoderm and the subsequent organisation of a nervous system. (heteroplastic transplantation of ectoderm) *Triturus taeniatus*, *alpestris* and *cristatus* (*Amphibia*) (in collaboration with P. D. NIEUWKOOP and Miss A. KREMER)
- b. Developmental physiology of mutants. *Drosophila melanogaster* (*Insecta*) (in collaboration with L. E. NIJENHUIS, F. J. OPPENOORTH and N. SPRONK)
- BOUIN, P. Dr, Prof. (Emer.) — VENDRESSE, Ardennes, France.
- BOUNOURE, L. Prof. — Inst. de Zool., Lab. de Biol. génér., Fac. des Sci. de Strasbourg, 12, Rue de l'Université, STRASBOURG, France.
- a. Initial development: primordial germ-cells, development of the gonads. (*Amphibia*)
- BOUR, J. W. H. Med.Drs — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.
- a. Development of diencephalon and hypophysis in *man* and *cat*. (*Mammalia*) (in collaboration with J. DANKMEIJER and W. LUYENDIJK)
- BOVEY, R. Dr ès Sc. — M.R.C. Biophysics Res. Unit, King's Coll., Strand, LONDON W.C. 2, England.
- (Member of staff of Agricultural Res. Council)
- a. Étude de la spermiogenèse du *mouton* à l'aide du microscope électronique et du microscope ordinaire. (*Mammalia*)
- b. Étude à l'aide du microscope électronique de la membrane nucléaire des ovocytes de *Locusta mipatoria* et *Schistocerca gregoria*. (*Insecta*)

- c. Etude à l'aide du microscope électronique des chromosomes des ovocytes de *Triturus cristatus*. (*Amphibia*) (en collaboration avec H. G. CALLAN of St Andrew's Univ.)
- BOYD, J. D. M.A., M.Sc., M.D., Prof. — Anat. Dept, London, Hosp. Med. Coll., Univ. of London, Turner Str., LONDON E. 1, England.
- a. Investigation on growth and histology of the placentae in situ from the third month until term. *Homo* (*Mammalia*) (in collaboration with W. J. HAMILTON)
- b. *Human and mammalian embryology with special reference to nervous system.*
- BOYDEN, E. A. Ph.D., Med.Sc., Prof. — Inst. of Anat., School of Med., Univ. of Minnesota, MINNEAPOLIS 14, Minn., U.S.A.  
(no data received over this year)
- BOYER, Ch. C. B.S., M.A., Ph.D., Prof. — Med. Coll. of Alabama, BIRMINGHAM 5, Ala., U.S.A.
- BOZIC, B. Lic. ès Sc. — Lab. de Biol. anim. du P.C.B., Univ. de Paris, 7, Rue Cuvier, PARIS Ve, France.
- a. Physiology of primitive development of the *rat* embryo. (*Mammalia*)
- BRACHET, J. L. A. M.D., Prof. — Lab. de Morphol. anim., Univ. libre de Bruxelles, 1850, Chaussée de Wavre, BRUXELLES—Auderghem, Belgique.
- a. Studies on the action of specific antisera on morphogenesis. (Various species of *Amphibia*)
- b. Studies on the action of amino acids on morphogenesis. (Various species of *Amphibia*)
- c. Studies on the metabolism of letal hybrids. (Various species of *Amphibia*)
- BRADEN, A. W. H. B.Sc. — Commonwealth Sci. and Industr. Res. Org., McMaster Anim. Health Lab., Parramatta Rd, GLEBE, N.S.W., Australia.
- a. Descriptive and comparative aspects of initial development. Investigation of fertilization and spermatogenesis with phase-contrast microscopy. *Rat* (*Mammals*) (in collaboration with C. R. AUSTIN)
- b. Experimental and developmental morphology of initial development. Chemical and physical factors involved in the sperm penetration of the zona pellucida. *Rat and Rabbit* (*Mammals*) (in collaboration with C. R. AUSTIN)
- c. Developmental physiology of fertilization and cleavage. Development of blastocysts and isolated blastomeres after transplantation. Induction of parthenogenesis. Investigations on the external migration of gametes. *Rabbit* (*Mammals*) (in collaboration with C. R. AUSTIN)
- BRAMBELL, F. W. R. D.Sc., F.R.S. — Dept of Zool., Univ. Coll. of N. Wales, BANGOR, Caernarvonshire, Great Britain.
- a. Immunological relations of mother and young in *mammals*. *Rabbit*
- BRANDT, W. M.D., Ph.D., Prof. — Dept of Anat., Med. School, Hospitals Centre, BIRMINGHAM 15, England.
- a. Development of malformations of limbs. (*Amphibians*)
- b. General investigations on pathological development. (*Amphibians*)
- c. Development of eye. *Human* (*Mammals*)
- BRETSCHER, A. Dr Phil. II — Abt. für Zoophysiol., Zool. Inst. der Univ., Sahlistr. 8, BERN, Schweiz.
- a. Development of the leg of the *domestic fowl*; Polydactyly. (*Aves*)

- b. Development of the leg of the *domestic fowl*; influence of colchicine.
- c. Development of the leg of the *domestic fowl*; influence of the epidermis.
- d. The development of skeleton and muscles of the pelvic-girdle and hind limbs of *Xenopus laevis*. (*Anura, Amphibia*) (Normal Table)
- BRETSCHNEIDER, L. H. — Zool. Lab., State Univ. of Utrecht, Fac. of Sci., Janskerkhof 3, Utrecht, Holland.
- a. Electron microscopical investigation on differentiation, insemination, growth and differentiation of the egg of *Limnaea stagnalis*. (*Gastropoda*)
- BRIEN, P. Dr. Prof. — Lab. de Zool., Fac. des Sci., Inst. de Zool. Torley-Rousseau, Univ. libre de Bruxelles, 50, Av. F. D. Roosevelt, BRUXELLES, Belgique.
- a. Reproduction asexuée. Régénération. Etude des facteurs conditionnant l'apparition de la sexualité. Formation des cellules sexuelles. Développement embryonnaire. (*Tuniciers, Eponges, Coelentérés et Oligochètes*) (partiellement en collaboration avec Madame M. H. HERLANT)
- b. Biologie des *Hydroïdes*. Bourgeonnement, croissance, sexualité (*Hydra*)
- c. Etudes histologiques du bourgeonnement. Etudes histologiques de la gametogénèse. Expériences par marques colorés. Régénération de la croissance. Facteurs extérieurs conditionnant le bourgeonnement et la sexualité. *Hydra (Hydroïdes)*
- BRIGGS, R. W. Ph.D. — Lankenau Hosp. Res. Inst. and Inst. for Cancer Res., Burholme Ave, Fox Chase, PHILADELPHIA 11, Pa, U.S.A.
- a. Cytochemical and transplantaion study of cells from partial blastulae lacking functional chromosomes. *Rana (Amphibia)* (in collaboration with E. U. GREEN and T. KING)
- b. Study of the reaction between the living sperm nucleus and toluidine blue. *Rana (Amphibia)*
- c. Development of gynogenetic diploids. *Rana (Amphibia)*
- BROEK, Miss E. v. d. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Analysis of lithium action. *Limnaea stagnalis (Gastropoda)* (in collaboration with G. A. van ARKEL, Mrs A. S. DUYKER—de BEER, Miss W. H. T. van HEESCH, J. C. N. KOK, J. W. KUIPER, Miss R. P. van LOO, G. D. NIJENHUIS, Miss J. E. H. SMIT and W. L. van UTRECHT).
- BROERS, C. J. Biol. drs — Anat.-Embryol. Lab. der Rijks-Univ., Janskerkhof 3, UTRECHT, Holland.
- a. The development of the tympanic region and skull. (*Mammalia*)
- BRØNDSTED, H. V. Dr Phil., Prof. — Inst. for Alm. Zool., Universitetsparken 3, COPENHAGEN Ø, Denmark.
- a. Regeneration. (*Planarians and Sponges*)
- b. *Mammalian* embryology (first stages).
- BRUINS, G. Drs Vet. — Veter.-Anat. Inst., Biltstr. 172, UTRECHT, Holland.
- a. Development of genital tract and gonads in domestic animals. (*Birds and Mammals*) (in collaboration with G. KREDIET)
- BRUNER, Miss J. A., Ph.D. — Zool. Dept, State Univ. of Iowa, IOWA CITY, Iowa, U.S.A.
- a. Gonadotropic hormones in mother and fetus at various stages of pregnancy. *Man (Mammals)*
- b. Hormones and sex differentiation. *Amblystoma (Amphibians)*

- BRUNNEKREEFT, F. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Influence of centrifugation on animal pole plasm. *Limnaea stagnalis* (*Gastropoda*)
- BRUZZONĚ, S. M.D. — Dept de Med. Exper. del Servicio Nacional de Salubridad, Av. Irarrázaval 849, SANTIAGO, Chile, South America.
- a. Hormonal interrelations between ovary and hypophysis. Ovarian grafts in the spleen. *Cavia cob.* (*Mammalia*) (in collaboration with A. LIPSCHUTZ, R. IGLESIAS, Miss E. MARDONES and Miss M. BARAKONA)
  - b. Influence of steroids on the gonadotrophic function of the hypophysis; and on the follicular development of the ovary. Ovarian grafts in the spleen; with the simultaneous action of steroids absorbed from beneath the skin, or absorbed from the spleen; and other devices. *Cavia cob.* (*Mammalia*) (in collaboration with A. LIPSCHUTZ, R. IGLESIAS, Miss E. MARDONES and Miss M. BARAKONA)
- BUCHER, N. — Zool.-vergl. Anat. Inst., Naturw. Fak., Univ. Zürich, Künstlergasse 16, ZÜRICH 6, Schweiz.
- a. Influence of radiation and chemicals on *Drosophila melanogaster*-ovaries. (*Insecta*)
- BUCHTOWNA, Miss A. M.Sc. — Zakład Anat. Porównawczej, Inst. Zool. Uniw., ul. Sienkiewicza 21, WROCLAW, Poland.
- a. Development of ribs. *Salmonidae* and *Cyprinodontidae* (*Teleostei*) and *Salamandra* (*Urodela*)
- BUNO, W. B.S., Ph.D., Prof. — Dept de Histol. y Embriol., Fac. de Med., MONTEVIDEO, Uruguay, S. América.
- a. Normal table of the development of *Bufo arenarum* Hensen. (*Amphibia*)
  - b. Rôle of the Hensen knot. Induction in *birds*.
  - c. Prospective areas in the *chick* blastoderm. (*Aves*) (in collaboration with C. M. FRANCHI)
  - d. Enzymes in the development of the embryo. *Chick* and *pig* (*Aves* and *Mammalia*) (in collaboration with R. E. GONZALEZ MARINO and Miss J. ALVAREZ GUTIÉRREZ)
- BURDON—JONES, C. B.Sc., — Dept of Zool., Univ. Coll. of N. Wales, BANGOR, Caernarvonshire, Great Britain.
- a. Embryology of British *Enteropneusta*.
- BURNS, R. K. B.S., Ph.D., Member — Dept of Embryol., Carnegie Inst. of Washington, Wolfe and Madison Strs, BALTIMORE 5, Md, U.S.A.
- a. The experimental control of sex differentiation in the embryo by means of hormones. *Didelphys virginiana* (*Marsupialia*)
- BURR, H. S. Dr, Prof. — Sterling Hall of Med., Yale Univ., 333 Cedar Str., NEW HAVEN 11, Conn., U.S.A.  
(no data received)
- BUTLER, E. G. Ph.D., Sc.D., Prof. — Dept of Biol., Princeton Univ., PRINCETON, N.J., U.S.A.
- a. A study of the mechanics of the formation of the regeneration blastema. The influence of nerves on blastema formation. Regression in nerveless non-regenerating limbs. *Amblystoma punctatum* and *Ambl. opacum*
  - b. Blastema formation and regeneration in *urodele* limbs in which proximo-distal polarity has been reversed. *Amblystoma punctatum* and *Ambl. opacum* (*Amphibia*)

- c. Regression (reduction) and subsequent reconstitution in *Clavelina lepadiformis* (*Tunicata*)
- CAIRNS, J. M. Ph.D., Asst Prof. — Dept of Zool., Univ. of Texas, AUSTIN 12, Texas, U.S.A.
- a. The induction of regional characteristics of feather structure. *Gallus domesticus* (*Aves*)
- b. The action of genes (frizzled and silky) in the development of the feather. *Gallus domesticus* (*Aves*)
- c. Study of the differentiation of the limb structure. *Gallus domesticus*
- CALLAN, H. G. M.A., D.Sc., Prof. — Dept of Zool., University, ST ANDREWS, England.
- a. Reciprocal hybridisation of *newts* with a view to studying cytoplasmic effects and hybrid meiosis. *Triturus vulgaris*, *palmatus* and *cristatus*
- b. Structure of chromosomes in *newt* oocytes. *Triturus cristatus carnifex* (*Amphibia*)
- c. Morphological and physiological studies on germinal vesicle nucleus of *newt* oocytes. Structure and properties of nuclear membrane, sap, etc. *Triturus spp.*, *Xenopus laevis* (*Amphibia*)
- CAMBAR, R. Dr — Fac. des Sci. de Bordeaux, 40, Rue Lamartine, TALENCE (Gironde), France.
- a. Les facteurs de la morphogenèse du mésonéphros chez les *Amphibiens*.
- b. Développement du système pronéphrétique chez les *Amphibiens*.
- CAMPENHOUT, E. van Dr, Prof. — Inst. d'Anat., Univ. de Louvain, 38, Rue des Récollets, LOUVAIN, Belgique.
- a. Embryological development of the innervation of the gonads. (*Birds*)
- b. Regeneration of the central nervous system in the *chick* embryo. (*Birds*)
- CARR, Miss E. B. B.Sc. — Dept of Embryol., Univ. Coll. London, Gower Str., LONDON W.C. 1, England.
- a. The development of the reproductive tracts in *mammals* with special reference to *rabbit*. *Oryctolagus cuniculus*
- CARTER, H. B. Dr — Wool Biol. Lab., Commonwealth Sci. and Industr. Res. Org., 17, Randle St, SYDNEY, N.S.W., Australia.
- a. Morphogenesis of skin and its appendages in *mammals*, especially the *sheep*.
- CARTER, T. C. Ph.D. — Med. Res. Council, Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- a. Developmental study of the luxate (tibial hemimelia) mutant in the house *mouse*. (*Mammalia*)
- b. Study of abnormal embryos induced by injecting trypan blue into pregnant *mice*. *Mus musculus* (*Mammalia*) (in collaboration with C. H. WADDINGTON)
- CASPARI, E. Ph.D., Prof. — Dept of Biol., Wesleyan Univ., MIDDLETOWN, Conn., U.S.A.
- a. Development of eye pigmentation in wild type, aa and wa wa *Ephestia kuhniella* (*Lepidoptera*)
- b. Development of tail structure in normal, Brachyury, Kenky and Fused *mice*. *Mus musculus* (*Mammalia*)
- CASTIGLIONI, M. C. — Ist. di Genet., Fac. di Sci., Univ. di Milano, Via Celoria 10, MILANO, Italia.
- a. Development of imaginal discs for the study of the compound eye formation. *Drosophila* (*Insecta*)

- CATE, G. ten — Anat.-Embryol. Lab., Univ. van Amsterdam, Mauritskade 61, AMSTERDAM O., Holland.
- Immunological study about the development of the eye-lens in *vertebrates*. Origin of the specific lens-substances. *Rana (Amphibia)*, *Gallus (Aves)*
  - Biochemical study of the metabolism of embryonic differentiation in general and especially that of the eye-lens. *Rana*, a.o. (*Amphibia*), *Gallus*, a.o. (*Aves*)
- CEI, J. M. Dr Biol.Sc. — Inst. de Zool., Univ. Nac. de Tucumán, Miguel Lillo 205, TUCUMAN, Argentien, S. America.
- Ecological and biochemical characteristics of the first stages of development of typical neotropical forms. (*South American Batrachians*)
- CELESTINO da COSTA, A. Dr hon. causa: Bordeaux 1923, Toulouse 1929, Prof. — Inst. de Histol. e Embriol., Fac. de Med., LISBOA, Portugal. (no data received over this year)
- CHAMBERS, W. W. B.S., Ph.D., asst Prof. — Dept of Anat., School of Med., Univ. of Pennsylvania, PHILADELPHIA 4, Pa., U.S.A.
- Regeneration in the spinal cord of *cat* and *dog*. (*Mammals*) (In collaboration with W. F. WINDLE)
- CHANDLER, S. B. A.B., A.M., M.D., Prof. — School of Med., West Virginia Univ., MORGANTOWN, W.Va., U.S.A. (no data received over this year)
- CHANG, C. Y. M.S. — Zool. Dept, State Univ. of Iowa, IOWA CITY, Iowa, U.S.A.
- Sex determination in *amphibians* by steroid hormones. (*Anurans*)
- CHANG, M. C. Ph.D. — Worcester Foundation for Exp. Biol., SHREWSBURY, Mass., U.S.A.
- Physiology of fertilization and cleavage in *rabbit*. Transplantation of *rabbit* blastocysts. Development of *rabbit* ova at different stages in relation to ovulation time of recipients. Cleavage of unfertilized *ferret* ova. (*Mammals*)
- CHANMUGAM, P. K. M.Sc., M.R.C.S., L.R.C.P., L.M.S. — Dept of Anat., Fac. of Med., Univ. of Ceylon, Kynsey Rd, COLOMBO 8, Ceylon, India, Asia.
- Descriptive and comparative embryology. *Primates*
- CHAPMAN, G. M.A., Ph.D. — Queen Mary College, Univ. of London, Mile End Rd, LONDON E 1, England.
- Descriptive and comparative embryology of *Scoloplos armiger*. (*Polychaeta*)
  - Descriptive and comparative embryology of *Phyllodoce maculata*. (*Polychaeta*)
- CHASE, H. B. Ph.D., Prof. — Arnold Biol. Lab., Brown Univ., PROVIDENCE 12, R.I., U.S.A.
- Study of anophthalmia and microphthalmia. *Mus musculus (Mammalia)*
  - Study of skin and its derivatives with emphasis on hair development and pigment distribution. *Mus musculus (Mammalia)*
- CHENEY, R. H. Dr, Prof. — Dept of Biol., Brooklyn Coll., Bedford Ave and Ave H., BROOKLYN 10, N.Y., U.S.A. (no data received)
- CHIAKULAS, J. M.S. — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- Affinities among different tissues tested by larval wound healing. (*Amphibia*) (under direction of P. A. WEISS)



- CHIEFFI, G. Dr — Ist. di Genet. dell'Univ. di Napoli, Fac. di Sci., Via Mezzocannone 8, NAPOLI, Italia.
- a. Development and differentiation of gonads in *Elasmobranchii*. *Torpedo ocellata* and *Scylliorhinus canicula* (*Fishes*)
- CHIH, C. S. — Lab. d'Hormonol. et Cytol. expér., École des Hautes Etudes, Univ. Hôpit. Broca, III Rue L. M. Nordmann, PARIS 13e, France.
- a. Hormonal release of the heterotypic division (meiosis) in *Rabbit*. (*Mammalia*) (in collaboration with R. MORICARD)
- CHOW, P. S. B.Sc. — Dept of Biol., Nat. Univ. of Chekiang, HANGCHOW, China.
- a. Studies on eye-stalk hormone in *Crustacea*:
1. Isolation and purification of the hormone preparation.
  2. Chemical identification of the active principle.
  3. Mechanism of the hormonal action.
- Caridina denticulata* (*Decapoda*) (in collaboration with H. M. KIANG, J. CHU and Miss N. TSAI)
- CHU, J. B.Sc. — Dept of Biol., Nat. Univ. of Chekiang, HANGCHOW, China.
- a. Studies on eye-stalk hormone in *Crustacea*:
1. Isolation and purification of the hormone preparation.
  2. Chemical identification of the active principle.
  3. Mechanism of the hormonal action.
- Caridina denticulata* (*Decapoda*) (in collaboration with H. M. KIANG, P. S. CHOW and Miss N. TSAI)
- CHUANG, H. H. Dr, Prof. — Dept of Zool., Coll. of Sci., Nat. Univ. of Peking, Ching Shan Tung Chieh, PEIPING, China.
- a. Das Material über die Zusammenarbeit der Keimblätter — Versuche mit Grossdefekt an verschiedenen Regionen der Neurula — soll weiter bearbeitet werden. *Triton alpestris* und *T. taeniatus* (*Amphibia*) (darüber erschien bereits eine vorläufige Mitteilung in Z. Naturforschg 2b. 1947)
- b. Die Wirkung von Sulfa-Verbindungen auf die embryonale Entwicklung von *Rana nigromaculata*. (*Amphibia*)
- CIGADA, Miss M. Dr — Ist. di Zool. e Anat. comp., Via Celoria 10, MILANO, Italia.
- a. Protein changes in embryonic development. (*Aves*, *Amphibia*, *Echinodermata*)
- CITTERIO, P. Grad. stud. — Ist. di Zool. e Anat. comp., Via Celoria 10, MILANO, Italia.
- a. Determination in early development. (*Amphibia*) and (*Echinodermata*)
- CLAES, M. T. — Lab. d'Embryol., Inst. de Zool., Univ. de Louvain, 71, Rue de Namur, LOUVAIN, Belgique.
- a. The development of the trabeculae cranii in *perch* embryos treated with LiCl. *Perca* (*Osteichthyes*) (in collaboration with G. VANDEBROEK)
- CLANCY, W. — Biol. Dept, Univ. of Oregon, EUGENE, Ore., U.S.A. (no data received over this year)
- CLARK, E. R. A.B., M.D., Sc.D., Prof. Emer. — Dept of Anat., School of Med., Univ. of Pennsylvania, PHILADELPHIA 4, Pa., U.S.A.
- a. Studies on growth of various implanted tissues with the *rabbit's ear chamber* technique. (*Mammals*) (in collaboration with R. G. WILLIAMS)

- CLARK, H. B.A., Ph.D., Prof. — Dept of Zool., Univ. of Connecticut, STORRS, Conn., U.S.A. (no data received over this year)
- CLAVERT, J. Dr en Méd., Dr ès Sc., Prof. — Inst. d'Embryol. et de Morphol. expér., Fac. de Méd., 1, Place de l'Hôpital, STRASBOURG, (Bas-Rhin), France.
- a. Egg formation in *birds*. (Rôle of female hormone in vitellogenesis). *Pigeon, duck and chick*
- CLAYTON, Mrs R. M. B.A. — Univ. Dept of Genet., Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- a. Studies of differentiation by immunological and other techniques. *Triton alpestris (Amphibia)*
  - b. Studies of a mutant in a highly inbred line by immunological and allied techniques: The mutants pink eye and luxate in CBA mice and albino in an inbred strain of this laboratory. *Mus musculus (Mammalia)*
- CLEAT, N. D. B.Sc. — Dept of Zool., Univ. of Edinburgh, West Mains Rd, EDINBURGH 9, Scotland.
- a. Post-embryonic growth and development of the oribatid mite *Scheloriabates laevigatus* (Koch). (*Arachnida, Acarina*)
- CLEMENT, A. C. Ph.D., Prof. — Emory University, Dept of Biol., EMORY UNIVERSITY, Ga, U.S.A.
- a. Experimental analysis of germinal localization in *Ilyanassa obsoleta*. (Effects of removal of the polar lobe, development of isolated blastomeres and other fractions of the egg. Effects of various chemicals on differentiation). (*Gastropoda*)
- COHEN, S. Ph.D. — Univ. of Colorado, Med. Center, Dept of Pediatrics, 4200 east Ninth Ave, DENVER 7, Col., U.S.A.
- a. The metabolic maturation of the liver. The capacity to synthesize creatine from glycocyamine and methyl donors is tested with livers from *guinea pig* feti of different intrauterine ages. (*Mammals*) (in collaboration with J. DEMETRY)
- COLLISTER, Miss R. M. — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.
- a. Investigations on congenital heartmalformations. X-ray and anatomical dissection. Collateral circulations. *Homo (Mammalia)* (in collaboration with J. DANKMEIJER and H. A. SNELLEN)
- COLOMBO, G. Dr — Ist. di Zool. e Anat. comp., Fac. di Sci., Via Loredan 6, PADOVA, Italia.
- a. Chromosomes in early development. (*Amphibia*)
  - b. Effects of hormones on cleavage. (*Amphibia*)
- COLWIN, A. L. Ph.D., Prof. — Dept of Biol., Queens Coll., Flushing, L.I., NEW YORK, N.Y., U.S.A.
- a. Fertilization reaction. *Saccoglossus (Enteropneusta)* (in collaboration with Mrs L. H. COLWIN)
  - b. Normal and experimental development. *Saccoglossus (Enteropneusta)* (in collaboration with Mrs L. H. COLWIN)
  - c. Effect of certain chemicals on development. *Molgula, Ciona* and *Styela (Tunicata)*
- COLWIN, Mrs L. H. Ph.D., Prof. — Dept of Biol., Queens Coll., Flushing, L.I., NEW YORK, N.Y., U.S.A.
- a. Fertilization reaction. *Saccoglossus (Enteropneusta)* (in collaboration with A. L. COLWIN)

- b. Normal and experimental development. *Saccoglossus (Enteropneusta)* (in collaboration with A. L. COLWIN)
- c. Development of *Thyone. (Holothuria)*
- CONKLIN, E. G. Dr, Prof. (Emer.) — Princeton Univ., PRINCETON, N.J., U.S.A.
- COPENHAVER, W. M. Dr, Prof. — Coll. of Phys. and Surg., Columbia Univ., 632, West 168th Str., NEW YORK City, N.Y., U.S.A. (no data received)
- CORDIER, J. Dr, Prof. — Inst. d'Histol., Fac. de Med., 97, Rue aux Laines, BRUXELLES, Belgique.
- a. Development of skin and sense organs of *Xenopus laevis*, including histological study of the development of the chromatophores. (*Anura, Amphibia*) (Normal Table)
- CORNER, G. W. D.Sc., A.B., M.D., Prof. — Dept of Embryol., Carnegie Inst. of Washington, Wolfe and Madison Strs, BALTIMORE 5, Md, U.S.A.
- a. Histology of uterus and ovaries in reproductive cycle of *primates*. Chiefly *Macaca rhesus (Mammalia)*
- b. Embryological study of pregnancies terminated because of genetic or maternal factors threatening the fetus, e.g. rubella, mongolism. *Homo sapiens (Mammalia)*
- c. Physiology of uterine muscle. (*Mammalia*)
- COSTELLO, D. P. Ph.D., Prof. — Dept of Zool., Univ. of North Carolina, CHAPEL HILL, N.C., U.S.A.
- a. An investigation of the cytological and morphological effects of low temperature on fertilized eggs of the *annelid. Chaetopterus pergamentaceus*. (in collaboration with Miss C. HENLEY)
- b. Studies on the effects of radioactive phosphorus on mitosis in epithelial cells of *Amblystoma punctatum* larvae. (*Amphibia*) (in collaboration with Miss C. HENLEY)
- COTRONEI, G. Dott., Prof. — Ist. di Anat. comp. dell'Univ. di Roma, Fac. di Sci., Via Borelli 50, ROMA, Italia.
- a. Recerche su trapianti, espianti e parabiosi tra *Anfibi anuri e urodeli* allo scopo di indagare i processi di regolazione, differenziazione nel quadro dei problemi della costituzione biologica. (in collaboration with T. PERRI and Mrs L. URBANI—MISTRUZZI)
- COURRIER, R. Prof. — Lab. de Morphol. exper. et Endocrinol., Coll. de France, Place Marcelin Berthelot, PARIS Ve, France.
- a. Endocrinologie de la gestation. (*Mammalia*)
- CRAIG, Miss M. M. — Dept of Genet., Coll. of Agric., Univ. of Connecticut, Storrs Agric. Exper. Stat., STORRS, Conn., U.S.A.
- a. Analysis, by means of tantalum-foil blocking, of the development of the tail in *chick* embryos. *Gallus domesticus (Aves)* (in collaboration with E. ZWILLING)
- CROMPTON, A. W. M.Sc. — Zool. Inst., Univ. of Stellenbosch, STELLENBOSCH, South Africa.
- a. Cranial ontogenesis. *Spheniscus demersus (Spheniscidae, Aves)*
- CSAPO, A. M.D. — Dept of Embryol., Carnegie Inst. of Washington, Wolfe and Madison Strs, BALTIMORE 5, Md, U.S.A.
- a. Physiology of uterine muscle, including developmental physiology. *Sus scrofa* and *Lepus cuniculus (Mammalia)*

- CZAPIK, Miss A. B.Sc. — Zool. Dept of the Jagellonian Univ., KRAKOW (Cracow), St. Anne 6, Poland.
- a. Development of the heart of *Insects. Agelastica alni* L. (*Coleoptera*)
- DALCQ, A. M. M.D., Prof. — Lab. d'Anat. et d'Embryol., Fac. de Méd. de l'Univ., 97, Rue aux Laines, BRUXELLES, Belgique.
- a. Cytochemistry of early stages of development. (*Rodentia* and *Insectivora*) (in collaboration with coworkers)
- b. Regulation in blastula and gastrula stage. (*Urodela* and *Anura*) (in collaboration with coworkers)
- DALES, R. P. B.Sc. — Queen Mary College, Univ. of London, Mile End Rd, LONDON E. 1, England.
- a. Breeding, larval development and ecology of *Polychaetes. Nereis diversicolor* (*Nereidae*), *Tharyx marioni* (*Cirratulidae*), *Heteromastus filiformis* (*Capitellidae*).
- DALTON, H. C. Ph.D., Prof. — Dept of Zool., New York Univ., NEW YORK, N.Y., U.S.A.
- a. Gene action controlling development of pigmentation in white and dark strains of *Mexican axolotl. Siredon mexicanum* (*Amphibia*)
- DAMAS, H. F. C. Dr Sc., Agr. Zool. — Inst. de Zool. Ed. Van Beneden, Fac. des Sci., Dépt Morphol. des Chordés, 22, Quai Ed. Van Beneden, LIÈGE, Belgique.
- a. Etude descriptive et comparative du développement des *Lamproies. Petromyzon marinus*, *Lampetra fluviatilis* et *L. planeri*. (*Cyclostomes*)
- DAN, Mrs J. C. Ph.D. — Embryol. Section, Dept of Biol., Fac. of Sci., Tokyo Metropolitan Univ., Meguro-ku, TOKYO, Japan.
- a. Phase contrast micromanipulation study of fertilization processes. Various species of *Echinodermata*
- DAN, K. Ph.D., Rigaku Hakushi, Prof. — Fac. of Sci., Dept of Biol., Embryol. Section, Tokyo Metropolitan Univ., Meguro-ku, TOKYO, Japan.
- a. Research into causes of form change in early development of sea-urchins, from pre-cleavage through metamorphosis. Various species of *Echinoidea*
- b. Birefringence studies of dividing sea-urchin eggs. Various species of *Echinoidea*
- D'ANCONA, U. Prof. — Ist. di Zool. et Anat. comp., Fac. di Sci., Via Loredan 6, PADOVA, Italia.
- a. Differentiation of the gonad in *vertebrates*, especially *fishes*.
- DANKMEIJER, J. Dr Med., Prof. — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.
- a. Permeability of the placenta in *rat* and *guinea-pig*. Investigation with isotopes. (*Mammalia*) (in collaboration with C. B. HEYN)
- b. Development of uterus and ovary in *man*. (*Mammalia*) (in collaboration with Miss A. DEKKER)
- c. Development of diencephalon and hypophysis in *man* and *mammals*. (in collaboration with W. LUYENDIJK and J. W. H. BOUR)
- d. Investigations on congenital heartmalformations; X-ray and anatomical dissection; collateral circulations. *Homo* (*Mammalia*) (in collaboration with H. A. SNELLEN and Miss R. M. COLLISTER)

- DATKOWNA, H. Dr — Zakład Anat. Porównawczej U.J. im. H. Hoyer, KRAKOW, św. Anny 6, Poland.
- a. Osmotic pressure and fish embryos. *Salmo trutta (Pisces)*
- DAVIDSON, Miss P. B.Sc. — Commonwealth Sci. and Ind. Res. Org., McMaster Anim. Health Lab., Parramatta Rd, GLEBE, N.S.W., Australia. (Guest-worker from C.S.I.R.O., Wool Biol. Lab., 17 Randle St, SYDNEY, N.S.W.)
- a. Development of vibrissa follicles. *Mouse (Mammals)* (in collaboration with Miss M. H. HARDY)
- b. Relation of dermis to epidermis in differentiation of skin and hairs by *in vivo* and *in vitro* techniques. *Mouse (Mammals)* (in collaboration with Miss M. H. HARDY)
- c. Differentiation of feather follicles in tissue culture. *Chick (Aves)*
- DAVIES, D. H. M.Sc. — Div. of Fisheries, Beach Rd, Seapoint, CAPE TOWN, S. Africa.
- a. The development of the South African *Stockfish, Merluccius capensis. (Teleostei)*
- DAVIES, F. M.D., D.Sc., Prof. — Dept of Anat., Fac. of Med., Univ. of Sheffield, SHEFFIELD, England.
- a. The development and histogenesis of the conducting system of the *mammalian* heart. *Sheep* (in coll. with E. T. B. FRANCIS, Dept of Zool.)
- DAVIES, H. G. B.Sc. — M.R.C. Biophysics Res. Unit, King's Coll., Strand, LONDON W.C. 2, England.
- a. Ultra-violet studies of cells growing in tissue culture. (*Aves and Mammalia*) (in collaboration with P. M. B. WALKER)
- DAWSON, A. B. A.B., Ph.D., D.Sc., Prof. — Biol. Lab's, Harvard Univ., Divinity Ave, CAMBRIDGE 38, Mass., U.S.A.
- a. Histochemical evidence of early differentiation of the suprarenal gland of the *chicken. Gallus domesticus (Aves)*
- DEKKER, Miss A. Med.Dra — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.
- a. Development of uterus and ovary in *man. (Mammalia)* (in collaboration with J. DANKMEIJER)
- DELANNEY, L. E. Dr, Prof. — Dept of Biol., Univ. of Notre Dame, NOTRE DAME, Ind., U.S.A. (no data received)
- DELSOL, M. Lic. ès Sc. — Lab. de Biol. anim. (P.C.B. section II), Fac. des Sci., Univ. de Paris, 12, Rue Cuvier, PARIS Ve, France.
- a. Étude de l'action des antithyroïdiens (thiouracil etc.) au de la vie larvaire et de la métamorphose des *Batraciens. Discoglossus pictus*
- DEMETRY, J. M.S. — Univ. of Colorado, Med. Center, Dept of Pediatrics, 4200 east Ninth Ave, DENVER 7, Col., U.S.A.
- a. The metabolic maturation of the liver. The capacity to synthesize creatine from glycocyamine and methyl donors is tested with livers from *guinea pig* feti of different intrauterine ages. (*Mammals*) (in collaboration with S. COHEN)
- DENT, J. N. A.B., Ph.D., Assoc. Prof. — Miller School of Biol., Univ. of Virginia, CHARLOTTESVILLE, Va, U.S.A.
- a. Effects of innervation on polarity-reversal of regenerating limbs. *Triturus viridescens (Amphibia)*
- b. Uptake of inorganic iodine in metamorphosing *amphibians* and effects thereof. *Rana pipiens*

- DESCLAUX, P. Prof. agr. — Lab. d'Embryol., Fac. de Méd., 15, Rue Ecole de Méd, PARIS VIe, France.
- Embryologie descriptive du cerveau et spécialement du diencephale. *Rat (Mammifères)*
  - Influence tératogène des intoxications maternelles. *Femme et Rat (Mammifères)*
- DETH, J. H. M. G. van M.Dr — Anat.-Embryol. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- Determination of sex in *birds and mammals*. *Gallus domesticus* and *Cavia cobaya*
  - Origin of the asymmetry of the embryo. *Gallus domesticus (Aves)*
  - Lens induction in vitro. *Gallus domesticus (Aves)*
  - Tooth development. *Rat (Mammalia)*
- DETWILER, S. R. Dr, Prof. — Dept of Anat., Coll. of Phys. and Surg., Columbia Univ., 630, West 168th St, NEW YORK City, N.Y., U.S.A. (no data received)
- DEUCHAR, Miss E. M. B.A. — Univ. Dept of Genet., Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- Study of inductions obtained when cells from different regions of primary organizer are recombined in various proportions after disaggregation in alkali. (*Amphibia*)
- DEVILLERS, Ch. Dr ès Sc. — Lab. d'Embryogénie comp., Coll. de France, Place Marcelin Berthelot, PARIS Ve, France.
- Mécanique de la gastrulation chez la *Truite, Salmo irideus. (Pisces)* Nature et fonction du cortex.
  - Etude des substances nécessaires à la croissance et à la différenciation du blastoderme de l'oeuf de *Truite, S. irideus*, séparé de son vitellus et cultivé in vitro. (*Pisces*) (en collaboration avec N. SKREB)
  - Etude expérimentale de la formation des os dermiques crâniens de *Salmo fario. (Pisces)*
  - Translocations latitudinales dans la gastrula d'*Urodèle. Pleurodèles et Triton*
- DIDING, S. Fil. mag. — Embryol. Dept, Zool. Inst., Univ. of Lund, LUND, Sweden.
- Development of *Brachiopoda*, esp. *Crania*.
- DIETZ, D. — Roscoe B. Jackson Memorial Lab., Box 558, BAR HARBOR, Me, U.S.A. (no data received over this year)
- DODDS, G. S. B.A., M.A., Ph.D., Prof. — School. of Med., West Virginia Univ., MORGANTOWN, W.Va., U.S.A. (no data received over this year)
- DOLLANDER, A. Dr, Délégué Agr. — Lab. d'Anat. et d'Histol., Dép. d'Embryol., Fac. de Méd., Inst. Anat., 31, Rue Lionnois, NANCY (Meurthe & Moselle), France.
- Etude du revêtement superficiel de l'oeuf. *Triturus helveticus, Tr. alpestris* et *Tr. cristatus (Amphibia)*
  - Organogénèse du poumon. *Homo (Mammalia)* (en collaboration avec A. A. BEAU)
- DONALDSON, J. C. M.D., Prof. — Dept of Anat., School of Med., Univ. of Pittsburgh, PITTSBURGH 13, Pa, U.S.A.
- Studies on the developing *human* pancreas. (*Mammalia*)

- DOUGLAS, R. I. B.Sc. — Dept of Zool., Univ. of Edinburgh, West Mains Rd, EDINBURGH 9, Scotland.
- a. Physiology of polyploids of *Rana temporaria* L. (*Amphibia, Anura*)
- DREYER, Miss M. V. B.Sc. — Dept of Zool., Univ. of O.F.S., BLOEM-FONTEIN, South Africa.
- a. Epithelio-neural bodies in the *Chick, Gallus bankiva* (*Aves*)
- DUBOIS, Mlle F. Dr ès Sc. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- a. Migration des néoblastes dans la régénération chez les *Planaires*. Facteurs qui déclenchent cette migration. *Euplanaria lugubris* (*Plathelminthes, Turbellariés, Triclades*)
- DUSHANE, G. Ph. Dr, Prof. — Dept of Biol., Stanford Univ., PALO ALTO, Cal., U.S.A. (no data received)
- DUYKER—de BEER, A. S. Mrs — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Analysis of lithium action. *Limnaea stagnalis* (*Gastropoda*) (in collaboration with G. A. van ARKEL, Miss E. v. d. BROEK, Miss W. H. T. van HEESCH, J. C. N. KOK, J. W. KUIPER, Miss R. P. van LOO, G. D. NIJENHUIS, Miss J. E. SMIT and W. L. van UTRECHT)
- EAKIN, R. M. A.B., Ph.D., Prof. — Dept of Zool., Univ. of California, BERKELEY 4, Cal., U.S.A.
- a. Development of the *amphibian* pituitary. Study of independent or dependent differentiation of the partes buccales and pars nervosa of the pituitary. *Hyla regilla*. (assisted by Miss N. EATON, Miss E. OLDENBORG and W. THURMOND)
- b. Survival of transplanted pituitaries in *Amphibia* (homoplastic and xenoplastic). *Hyla regilla* and *Triturus torosus*. (in collaboration with M. HARRIS)
- c. Studies in protein metabolism of *amphibian* embryo. II — Free amino acids; III — Peptides; IV — Uptake of radioactive methionine. *Rana pipiens* and *Hyla regilla* (in collaboration with W. E. BERG and P. B. KUTSKY)
- EALES, Miss N. B. D.Sc. — Dept of Zool., Univ., READING, Berkshire, England. (no data received over this year)
- EASSA, Y. E. B.Sc. — Dept of Zool., Univ. of Sheffield, SHEFFIELD, England. (in a study-leave from Farouk I Univ., ALEXANDRIA, Egypt)
- a. Change of musculature in the heads of larva, pupa and imago and development of imaginal buds of the mouthparts in *Pieris brassicae* (Linn.). (*Insecta*)
- EAYRS, J. T. B.Sc. — Dept of Anat., The Med. School, Birmingham Univ., Edgbaston, BIRMINGHAM 15, England.
- a. Factors involved in the disjunction of the eyelids. *Rodents* (*Mammals*)
- b. The influence of sex hormones on maturation behaviour. *Rodents*
- EBERT, J. D. Ph.D. — Dept of Biol., Massachusetts Inst. of Technology, CAMBRIDGE 39, Mass., U.S.A.
- a. Investigating the ontogeny of tissue antigens by immunological techniques. *Chick* (*Birds*)

- b. Investigating the time and manner of origin, and role of vitamins in the early blastoderm. *Chick (Birds)*
- EDDS Jr., M. V. S.A., M.A., Ph.D. — Dept of Biol., Brown Univ., PROVIDENCE 12, R.I., U.S.A.
- a. Study of factors influencing the spreading of intact axons in partially denervated muscles. (*Vertebrates*)
- b. Study of factors influencing the diameter of nerve fibers. (*Vertebrates*)
- EDGAR, G. W. F. Med. drs — Anat.-Embryol. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Investigations into the lipidchanges in the central nervous system of the growing *rabbit*, compared with the normal and pathological development of the myelin sheath. *Lepus cuniculus (Mammalia)*
- EDWARDS, L. F. B.A., M.Sc., Ph.D., Prof. — Dept of Anat., Ohio State Univ., COLUMBUS 10, Ohio, U.S.A. (no data received over this year)
- EEDEN, J. A. van M.Sc. — Dept van Dierk., Potchefstroom Univ., POTCHEFSTROOM, Suid-Afrika. (stud: Soöl. Inst., STELLENBOSCH)
- a. Ontogenesis of the skull of *Ascaphus truei*. (*Amphibia*)
- b. Ontogenesis of the skull and visceral muscles of *Xenopus laevis* till the beginning of metamorphosis. (*Anura, Amphibia*) (Normal Table)
- EGMOND, Miss M. T. C. van — Zool. Lab. der Rijks Univ., Janskerkhof 3, and Hubrecht Lab., Janskerkhof 2, UTRECHT, Holland.
- a. Centrifugation of cleavage stages. *Limnaea stagnalis (Gastropoda)* (in collaboration with F. J. VERHEYEN)
- b. Experimental analysis of the neurulation process in *Xenopus laevis*. (*Anurans*) (in collaboration with P. D. NIEUWKOOP)
- ELOFF, F. C. D.Sc. — Zool. Inst., Fac. of Sci., Univ. of Pretoria, PRETORIA, South Africa.
- a. Morphological investigation of the organ of Jacobson and the nasal-floor cartilages in an embryo of *Galago senegalensis*, the *African night-ape*. (*Mammalia*)
- b. Observations on the chondrocranial roof of certain *rodents*. (*Mammalia*)
- ELSHOUT, Miss A. M. Arts — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.
- a. Listing and investigation of the historical collection of the Institute containing a large number of embryological preparations. (*Man and other Vertebrates*)
- ELWOOD, M. A. B.Sc. — Dept of Embryol., Univ. Coll. London, Gower Str., LONDON W.C. 1, England.
- a. Quantitative studies on the early development of the nervous system and associated structures. *Amblystoma (Amphibia)*
- ENDO, Y. M.Sc. — Embryol. Section, Dept of Biol., Fac. of Sci., Tokyo Metropolitan Univ., Meguro-ku, TOKYO, Japan.
- a. A chemical study of the process of fertilization membrane formation in *sea-urchin* eggs. Various species of *Echinoidea*
- ENGLÄNDER, H. Dr med. et rer. nat. — Inst. f. Entw.physiol., Kerpenerstr. 13, KÖLN-Lindenthal, Deutschland.
- a. Regionale Induktion bei *Urodelen*.
- ESPOSITO SEU MARGHERITA, Miss M. Dr — Ist. di Zool., Via Archirafi 18, PALERMO, Italia.
- a. Hatching enzymes in *Amphibians*.



- EYAL-GILADI, Mrs H. M.Sc. — Hebrew Univ., JERUSALEM, Israel.  
(at present working at Hubrecht Laboratory, UTRECHT, Holland)
- Experimental analysis of the development of neural differentiation tendencies during gastrulation and neurulation in *Amphibians*.
- FABER, J. — Hubrecht Lab., Internat. Embryol. Inst., Janskerkhof 2, UTRECHT, Holland.
- Description of „normal stages” from fertilization till the end of metamorphosis (Normal Table). *Xenopus laevis* (*Anurans*)
  - Influence of different kinds of food on the development of *Xenopus laevis*. (*Anurans*)
  - Description of the development of the pattern of chromatophores. *Xenopus laevis* (*Anurans*) (Normal Table)
  - Normal development of the alimentary canal and digestive glands from tail-bud stage till end of metamorphosis. *Xenopus laevis* (*Anurans*) (Normal Table)
- FANKHAUSER, G. Ph.D., Prof. — Dept of Biol., Princeton Univ., PRINCETON, N.J., U.S.A.
- Cytological study of polyploidizing effect of heat and cold on fertilized eggs, and of parthenogenetic cleavage induced by heat and cold treatment of unfertilized eggs. *Triturus viridescens* (*Amphibia*)
  - Study of effects of triploidy on development of gonads. *Triturus viridescens* (*Amphibia*)
  - Study of the reactions of diploid and triploid larvae and metamorphosed animals to pituitary hormones. *Triturus viridescens* (*Amphibia*)
  - Thyroidectomy in diploid and triploid embryos. Effects of thiourea, etc. *Triturus viridescens* (*Amphibia*)
  - Study of progeny of triploid, tetraploid and other heteroploid individuals among *Axolotls*. *Amblystoma mexicanum* (*Amphibia*) (in collaboration with R. R. HUMPHREY)
- FARINELLA—FERRUZZA, Mrs N. Dr — Ist. di Zool., Via Archirafi 18, PALERMO, Italia.
- Xenoplastic tail transplantations in *Amphibians*.
- FAURÉ FRÉMIET, E. Dr, Prof. — Coll. de France, Place Marcelin Berthelot, PARIS Ve. France. (no data received)
- FAUTREZ, J. C. M.D., Prof. — Lab. of Anat., Fac. of Med., Univ. of Gent, Bylokekaai 1, GENT, Belgium.
- Experimental embryology of the otocyst and the microplacods of the cranial nerves. (*Amphibians*)
  - Influence of ureum on the development. (*Amphibians*)
- FAUTREZ—FIRLEFYN, Mvr. N. J. — Lab. of Anat., Fac. of Med., Univ. of Gent, Bylokekaai 1, GENT, Belgium.
- Descriptive and cytochemical embryology. *Artemia salina* (*Phyllozoa*)
- FELDMAN, M. M.Sc. — Dept of Zool., The Hebrew Univ., JERUSALEM, Israel.
- The ontogenetic development of the chondrocranium, osteocranium and cranial muscles in *Pelobates syriacus*. (*Amphibia, Anura*)
- FELL, Miss H. Dr — Strangeways Res. Lab., CAMBRIDGE, England. (no data received)
- FEREMUTSCH, K. Dr Med. — Hirnanatom. Inst. der Psychiatr. Univ.-klinik, Med. Fak., Waldau, BERN, Schweiz.
- Endhirnentwicklung, speziell der Rinde und Bauplan. *Maus* und *Mensch*

- FERREIRA, W. A. B.S. — Dept de Histol. y Embriol., Fac. de Med., MONTEVIDEO, Uruguay, S. América.
- a. Neuro-embryology. *Bufo arenarum* (*Amphibia*)
  - b. Experimental analysis of the development of the heart. *Bufo arenarum* (*Amphibia*) (in collaboration with R. E. GONZALEZ MARINO)
- FILOGAMO, G. Dr — Inst. of human Anat., Corso Massimo d'Azeglio 52, TORINO, Italy.
- a. Study of the consequences of the removal of the secondary optic vesicle on the organogenesis and histogenesis of the optic lobe. *Chick* (*Aves*)
  - b. Histogenesis of the nervous cells of the sympathetic nervous system of the intestinal tract. *Sheep* (*Mammals*)
- FISCHBERG, M. Dr Phil. — Genet. Lab., Anim. Breeding and Genet. Res. Organ., Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- a. Experimental heteroploidy and parthenogenesis in *newts*. Heteroploid *newt* hybrids — developmental potentialities and expression of species characters, sex determination. *Triton alpestris* and *T. palmatus* (*Amphibia*)
  - b. Heteroploidy in *mammals*. Spontaneous heteroploidy — analysis of factors involved. Induced heteroploidy — methods of production. Viability of polyploid embryos. Physiological embryology of polyploid embryos. *Mus musculus* (in collaboration with R. A. BEATTY)
  - c. Transplantation of *mammalian* embryos. *Mus musculus* (in collaboration with R. A. BEATTY)
- FISCHER, Miss I. Dr — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- a. Fate of tissue culture cells introduced into embryos after prolonged cultivation in vitro. *Gallus domesticus* (*Aves*) (in collaboration with P. A. WEISS)
- FISK, A. M.Sc. — St Mary's Hosp., Med. School, Norfolk Place, Paddington, LONDON W. 2, England.
- a. The development of the ear and associated structures in the *Lamprey*.
  - b. The development of parachordals and trabeculae in the *Lamprey*. (*Cyclostomes*) (in collaboration with Miss M. TRIBE)
  - c. A critical note on the development of the *Vertebrate* kidney. (in collaboration with Miss M. TRIBE)
- FITZGERALD, L. R. Ph.D. — Univ. of Tennessee, Fac. of Biol. Sci., Med. Div., MEMPHIS 3, Tenn., U.S.A.
- a. Development of enzymes in *grasshopper* egg and embryo. *Melanoplus differentialis* (*Orthoptera*)
  - b. Enzyme activities of embryo and extra-embryonic membranes of *chick* and *rat*. (*Aves* and *Mammalia*)
- FLEMING, W. R. B.S. — Physiol. Lab., Coll. of Sci., Univ. of Portland, PORTLAND 3, Ore., U.S.A.
- a. Investigation of the chemical nature of the fertilization membrane. *Strongylocentrotus purpuratus* (*Echinoderms*)
- FLEXNER, L. B. B.S., M.D. Member — Dept of Embryol., Carnegie Inst. of Washington, Wolfe and Madison Strs, BALTIMORE 5, Md, U.S.A.
- a. Enzyme activities in fetal liver and cerebral cortex. *Cavia cobaya* (*Mammalia*)
  - b. Placental transfer using radioisotopes. *Cavia cobaya* (*Mammalia*)

- FLICKINGER, R. A. Ph.D., Prof. — Dept of Zool., Univ. of Pennsylvania, PHILADELPHIA 4, Pa, U.S.A.  
(no data received over this year)
- FONSECA SACARRÃO, G. da Lic. e Ci. — Museo Bocage da Fac. d. Ci., Univ. de LISBAO, Portugal.  
(no data received over this year)
- FRANCESCHINI, M. M.D. — Inst. of human Anat., Fac. of Med., Corso Massimo d'Azeglio 52, TORINO, Italy.  
a. Quantitative studies on the epiphyseal lines of long bones during body's postnatal growth. *Homo (Mammalia)*
- FRANCHI, C. M. B.S. — Dept of Histol. y Embriol., Fac. de Med., MONTEVIDEO, Uruguay, S. América.  
a. Prospective organ-forming areas in the *chick* and *rabbit* blastoderms. (*Aves* and *Mammalia*) (in collaboration with W. BUNO)
- FRANCIS, E. T. B. B.Sc., Ph.D., Dr — Dept of Zool., Univ. of Sheffield, SHEFFIELD, England.  
a. The development and histogenesis of the conducting system of the *mammalian* heart. (*Sheep*) (in collaboration with F. DAVIES, Dept of Anat.)
- FRAPPIER, J. B.A., M.D., Prof. — Dept d'Histol. et d'Embryol., Univ. de Montreal, 2900, Boulevard du Mont Royal, MONTREAL, Canada.  
a. Rôle de la vitamine E dans la reproduction. *Rat* et *Souris (Mammifères)*
- FRASER, A. S. B.Sc., M.Sc. — Genet. Lab., Anim. Breeding and Genet. Res. Organ., Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.  
a. Development and morphology of hair and skin mutants, particularly the mimic hairwaving genes. *Mus musculus (Mammalia)*  
b. Compatibility reactions to transplantation of skin between the RIII and C<sub>57</sub> inbred lines, and their F<sub>1</sub>. *Mus musculus (Mammalia)*  
c. Development and morphology of hair mutants, particularly the Rex and Angora genes. *Lepus canaliculus (Mammalia)*
- FRASER, Miss E. A., D.Sc. — Dept of Zool. and comp. Anat., Univ. Coll. London, Gower St, LONDON W.C. 1, England.  
a. The development of the mesonephros after unilateral removal of the pronephros. *Lampetra planeri (Cyclostomata)*  
b. Development of the kidney in *Echidna* and *Platypus*. (*Monotremata*)
- FRICK, H. Dr med., — Dr Senckenberg. Anat. Inst., Med. Fak. der Univ. Frankfurt/Main, Ludwig Rehnstr. 14, FRANKFURT/Main Süd, Deutschland.  
a. *Chiropterenplacenta. Roussetus* und *Rhinolophus (Mammalia)*
- FRILLEY, M. Dr ès Sc. — Lab. d'Embryol. du Lab. Pasteur de l'Inst. du Radium, 26, Rue d'Ulm, PARIS Ve, France.  
a. Étude des capacités de développement des différentes parties de l'appareil génital des embryons, après destruction des ébauches de l'hypophyse et des glandes génitales. (*Mammifères*) (en collaboration avec A. RAYNAUD)  
b. Recherches sur le développement embryonnaire de la glande mammaire de la *Souris*. (*Mammifères*) (en collaboration avec A. RAYNAUD)
- FROUD, M. D. B.Sc. — Wye Coll., Univ. of London, ASHFORD, Kent, England.  
(no data received over this year)

- GAILLARD, P. J. Dr Med., Prof. — Lab. for Exper. Histol., Fac. of Med., Univ. of Leyden, Wassenaarseweg, Boerhaavekwartier, LEIDEN, Holland.
- Developmental potencies of the *human* fetal germinal epithelium in explants. (*Mammalia*)
  - Primary genesis of thyroid follicles in explants and factors governing colloid formation. *Gallus domesticus* (*Aves*)
- GALINSKY, I. Dr — Dept of Anat., Coll. of Med., Baylor Univ., 1200 M.D. Anderson Blvd, Texas Med. Center, HOUSTON 5, Tex., U.S.A.
- Investigation of transplantability of the Brown-Pearce tumor, utilizing the yoke sac of *chicks* and the anterior ocular chamber of *rabbits*. Morphological changes will be studied, and as well the effect on the tumor of various chemical agents will be studied. (*Aves* and *Mammalia*) (in collaboration with B. L. NEWTON)
- GALLERA, J. Ph.D. — Inst. d'Histol., Fac. de Med., LAUSANNE, Suisse.
- Transplantation of prechordal material. *Triturus* (*Urodela*)
  - Incubation of *chick* eggs under modified atmospheric conditions. *Gallus* (*Aves*)
  - Experimental researches on the late inductive influence of the prechordal plate and notochordal material on the development of the eyes of *Triton*. (*Urodela*)
  - Transplantations of notochordal material of different ages. *Triturus*
  - The influence of heart extracts on development of the cardiac primordium of the *chick* cultivated in vitro. *Gallus* (*Aves*)
- GALLIEN, L. Dr ès Sc. — Lab. de Biol. anim. (P.C.B. section II), Fac. des Sci., Univ. de Paris, 12, Rue Cuvier, PARIS Ve, France.
- Étude de l'action des hormones sexuelles dans l'embryogénèse sexuelle des *Amphibiens*. *Discoglossus pictus* et *Pleurodeles waltlii*
- GARBER, Mrs B. — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- Quantitative determination of cell shape in tissue culture. *Gallus domesticus* (*Aves*) (in collaboration with P. A. WEISS)
- GARRETT, F. D. Ph.D., Prof. — Dept of Anat., Ohio State Univ., COLUMBUS 10, Ohio, U.S.A. (no data received over this year)
- GAZDA, A. — Zakład Anat. Porównawczej U.J. im. H. Hoyer, KRAKOW, św. Anny 6, Poland.
- The respiratory vessels of the yolk sac in the *trout*. (*Pisces*)
- GEIGY, R. Dr, Prof. — Schweiz. Tropeninstitut, Socinstr. 57, u. Zool. Anstalt der Univ., Rheinsprung 9, BASEL, Schweiz.
- Endokrine Abhängigkeit der Metamorphose von *Sialis lutaria*. (*Insecta*)
  - Analyse der sogenannten genitalen Infektion bei der *afrikanischen Rückfallfieberzecke*, *Ornithodoros moubata*. (*Arachnoidea*)
  - Einfluss der Temperatur auf die „Infektibilität“ der *Gelbfiebermücke*. *Aedes aegypti*, gegenüber *Vogelmalaria*. (*Insecta*)
- GENNARO, Jr J. F. M.S. — Dept of Biol. Sci., Univ. of Pittsburgh, PITTSBURGH 13, Pa, U.S.A.
- The distribution of radio-phosphorous ( $P^{32}$ ) in the developing embryos of *Rana sylvatica* and *Rana pipiens* as demonstrated by radioautographic methods. (Early cleavage to completed operculum) (*Amphibia*, *Anura*) (in collaboration with Miss E. J. RIDLEY)

- b. The distribution of radio-phosphorous ( $P^{32}$ ) in metamorphosing larvae of *R. sylvatica* and *R. pipiens* as shown by radioautographs. (From complete operculum through the larval change) (*Amphibia, Anura*) (in collaboration with Miss E. J. RIDLEY)
- c. The stages and normal development of metamorphosing *R. sylvatica* larvae under natural conditions. (Compared to animals grown in "standard" laboratory environment) (*Amphibia, Anura*) (in collaboration with Miss P. WIRTH and D. B. GOODMAN)
- d. The effect of X-irradiation on tail resorption in *Anura*. (Resorption of tail irradiated entirely and in isolated areas) *R. clamitans* (in collaboration with Miss P. WIRTH)
- e. Cholesterol levels in *anuran* larvae throughout the metamorphic change. *R. sylvatica* (*Amphibia, Anura*) (in collaboration with D. B. GOODMAN)

GHIRETTI, F. Dr Nat.Sc. — Zool. Stat., NAPLES, Italy.

(no data received over this year)

GILBERT, Miss C. M.Sc. — Dept of Zool., Univ. of the Witwatersrand, Milner Park, JOHANNESBURG, South Africa.

- a. A study of the early development (somite stages) of *Elephantulus myurus jamesoni* with special reference to the landmarks in organization. (*Mammalia*)

GILCHRIST, F. G. Dr, Prof. — Lewis and Clark Coll., PORTLAND, Ore., U.S.A.

(no data received)

GILLMAN, J. Prof. — Dept of Anat., Univ. of the Witwatersrand, JOHANNESBURG, South Africa.

- a. Embryology in *baboon*. (*Mammalia*)

GIROUD, A. Prof. — Lab. d'Embryol., Fac. de Méd., 15, Rue Ecole de Méd., PARIS VIe, France.

- a. Développement de l'encéphale et spécialement du diencephale. Etude structurale en rapport avec l'apparition des fonctions. *Rat* (*Mammifères*)
- b. Recherches sur l'influence tératogène des avitaminoses maternelles. *Rat* (*Mammifères*)
- c. Recherches sur l'influence tératogène des intoxications maternelles. *Femme et rat* (*Mammifères*)
- d. Etude des cas tératologiques individuels. *Homo* (*Mammifères*)

GLIMSTEDT, G. Med. Dr, Prof. — Tornblad-Inst. of comp. Embryol., Anat. Dept of the Univ. of Lund, LUND, Sweden.

- a. Development of the ceruminous glands. (*Birds*) (team-work with P. HALL)
- b. Methods for studying the histochemistry of the foetes with isotopes. (*Mammals*) (team-work with R. HÅKANSSON)

GLOOR, H. Ph.D., P.D. — Zool.-vergl. Anat. Inst., Naturw. Fak., Univ. Zürich, Kunstlergasse 16, ZÜRICH 6, Schweiz.

- a. Effects of chemicals on morphogenesis in *Drosophila melanogaster*. (*Insecta*)

GODET, R. — Lab. de Biol. anim. (P.C.B. section II), Fac. des Sci., Univ. de Paris, 12, Rue Cuvier, PARIS Ve, France.

- a. Action des hormones sexuelles dans l'embryogénèse du tractus génital et des gonades chez les *Insectivores*. *Talpa europaea* L.

- GODINA, G. Prof. — Inst. of human Anat., Corso Massimo d'Azeglio 52, TORINO, Italy.
- Study of the histogenesis of the various layers of the cortex of the different areas of the brain during embryonic and fetal development. (Golgi's method and Nissl staining). *Sheep (Mammals)*
  - Development of neurons and glia cells in the cerebral cortex. *Sheep (Mammals)*
  - Development of the regulatory mechanism of the blood flow in large arteries. *Pig (Mammals)*
- GODLEWSKI, H. G. Med. Dr — Inst. of Histol. and Embryol., Med. Acad., GDAŃSK, Poland.
- The ultraviolet- and X-rays influence on spermatozoa under various experimental conditions. *Rana temporaria (Amphibia)*
- GOLDSMITH, E. D. Dr, Prof. — Dept of Histol., Coll. of Dentistry, New York Univ., 477, First Ave, NEW YORK 16, N.Y., U.S.A.  
(no data received)
- GONTCHAROFF, Mlle M. Lic. ès Sc. — Lab. d'évolution des êtres organisés, Fac. des Sci. de Paris, 105 Boulevard Raspail, PARIS VIe, France.
- General investigations. Partial regeneration of head. (*Nemertinea, Lineidae*)
  - Spermatogenesis, oogenesis and oviposition. (*Lineidae, Vermes*)
- GONZALEZ MARINO, R. B.S. — Dept de Histol. y Embriol., Fac. de Med., MONTEVIDEO, Uruguay, S. América.
- Experimental study of the development of the heart. *Bufo arenarum (Amphibia)* (in collaboration with W. A. FERREIRA)
  - Sites of lipase activity in the chick embryo. (*Aves*) (together with the related work of W. BUNO and Miss J. ALVAREZ GUTIÉRREZ)
- GOODHART, C. B. M. A. — Dept of Zool., Downing St, CAMBRIDGE, England.
- The nature and mode of action of the evocator in *Amphibia*.
  - The motive power behind morphogenetic movements. (*Amphibia*)
  - Resemblances between regenerative and embryonic growth, and malignant tumours. (*Amphibia*)
  - Physiology of vertebrate development.
- GOODMAN, D. B. B.S. — Dept of Biol. Sci., Univ. of Pittsburgh, PITTSBURGH 13, Pa, U.S.A.
- The stages and normal development of metamorphosing *R. sylvatica* larvae under natural conditions. (Compared to animals grown in "standard" laboratory environment). (*Amphibia, Anura*) (in collaboration with Miss P. WIRTH and J. F. GENNARO Jr.)
  - Cholesterol levels in *anuran* larvae throughout the metamorphic change. *R. sylvatica (Amphibia, Anura)* (in collaboration with J. F. GENNARO Jr.)
- GOODRICH, H. B. B.S., M.A., Ph.D., Prof. — Dept of Biol., Shanklin Lab., Wesleyan Univ., MIDDLETOWN, Conn., U.S.A.  
(no data received over this year)
- GÖSZWALD, K. Dr Phil., Dr Lubil. rer. nat., Prof. — Zool. Inst. der Univ. Würzburg, Naturw. Fak., Röntgenring 10, WÜRZBURG, Deutschland.

- a. Embryologische Studien an *Ameisen*. *Formica rufa* und andere Arten.
  - b. Determination der *Ameisen-Kasten*. *Formica rufa*, *Lasius niger* u.a. (*Formicidae*)
  - c. Parthenogenese. (*Formicidae*)
  - d. Künstliche Begattung. Verschiedene *Lepidoptera*, *Coleoptera*, *Hymenoptera* (*Arthropoda*)
- GOTHIE, Miss S., Dr Méd., Dr ès Sc. — Lab. d'Hormonol. et Cytol. expér., Ecole des Hautes Etudes, Univ. Hôpital Broca, III Rue L. M. Nordmann, PARIS 13e, France.
- a. Tensioactive substances and evocation. (*Mammals*) (in collaboration with R. MORICARD)
  - b. Cinematography: cleavage in *Pleurodeles*. (*Amphibians*) (in collaboration with R. MORICARD)
- GOTO, T. M.A. — Biol. Inst. of Keio Univ., Hiyoshi, Kohoku, YOKOHAMA, Japan.
- a. Studies on the pterin substances upon the development of *Bombyx mori* and *Rana nigromaculata*. (*Insecta and Amphibia*)
- GRAUMANN, W. Dr Med. — Anat. Inst. der Univ., Burgstr. 51, GÖTTINGEN, Germany.
- a. Histotopographie der Knochenentstehung im Bindegewebe. *Homo* (*Mammalia*)
- GREEN, Mrs E. U. Ph.D. — Lankenau Hosp. Res. Inst. and Inst. for Cancer Res., Burholme Ave Fox Chase, PHILADELPHIA 11, Pa., U.S.A.
- a. Cytological and cytochemical studies on arrested partial blastulae lacking functional chromosomes. *Rana* (*Amphibia*) (in collaboration with R. W. BRIGGS and T. KING)
  - b. Morphological, cytological and cytochemical studies of the effects of carcinogen-protein conjugates on cleavage and early development. *Rana* (*Amphibia*)
- GREEN, S. H. M.B., Ch.B. — Dept of Anat., The Med. School, Birmingham Univ., Edgbaston, BIRMINGHAM 15, England.
- a. The study of oogenetic function. *Monkeys* and *Ferrets* (*Mammals*)
- GREGG, J. R. Ph.D. — Dept of Zool., Columbia Univ., NEW YORK City 27, N.Y., U.S.A.
- a. Anaerobic metabolism of normal and hybrid *amphibian* gastrula explants. *Rana pipiens* and *R. pipiens* x *R. sylvatica*
- GREULICH, R. — Dept of Anat., McGill Univ., MONTREAL, P.Q., Canada.
- a. The development of bones and teeth as shown by radioautographs with the help of radio-phosphorus and radio-carbon. (*Vertebrates*) (in collaboration with C. P. LEBLOND and L. F. BELANGER from Dept of Histol. Univ. of OTTAWA)
- GRIGNON, G. — Lab. d'Anat. et d'Histol., Dépt d'Embryol., Fac. de Méd., Inst. Anat., 31, Rue Lionnois, NANCY (Meurthe & Moselle), France.
- a. Développement de l'hypophyse. (*Oiseaux*)
- GROBSTEIN, C. Ph.D. — Nat. Cancer Inst., Developmental Physiol. Unit., BETHESDA, Md, U.S.A.
- a. The behavior of tissues from the early *mouse* embryo in tissue culture and in the anterior chamber of the eye. (*Mammalia*)

- GRODZIŃSKI, Z. Prof. — Zakład Anat. Porównawczej U.J. im. H. Hoyer, KRAKOW, św. Anny 6, Poland.
- Physico-chemical properties of the yolk. *Lacerta (Reptilia)* and *Gallus (Aves)*
  - Heart rate and temperature. *Salmo (Pisces)*
- GRUENWALD, P. M.D., Asst Prof. — Dept of Pathol., State Univ. of New York, Med. Center at New York, 451 Clarkson Ave, BROOKLYN 3, N.Y., U.S.A.
- Embryonic development of selenium-induced malformations. *Chick (Aves)*
  - Systematic investigation of current cases of prenatal disease and malformation in autopsy material. (Part of "Brooklyn Survey of Neonatal Pathology"). *Man (Mammalia)*
- GRÜNEBERG, H. Ph.D., M.D., D.Sc. — Dept of Genet., Univ. Coll. London, Gower St, LONDON W.C. 1, England.
- Developmental genetics of the mouse skeleton; mutant genes and natural polymorphism of wild populations. *Mus musculus (Mammalia)*
  - Developmental genetics of the mouse skeleton; crosses between pure lines, effects of major genes (short-ear, congenital hydrocephalus, fidget and others). *Mus musculus (Mammalia)*
- GRÜNTHAL, E. Dr — Hirnanatom. Inst. der Psychiatr. Univ.-klinik, Med. Fak., Waldau, BERN, Schweiz.
- Hirnentwicklung: Bauplan von Zwischenhirn und Endhirn. *Huhn (Vögel), Maus und Mensch (Säugetiere)*
- GUARDABASSI, A. Dr — Inst. of comp. Anat., Via Giovanni Giolitti 34, TORINO, Italy.
- Bilateral and unilateral removal of the ear vesicle to analyse the developmental relationships between the latter and the lime sacs. *Rana esculenta, Bufo vulgaris (Amphibia)* (in collaboration with Miss M. SACERDOTE)
  - Study of the course and connections of the retinal fibers following rotation of the eye anlage in embryos of *Bufo vulgaris* and *Rana esculenta*. (*Amphibia*)
  - Autoplastic interchange of the eye anlagen (left to right and viceversa) to study the course and arrangement of the retinal fibers. *Rana esculenta, Bufo vulgaris (Amphibia)*
- GUBBINS, J. F. A.B., M.A., Prof. — Dept of Biol., Gonzaga Univ., SPOKANE 11, Wash., U.S.A.
- Comparative developmental morphology of dog skulls. *Canis familiaris (Mammalia)*
- GUILLOIN, G., — Lab. d'Hormonol. et Cytol. expér., Ecole des Hautes Etudes, Univ. Hôpital Broca, III Rue L. M. Nordmann, PARIS 13e, France.
- Oxydoreduction potential reduction of methylene blue in sperm. (*Amphibians*) (in collaboration with R. MORICARD)
- GUSTAFSON, T. Fil.lic. — Wenner-Grens Inst. for exper. Biol., Norrullsgatan 16, STOCKHOLM 23, Sweden.
- Continued studies on the protein chemistry of normal and lithium-treated developing sea urchin eggs. (Studies on amino acids, peptides and enzymes). *Paracentrotus lividus, Psammechinus miliaris* and other sea urchins (*Echinoderms*)



- b. Continued studies on the "dorsoventral" (oral-aboral) organization of the unfertilized sea urchin egg. *Echinocardium cordatum* and other sea urchins (*Echinoderms*)
- GUYÉNOT, E. Dr Med., Dr Sc. — Inst. de Zool. et Anat. comp., Univ. de Genève, Rue de Candolle, GENÈVE, Suisse.  
(no data received over this year)
- GYLENSTEN, L. J. W. Med.lic. — Hist. Dept, Embryol. Dept, Karolinska Inst., Solnavägen 1, STOCKHOLM 60, Sweden.
- a. Development of the musculature of the urinary bladder of *homo*. (*Mammalia*)
- b. Postnatal histogenesis of the lymphatic system under the influence of experimental infections, exposures to X-ray and after thymectomy. *Guinea pig* (*Mammalia*)
- c. Functional and morphological neurogenesis in *duplicitas* experimentally induced by implantation of a secondary dorsal blastoporal lip into the ventral marginal zone of young gastrulae. *Triturus*, *Xenopus* (*Amphibia*) (started at the Hubrecht Laboratory, Utrecht, Holland)
- HADORN, E. Dr Phil., Prof. — Zool.-vergl. Anat. Inst., Naturw. Fak., Univ. Zürich 6, Schweiz.
- a. Regeneration and differentiation of the notochord. *Triton* species (*Amphibia*)
- b. Merogony-experiments. *Triton* species (*Amphibia*)
- c. Field organization of the genital imaginal disc. *Drosophila* species (*Insecta*)
- d. Developmental analysis of lethal factors. *Drosophila* species (*Insecta*)
- HAFFEN, Miss K. Lic. ès Sc. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- a. Étude du développement et de la régression du mésonéphros chez l'embryon d'Oiseau. *Gallus* (*Aves*) (En collaboration avec Et. WOLFF)
- HAGET, A. — Fac. des Sci. de Bordeaux, 40, Rue Lamartine, TALENCE (Gironde), France.
- a. Recherches expérimentales sur le développement des *Insectes*: Etude des facteurs de la morphogenèse embryonnaire.
- HÄGGQVIST, G. Prof. — Histol. Inst., Embryol. Dept, Karolinska Inst., Solnavägen 1, STOCKHOLM 60, Sweden.
- a. Induction of polyploidy in *frogs* and *mammals*.
- HAIJE, Miss S.C.A. — Hubrecht Lab., Internat. Embryol. Inst., Janskerkhof 2, UTRECHT, Holland.
- a. The development of the pineal body in the *chick*. (*Aves*)
- HÅKANSSON, R. Tandlakare — Tornblad-Inst. of comp. Embryol., Anat. Dept of the Univ. of Lund, LUND, Sweden.
- a. Methodes for studying the histochemistry of the foetes with isotopes. (*Mammals*) (team-work with G. GLIMSTEDT)
- HALE, L. J. B.Sc. — Dept of Zool., Univ. of Edinburgh, West Mains Rd, EDINBURGH 9, Scotland.
- a. The growth of isolated scleral bone primordia as chorio-allantoic grafts and in culture media. *Gallus domesticus* (*Aves*)
- b. Histochemical studies on the early development of the scleral bone. *Gallus domesticus* (*Aves*)

- HALL, E. K. M.D., Prof. — Dept of Anat., School of Med., Univ. of Louisville, 101, West Chestnut Str., LOUISVILLE 2, Ky, U.S.A.  
(no data received over this year)
- HALL, P. Med.kand. — Tornblad-Inst. of comp. Embryol., Anat. Dept of the Univ. of Lund, LUND, Sweden.
- a. Development of the ceruminous glands. (*Birds*) (team-work with G. GLIMSTEDT)
- HALL, T. S. Ph.D., Assoc. Prof. — Dept of Zool., Grad. School of Arts and Sci., Washington Univ., Lindell and Skinker Aves, ST LOUIS 5, Mo., U.S.A.
- a. Effect of chemical inhibitors on the development of *amphibian* eggs. *Rana* and *Amblystoma*
- HAMA, T. M.A., Dr — Biol. Inst. of Keio Univ., Hiyoshi, Kohoku, YOKOHAMA, Japan.
- a. Morphogenetical and chemical analysis of the *amphibian* organizer. *Triturus pyrrhogaster*
  - b. Pterins in the *silkworm* and their significance in biochemical genetics. *Bombyx mori* (*Insecta*)
- HAMBURGER, V. Ph.D., Prof. — Dept of Zool., Grad. School of Arts and Sci., Washington Univ., Lindell and Skinker Aves, ST LOUIS 5, Mo., U.S.A.
- a. Control of proliferation and differentiation of the nervous system. *Chick* (*Aves*) (in collaboration with R. LEVI-MONTALCINI)
  - b. Response of embryonic nervous system to implantation of *mouse* tumors. *Chick* embryo (*Aves*) (in collaboration with Miss R. LEVI-MONTALCINI)
  - c. Stage series of *chick* embryo. (*Aves*)
- HAMILTON, H. L. Ph.D., Prof. — Dept of Zool. and Entomol., Div. of Sci., Iowa State Coll., AMES, Iowa, U.S.A.
- a. Revision of Dr Frank R. LILLIE's textbook of embryology. "The Development of the *Chick*". *Gallus domesticus* (*Aves*)
  - b. Experiments on the visceral pouches of the *chick* to ascertain their derivatives and especially the origin of the parathyroids. *Gallus domesticus* (*Aves*) (in collaboration with Miss J. SCHRIER)
- HAMILTON, W. J. Prof. — Anat. Dept, Charing Cross Hosp. Med. School, 62, Chandos Place, LONDON W.C. 2, England.
- a. Investigation on the growth and histology of the placenta in situ from the third month until term. *Homo* (*Mammalia*) (in collaboration with J. D. BOYD)
  - b. Growth and atresia of the ovarian follicles of the *ferret*. (*Mammalia*) (in collaboration with R. J. HARRISON)
  - c. The development of the *hamster* for the first seven days of pregnancy.
  - d. Histology of the oestrus cycle of the *goat*. (*Mammalia*) (in collaboration with R. J. HARRISON)
- HAMMOND, W. S. Ph.D., Prof. — Dept of Anat., School of Med., State Univ. of New York, SYRACUSE, N.Y., U.S.A.
- a. Development of the autonomic nervous system. *Gallus domesticus* (*Aves*) (in collaboration with C. L. YNTEMA)
  - b. Differentiation of sensory neurons. *Gallus domesticus* (*Aves*)
  - c. Development of the thymus. *Gallus domesticus* (*Aves*)
  - d. Effects of sulfa drugs on *mammalian* embryo. *Mus musculus* (in collaboration with C. L. YNTEMA)

- HAMPÉ, A. Lic. ès Sc. — Lab. de Zool. de la Fac. des Sciences et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- a. Effet de faibles doses d'hormones femelles sur le développement de testicule de *poulet*. Différence entre la première et la deuxième poussée de cordons sexuels, prolongation expérimentale de la première poussée. *Gallus (Aves)* (En collaboration avec Et. WOLFF).
- HANSON, E. J. Ph.D. — M.R.C. Biophysics Res. Unit, King's Coll., Strand, LONDON W.C. 2, England.
- a. Spermatogenesis of *Vivipara vivipara*, studied by classical techniques and by phase-contrast, polarised light, ultra-violet and electron microscopy. (*Gastropoda*) (in collaboration with J. T. RANDALL and S. T. BAYLEY)
  - b. Cytogenesis of *vertebrate* striped muscle, studied in the electron microscope, and with the aid of tissue culture techniques. (in collaboration with J. T. RANDALL and S. T. BAYLEY)
- HARDE, ... Dr — Zool. Inst. der Westfälischen Landes-Univ., Robert Koch Str. 31, MÜNSTER, Westf., Deutschland.  
(no data received over this year)
- HARDY, Miss M. H. M.Sc., Ph.D. — Commonwealth Sci. and Industr. Res. Org., McMaster Anim. Health Lab., Parramatta Rd, GLEBE, N.S.W., Australia. (Guest-worker from C.S.I.R.O., Wool. Biol. Lab., 17 Randle St, SYDNEY, N.S.W.)
- a. Induction of hair follicle formation. *Mouse* and *sheep (Mammals)* (in collaboration with Miss P. DAVIDSON)
  - b. Pigmentation processes in skin and hair in tissue culture. *Mouse (Mammals)* (in collaboration with Miss P. DAVIDSON)
  - c. Histochemistry of hair follicle development *in vivo* and *in vitro* — nucleic acids, phosphatases, sulphhydryl groups. *Mouse* and *sheep*
- HARKMARK, W. cand. Med. — Anat. Inst., Univ., OSLO, Norway.
- a. Morphological and experimental investigation of the pontine and inferior olivary nuclei in *birds*. *Gallus domesticus*
- HARRIS, M. A.B., Ph.D., Prof. — Dept of Zool., Univ. of California, BERKELEY 4, Cal., U.S.A.
- a. Survival of transplanted pituitaries in *Amphibia* (homoplastic and xenoplastic). *Hyla regilla* and *Triturus torosus* (in collaboration with R. M. EAKIN)
- HARRISON, R. G. M.D., Ph.D., Sc.D., L.L.D., Prof. (Emer.) — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- a. Development of limbs of *Amphibia* with reference to the roles played by ectoderm and mesoderm. *Amblystoma*, various species.
  - b. Induction and symmetry relations in the development of the internal ear. *Amblystoma punctatum (Amphibia)*
- HARRISON, R. J. M.A., D.Sc., M.B.B.Chir. — Anat. Dept, Charing Cross Hospital Med. School, 62, Chandos Place, LONDON W.C. 2, England.
- a. Early development. (*Mammals*)
  - b. Changes in the ovary. (*Mammals*)
  - c. Growth and atresia of the ovarian follicles of the *ferret*. (*Mammals*) (in collaboration with W. J. HAMILTON)
  - d. Histology of the oestrus cycle of the *goat*. (*Mammals*) (in collaboration with W. J. HAMILTON)

- HARTMANN, J. F. Ph.D., Prof. — Inst. of Anat., School of Med., Univ. of Minnesota, MINNEAPOLIS 14, Minn., U.S.A.  
(no data received over this year)
- HARTUNG, E. W. Ph.D. — Dept of Zool., Rhode Island State Coll., KINGSTON, R.I., U.S.A.
- a. Factors influencing tumor incidence in *Drosophila melanogaster*. A study of the developmental, environmental, and genetic factors operative in the development of so-called "melanin tumors" in the [fruit fly. (*Insecta*)
- HARTWIG, H. Dr Phil. — Inst. f. Entw.physiol., Kerpenerstr. 13, KÖLN-Lindenthal, Deutschland.
- a. Analyse der einzelnen unter dem Einfluss des Schilddrüsenhormons erfolgenden Differenzierungs- bzw. Reduktionsvorgänge. (*Vertebraten*)
- HARVEY, Mrs. E. B. A.B., M.A., Ph.D., Dr — Dept of Biol., Princeton Univ., PRINCETON, N.J., U.S.A.
- a. Centrifuging eggs, and development of fractions obtained by centrifugal force. Parthenogenetic merogony. (*Echinodermata*)
  - b. Monograph on *Arbacia punctulata*, including classified compilation of all experimental work. (*Echinodermata*)
- HASEGAWA, M. M.A. (Rigakushi) — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.
- a. Restitution des Auges bei *Misgurnus fossilis*. (*Pisces*)
  - b. Restitution des Auges nach sukzessiver Entfernung von einzelnen Augenhäute. *Triturus pyrrhogaster* (*Amphibia*) (unter Mitwirkung von T. SATO)
  - c. Linsenregeneration bei *Misgurnus fossilis*. (*Pisces*) (unter Mitwirkung von T. SATO)
- HAY, Mlle D. Lic. ès Sc. — Lab. de Zool. de la Fac. des Sciences et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Inst. de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- a. Étude des Free-Martins chez les Bovides. *Bos taurus* (*Mammalia*)
- HAY, E. D. — Dept of Zool., Univ. of Illinois, URBANA, Ill., U.S.A.
- a. Contribution of epidermis to the amphibian limb regeneration blastema as demonstrated by transplantation of heteroploid epidermis.
- HAYES, E. R. Ph.D., Prof. — Dept of Anat., Ohio State Univ., COLUMBUS 10, Ohio, U.S.A.  
(no data received over this year)
- HEATH, H. D. — Dept of Biol. Sci., Stanford Univ., STANFORD, Cal., U.S.A.
- a. Experiments to test the ectodermal origin of the cells of the regeneration blastema of the limb. (*Amphibians*)
- HEAYSMAN, Miss J. E. M., B.Sc. — Queen Mary Coll., Univ. of London, Mile End Rd, LONDON E. 1, England.
- a. Some of the factors involved in the development of the shell in *Helix pomatia*, *Paludina vivipara*, *Nucella lapillus*. (*Mollusca*)
- HEESCH, Miss W. H. T. van — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Development of head. *Pleuronectes* (*Teleostei*)
  - b. Analysis of lithium action. *Limnaea stagnalis* (*Gastropoda*) (in collaboration with G. A. van ARKEL, Miss E. v. d. BROEK, Mrs A. S. DUYKER—de BEER, J. C. N. KOK, J. W. KUIPER, Miss R. P. van LOO, G. D. NIJENHUIS, Miss J. E. H. SMIT and W. L. van UTRECHT)

- HEILBRUNN, L. V. Ph.D., Prof. — Dept of Zool., Univ. of Pennsylvania, PHILADELPHIA 4, Pa, U.S.A.  
(no data received over this year)
- HEIMANN, H. Dr Med. — Hirnanat. Inst. der Psychiatr. Univ.-klinik, Med. Fak., Waldau, BERN, Schweiz.  
a. Endhirnentwicklung. (*Teleostier*)
- HEMMINGS, W. A. B.A. — Dept of Zool., Univ. Coll. of N. Wales, BANGOR, Caernarvonshire, Great Britain.  
a. Study of the immunological relations of mother and foetus in *mammals*.
- HENDERSON, Miss M. B.Sc. — Dept of Zool., Univ. Coll. of N. Wales, BANGOR, Caernarvonshire, Great Britain.  
a. Immunological relations of mother and young in *mammals*. *Rabbit*
- HENKE, K. Dr Phil., Prof. — Zool. Inst. der Univ. Göttingen, Mathem.-Naturw. Fak., Nikolausbergerweg 75, GÖTTINGEN, Deutschland.  
a. Embryonale und post-embryonale Entwicklungsgeschichte, Entwicklungsphysiologie und Genetik bei *Insekten* und *Vögel*. (mit Mitarbeitern)
- HENLEY, Miss C. Ph.D. — Dept of Zool., Univ. of North Carolina, CHAPEL HILL, N.C., U.S.A.  
a. An investigation of the cytological and morphological effects of low temperature on fertilized eggs of the *annelid*, *Chaetopterus pergamentaceus*. (in collaboration with D. P. COSTELLO)  
b. Studies on the effects of radioactive phosphorus on mitosis in epithelial cells of *Amblystoma punctatum* larvae. (*Amphibia*) (in collaboration with D. P. COSTELLO)
- HERLANT—MEEWIS, Mme H. Dr Zool. — Lab. de Zool., Fac. des Sci., Inst. de Zool. Torley-Rousseau, Univ. libre de Bruxelles, 50, Av. F. D. Roosevelt, BRUXELLES, Belgique.  
a. Etude des lois de la scissiparité chez les *Aeolosomatidae* (*Oligochètes limicoles*)  
b. Etude histochimique et histophysiologique de la scissiparité chez les *Aeolosomatidae*. Influence des facteurs externes et internes. Action des substances de croissance: vitamines acides aminés. (*Oligochètes*)  
c. L'enkystement chez les *Aeolosomatidae*. Etude histochimique et histophysiologique du phénomène d'enkystement observé au Canada chez différents *Aeolosomatidae*. (*Oligochètes*)  
d. Etude des éléments régénérateurs lors de la scissiparité et de la régénération expérimentale chez les *Oligochètes*.  
e. La régénération expérimentale du germen chez *Lumbricillus lineatus* (*Enchytraeidae*) Formation du germen à partir du soma, lors de la régénération des *Oligochètes*.  
f. La gemmulation chez *Suberites domuncula* (*Spongiaires*). Les gemmules surtout caractéristiques des éponges d'eau douce, sont étudiées ici chez une forme marine.
- HERRICK, Ch. J. Dr, Prof. (Emer.) — Univ. of Chicago, 236, Morning Side Drive, GRAND RAPIDS 6, Mich., U.S.A.
- HERRMANN, H. Dr, Prof. — Univ. of Colorado, Med. Center, Dept of Pediatrics, 4200 east Ninth Ave, DENVER 7, Col., U.S.A.  
a. Chemistry of muscle differentiation, determination of actin and myosin and phosphate fractions in muscle of *chick* embryos after the 7th day of development (concluded). (*Aves*) (in collaboration with B. J. NEUKOM and M. J. SCHNEIDER)

- b. Determination and fractionation of nucleoproteins and determination of enzymes in *chick* somites from the 2nd to the 5th day of incubation and in differentiating *chick* muscle from the 7th day of incubation to hatching. (*Aves*) (in collaboration with B. J. NEUKOM and M. J. SCHNEIDER)
- c. Chemical fractionation of cell nuclei and mitochondria of differentiating muscle of *chick*. (*Aves*) (in collaboration with B. J. NEUKOM and M. J. SCHNEIDER)
- d. Histological examination of muscle development including quantitative determinations of volume of somite columns, of cell number, and of mitotic index of somites. (*Aves*) (in collaboration with B. J. NEUKOM and M. J. SCHNEIDER)
- e. Study of differentiation of *chick* somites in explants (Spratt technique). (*Aves*) (in collaboration with L. LUBCHENCO, J. MCKENZIE and U. ROTHFELS)
- f. Study of developmental disturbances related to nutritional deficiencies investigated by application of anti-vitamins and anti-amino acids to the intact egg and to explants (somites). In particular, it will be attempted to define the factors which maintain the balance between myotome, sclerotome and dermatome during differentiation of the somite and are required for the normal development of the retina (possible connection with retrolental fibroplasia of the premature *human* infant) (*Aves*) (in collaboration with L. LUBCHENCO, J. MCKENZIE and U. ROTHFELS)

HERTIG, A. T. M.D., Prof. — Harvard Univ., Med. School., Dept of Pathol., 25, Shattuck Str., BOSTON 15, Mass., U.S.A.

— Boston Lying - in Hospital, 221, Longwood Ave, BOSTON 15, Mass., U.S.A.

— Free Hospital for Women, 245, Pond Ave., BROOKLINE, Mass.,

- a. Development of *Human* ova from fertilization to 14 days (first missed menstrual period). (*Mammalia*) (in collaboration with J. ROCK)
- b. A morphologic description of 3 segmenting *human* embryos; a 2-cell tubal ovum, a 30-cell early blastula (4 days-uterine), and a 60-cell blastula ( $4\frac{1}{2}$ —5 days-uterine). (*Mammalia*) (in collaboration with J. ROCK)

HETTIG, R. A. M.D., Prof. — Dept of Anat., Coll. of Med., Baylor Univ., 1200 M.D. Anderson Blvd, Texas Med. Center, HOUSTON 5, Tex., U.S.A.

- a. The production of anomalies in *rat* embryos by nitrogen mustards. *Mus norvegicus* (*Mammalia*)

HEUSER, C. H. Prof. (Emer.) — Dept of Anat., Univ. of Georgia, Med. School, AUGUSTA, Ga, U.S.A.

- a. Morphology of early *human* and other *primate* embryos. *Homo*, *Pan*, *Papio* and *Macaca rhesus*

HEYN, C. B. Cand.Med. — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.

- a. Permeability of the placenta in *rat* and *Guinea pig*. (*Mammalia*) (in collaboration with J. DANKMEIJER)

HILL, J. P. F.R.S., Prof. (Emer.) — Dept of Embryol., Univ. Coll. London, Gower Str., LONDON W.C. 1, England. Private addr.: "Kanimbla", Dollis Ave, Finchley, LONDON N. 3, England.

- a. Studies in *mammalian* development, especially placentation. (Various *Mammalia*)

- HILLEMANN, H. H. M.A., Ph.D., B.S. — Dept of Zool., Oregon State Coll., CORVALLIS, Ore., U.S.A.
- Sodium, potassium and magnesium in the developing *hamster* embryo. *Cricetus auratus* (*Mammalia*)
  - Ossification of the internal and middle ear in the *Golden Hamster*. *Cricetus auratus* (*Mammalia*)
  - Morphogenesis of the placenta of the *Golden Hamster*. *Cricetus auratus* (*Mammalia*)
- HILLER, S. M.D. — Inst. of Histol. and Embryol., Med. Acad., GDAŃSK, Poland.
- Regeneration in *Amphibians*. The influence of inanition on that phenomenon. (in collaboration with E. H. WISKONT and T. KROTKIEWICZ)
- HINTZSCHE, E. Dr Med., Prof. ord. — Anat. Inst., Bühlstr. 26, BERN, Schweiz.
- Anorganischer Stoffwechsel, Fermentchemische Untersuchungen. *Säuger*, spez. *Mensch*
  - Experimentelle Studien über Zellvermehrung in Gewebekulturen. Einwirkung fördernder und hemmender Substanzen. *Huhn*, *Kaninchen* und *Mensch* (*Aves* und *Mammalia*)
- HJELLMAN, G. M.D., Prof. — Dept of Anat., Fac. of Med., Univ. of Helsinki, HELSINKI, Finland.
- Appearance of the heparinocytes (*Human* and other *mammalian* embryos).
- HOADLEY, L. A.B., Ph.D., A.M., Prof. — Biol. Lab's, Harvard Univ., Divinity Ave, CAMBRIDGE 38, Mass., U.S.A.
- Origin of pattern in the development of the nervous system. A study of the temporal and spacial relations of differentiation in the central nervous system. *Gallus domesticus* (*Aves*)
  - Systematic study of the history of the appearance of the nervous elements and a study of the behavior in grafts (esp. composite). (*Vertebrates*)
- HOCHSTETTER, F. Dr, Prof. (Emer.) — Pokornygasse 23, WIEN XIX/117, Österreich.
- HOFFMAN, H. B.A., M.A. — Dept of Zool., Univ. of California, LOS ANGELES 24, Cal., U.S.A.
- Occurrence of alpha-beta globulins in the serum of the *chick* embryo. (*Aves*)
- HOGEWONING, C. H. — Lab. for Exper. Histol., Fac. of Med., Univ. of Leyden, Wassenaarseweg, Boerhaavekwartier, LEIDEN, Holland.
- Influence of vitamin D. on the calcification of developing bone-tissue in explants. *Gallus domesticus* (*Aves*)
  - Influence of estrogens on the development and calcification of embryonic endosteal tissue in vitro. *Gallus domesticus* (*Aves*)
- HOGUE, Miss M. J. A.B., Ph.D., Assoc. Prof. — Dept of Anat., Univ. of Pennsylvania, School of Med., PHILADELPHIA 4, Pa, U.S.A.
- Study of neurons and glia cells from the different parts of the brain, especially from the cerebellum. Also, the survival of neurons after death of the fetus. *Chick*, *human* fetuses and newborn babes and adult *monkey rhesus* and *spider* (*Higher Vertebrates*) (in collaboration with S. C. WILLIAMS)

- HOLM, K. Å. Dr Phil. — Uppsala Univ., Zool. Inst., UPPSALA, Sweden.
- a. Experimental investigation of the *spider* embryo (determination, prospective significance of embryonic areas). (*Araneae, Arthropoda*)
- HOLMDAHL, D. E. Med. Dr, Prof. — Anat. Inst., Univ. Uppsala, UPPSALA, Sweden.
- a. Untersuchungen über die frühe Körperentwicklung. (*Vertebraten*)
- HOLMGREN, N. F. Dr Sc., Prof. (Emer.) — Zootom. Inst., Univ. of Stockholm, 116, Drottninggatan, STOCKHOLM, Sweden.
- a. Pronephros of *Myxinoids*. *Myxine glutinosa, Heptatrema hexatrema* (*Cyclostomata*)
- HOLST CHRISTENSEN, P. J. Dr Phil. — Univ. Inst. for Alm. Zool., Universitetsparken 3, COPENHAGEN Ø, Denmark.
- a. Studies on the embryology of *Insects*. *Cochlidion limacodes* (*Lepidoptera*)
  - b. Studies on the development of *mammalian* lungs. *Talpa europaea* (*Insectivora*)
- HOLTER, H. Ph.D. — Cytochem. Dept, Carlsberg Lab., 8, Gl. Carlsbergvej., COPENHAGEN Valby, Denmark.
- a. Nature of physiological gradient in *sea urchin* embryos. *Paracentrotus*
  - b. Oxygen consumption at fertilization. *Sea urchins* (*Echinodermata*)
- HOLTFRETER, J. K. F. Ph.D., Prof. — Dept of Biol., Coll. of Arts and Sci., Univ. of Rochester, ROCHESTER 3, N.Y., U.S.A.
- a. Effects of carcinogens on successive developmental stages of *amphibian* embryos. *Amblystoma, Rana pipiens, Xenopus laevis* (*Anurans, Urodeles*)
  - b. Chromatographic studies of amino acids in the eggs and embryos of various species. *Amblystoma, Rana, Xenopus* (*Amphibia*) and many *Invertebrates*
- HOLTZER, H. Ph.B., B.S. — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- a. Development of regional functional properties in the spinal cord, tested by defect and transplantation experiments. (*Amphibia, Urodela*) (under direction of P. A. WEISS)
  - b. Selectivity in outgrowth and terminations of embryonic nerves. (*Vertebrates*) (under direction of P. A. WEISS)
- HOOKER, D. Ph.D., Prof. — Dept of Anat., School of Med., Univ. of Pittsburgh, PITTSBURGH 13, Pa., U.S.A.
- a. Study of the physiological responses of *human* fetuses. (*Mammalia*)
- HORI, R. — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.
- a. Oxidation-reduction pattern in early development of the *fish*. *Oryzias latipes*
- HORN, E. C. B.S., A.M., Ph.D., Prof. — Dept of Zool., Duke Univ., DURHAM, N.C., U.S.A.
- a. Regeneration of lens from dorsal iris. *Pseudacris nigrita feriarum* (*Amphibia*)
  - b. Organogenesis of developing *ammocoetes* and changes at metamorphosis. *Ichthyomyzon* (species undescribed) (*Cyclostomata*) (in collaboration with J. R. BAILEY)
  - c. A comparative study of *amphibian* skeletal changes through metamorphosis. *Amblystoma maculatum, Pseudacris nigrita feriarum*



- d. Experimental production of 4th arch anomalies in *chick* embryos. An attempt is being made to determine some of the factors involved in the disposition of aortic arches in *birds* as compared to *mammals*. *Domestic chick* (*Aves*)
- HORST, C. J. van der D.Sc., Prof. — Dept of Zool., Univ. of the Witwatersrand, Milner Park, JOHANNESBURG, South Africa.
- a. *Elephantulus myurus jamesoni* going into anoestrus. (*Mammalia*)
- HORST—ROLLHÄUSER, Mrs J. ter Dr rer. nat. — Anat. Inst. der Univ., Robert Koch Str. 6, MARBURG/Lahn, Deutschland.
- a. Induktionsleistungen abgetöteter Teile der Medullarplatte und des Urdarmdaches von *Triton* im Explantat. Abtötung durch Kochen und Alkoholbehandlung, Explantieren in isoliertes Gastrula-Ektoderm nach HOLTFRETER. *Triton alpestris* (*Amphibia*)
- b. Reaktion verschieden vorbehandelten Gastrula-Ektoderms auf denselben heterogenen Induktor. Behandlung der Gastrulae mit hormonen, NaF, Butylalkohol u.a. Mit dem isolierten Ektoderm dieser Gastrulae werden Stücke erwachsener *Triton*-Leber umhüllt. *Triton alpestris* (*Amphibia*)
- HÖRSTADIUS, S. Fil. Dr, Prof. — Uppsala Univ., Zool. Inst., UPPSALA, Sweden.
- a. Determination in the sea urchin egg: Analysis of the gradients and the processes behind them. Several species of sea urchins (*Echinodermata*)
- b. Determination within the head of the *Axolotl*. (*Amphibia*)
- HOWORKA, E. J. M.D., Ph.D. — Histol. and Embryol. Inst. of the Acad. of Med. Poznań, ul. Swieckiego 6, Collegium Anatomicum, POZNAŃ, Poland.
- a. Tissue-culture of human placental villi. (*Primates*)
- b. Development of the placenta of *Talpa europea*. (*Insectivora*)
- c. On the content of intervillous space of the human placenta. (*Primates*)
- HUBER, W. Dr ès Sc. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de L'Université, STRASBOURG, France.
- a. Développement de la tête. Etude morphologique et expérimentale de développement de la forme encéphalique en rapport avec le crâne; courbure et redressement de la tête; position des yeux. Analyse de races à forme encéphalique aberrante. *Gallus domesticus* (*Aves*) (en collaboration avec Et. WOLFF)
- HUBL, H. Dr rer. nat. — Zool. Inst. der Univ. Würzburg, Naturw. Fak., Röntgenring 10, WÜRZBURG, Deutschland.
- a. Geschwulstproblem, bearbeitet durch Regeneration und Transplantation an *Lumbricus*. (*Annelida*)
- b. Einfluss des Colchicins auf die Regeneration bei *Lumbricus* und *Tubifex*. (*Oligochäten*)
- HUESTIS, R. R. Ph.D., Prof. — Biol. Dept, Univ. of Oregon, EUGENE, Ore., U.S.A. (no data received over this year)
- HUIJBERS, Mej. M. M. Med. doct. — Anat.-Embryol. Lab., Univ. van Amsterdam, Mauritskade 61, AMSTERDAM O., Holland.
- a. Investigations to the function of the gonad in the *chick*-embryo by castration experiments. (*Aves*)
- HULTIN, J. M. T. Fil.lic. — Wenner-Grens Inst. for exper. Biol., Norr tullsgatan 16, STOCKHOLM 23, Sweden.
- a. Nitrogen metabolism in early sea urchin development studied by means of N-labelled ammonia. (*Echinodermata*)

- b. Protein turnover of different cell fractions of *chicken* liver studied by injection of N-labelled amino acids. The liver is afterwards homogenized and fractionated by centrifugation. (*Aves*)
- HUMMEL, Miss K. P. Ph.D. — Jackson Memorial Lab., Box 558, BAR HARBOR, Me., U.S.A.
- a. Studies on the form and function of ovaries which have been grafted into spleens of castrates and subsequently retransplanted into normal position within the ovarian capsule of a normal *mouse*. Offspring of these ovaries are examined for abnormalities which may be correlated with the time the graft remained in the spleen. *Mus musculus* (*Mammalia*) (in collaboration with C. C. LITTLE)
- HUMPHREY, R. R. A.M., Ph.D., Prof. — Dept of Anat., School of Med., Univ. of Buffalo, 24, High Str., BUFFALO, N.Y., U.S.A.
- a. Studies on spontaneous haploidy and polyploidy. *Amblystoma* (*Siredon*) *mexicanum* (*Amphibia*)
- b. The offspring of polyploids; their chromosome number, mortality, pathology, etc. *Amblystoma* (*Siredon*) *mexicanum* (*Amphibia*)
- c. Study of progeny of triploid and other heteroploid individuals among *axolotls*. (*Amphibia*) (in collaboration with G. FANKHAUSER)
- HUMPHREY, T. M.D., Ph.D. — Dept of Anat., School of Med., Univ. of Pittsburgh, PITTSBURGH 13, Pa, U.S.A.
- a. Cells and fibers in the developing nervous system. *Homo sapiens* (*Mammalia*)
- b. Pancreatic developmental studies. *Homo sapiens* (*Mammalia*)
- HUNT, E. L. B.S., M.S., Ph.D. — Emory Univ., Dept of Biol., EMORY UNIVERSITY, Ga., U.S.A.
- a. Studies on affects of various added materials, particularly carbohydrates, on morphology of *chick* embryos. Various types of *domestic fowl* (*Aves*)
- b. Studies of regeneration of dermis and epidermis in *amphibia* under varied conditions of temperature and chemical treatment. *Triturus viridescens viridescens*
- ICHIKAWA, M. Ph.D., Prof. — Lab. of Embryol. and Exp. Morphol., Zool. Inst., Dept of Sci., Kyoto Univ., KYOTO, Japan.
- a. Hormonal mechanism of *insect* metamorphosis. *Bombyx mori*, *Luehdorfia japonica*, *Dictyoploca japonica* (*Lepidoptera*) (in collaboration with co-workers)
- b. Development of limbs. *Triturus pyrrhogaster* (*Amphibia*)
- c. Regeneration of the lens in *Urodeles*. *Triturus* and *Hynobius* (*Amphibia*)
- IGLESIAS, R. M.D. — Dept de Med. Exper. del Servicio Nacional de Salubridad, Av. Irarrázaval 849, SANTIAGO, Chile, South America.
- a. Hormonal interrelations between ovary and hypophysis. Ovarian grafts in the spleen. *Cavia cob.* (*Mammalia*) (in collaboration with A. LIPSCHUTZ, S. BRUZZONE, Miss E. MARDONES and Miss M. BARAKONA)
- b. Influence of steroids on the gonadotrophic function of the hypophysis; and on the follicular development of the ovary. Ovarian grafts in the spleen; with the simultaneous action of steroids absorbed from beneath the skin, or absorbed from the spleen; and other devices. *Cavia cob.* (*Mammalia*) (in collaboration with A. LIPSCHUTZ, S. BRUZZONE, Miss E. MARDONES and Miss M. BARAKONA)

- IKUSHIMA, N. — Lab. of Embryol. and Exp. Morphol., Zool. Inst., Dept of Sci., Kyoto Univ., KYOTO, Japan.
- Electric potential and pH of early embryo. *Triturus pyrrhogaster* (*Amphibia*)
  - Redoxpotential of early embryo. *Triturus pyrrhogaster* and *Rhacophorus schlegelii* (*Amphibia*)
- IMMERS, J. Mag. rer. nat. — Wenner-Grens Inst. for exper. Biol., Norrtullsgatan 16, STOCKHOLM 23, Sweden.
- Biochemistry of fertilization, espec. on carbohydrates metabolism. *Echinus esculentus*, *Echinocardium cordatum*, *Paracentrotus lividus*, *Strongylocentrotus droeb.*, etc. (*Echinodermata*)
  - Enzymatic destruction of jelly coat substances of the eggs. *Echinocardium cordatum*, *Echinus esculentus*, *Brisopsis lyr.*, etc. (*Echinodermata*)
- INCE, Miss F. E. M.Sc. — Dept of Zool., Bedford Coll., Regents Park, LONDON, England.  
(no data received)
- ISHIKAWA, M. M.A. (Rigakushi) — The Sugashima Marine Biol. Stat., Nagoya Univ., Sugashima-mura, Shima-gun, Mie-ken, Japan.
- Physiological studies on the fertilization and parthenogenesis of the sea urchin eggs. *Strongylocentrotus pulcherrimus* (*Echinoidea*) (in collaboration with M. SUGIYAMA)
- JAFFE, L. F. B.S. — Dept of Embryol., Div. of Biol., California Inst. of Technol., PASADENA 4, Cal., U.S.A.
- Separation, en masse, of early living sea-urchin blastomeres into size groups, for physico-chemical investigations. *Lytechinus pictus* (*Echinoidea*)
- JAGER, K. W. — Anat.-Embryol. Lab., Oostersingel 69, GRONINGEN, Holland.
- Development of the internal structure of muscles (especially the m. triceps surae). *Homo* (*Mammalia*)
- JÄGERSTEN, K. G. M. Fil. dr, Prof. — Uppsala Univ., Zool. Inst., UPPSALA, Sweden.
- Larval development. (*Polychaeta*)
- JANSEN, J. M.D. — Anat. Inst., Univ. of Oslo, OSLO, Norway.
- Development of the inferior olive in *Cetacea*. *Balaenoptera physalus*
  - The morphogenesis of the cetacean cerebellum. *Balaenoptera physalus* (*Mammalia*)
- JANSENS, J. — Lab. d'Embryol., Inst. de Zool., Univ. de Louvain, 71, Rue de Namur, LOUVAIN, Belgique.
- Development of the neural system of *Balanoglossus kowalewskii*. (*Enteropneusta*) (in collaboration with G. VANDEBROEK)
- JOHNELS, A. G. Phil. Dr — Zootom. Inst., Univ. of Stockholm, 116, Drottninggatan, STOCKHOLM, Sweden.
- Development and morphology of the skeleton of the head. *Petromyzon* (*Cyclostomes*)
  - Observations on the connective tissue of the head. *Petromyzon* (*Cyclostomata*)
- JOHNS, B. A. E. M.B., Ch.B., M.R.C.P. — Dept of Anat., Fac. of Med., Univ. of Sheffield, SHEFFIELD, England.
- Development of the chondrocranium. *Homo* (*Mammalia*)
  - Development and histogenesis of oesophageal glands. *Homo* (*Mammalia*)

- JOHNSON, I. S. A.B. — Dept of Zool., Univ. of Kansas, LAWRENCE, Kansas, U.S.A.
- Scerological ontogeny of heart proteins of the early *chick* embryo. (*Aves*)
  - An analysis of *rabbit's* blood after the inoculation of cardiac actomyosin from *Gallus domesticus*. (*Aves*)
- JOHNSON, Mychyle W. A.B., Ph.D., Prof. — Dept of Zool., Duke Univ., DURHAM, N.C., U.S.A.
- A simplified technique for micro-electrocoagulation. Using a platinum electrode and hyfrecator, accurate coagulation is controlled. *Domestic chick* (*Aves*) (in collaboration with L. J. MANHOFF)
  - A simple micromanipulator. (in collaboration with L. J. MANHOFF)
  - Experimental production of pulmonary artery anomalies in *chick* embryos. By electro-coagulation, it is possible to duplicate many spontaneously occurring blood vessel anomalies. *Domestic chick* (*Aves*)
- JONES, B. M. B.Sc. — Dept of Zool., Univ. of Edinburgh, West Mains Rd, EDINBURGH 9, Scotland.
- The development of the tissue canal, a skin reaction of the host to the ectoparasitic mite *Trombicula autumnalis* Shaw. (*Arthropoda*)
  - The growth and development of the *harvest mite*, *Trombicula autumnalis* Shaw. (*Arthropoda*)
  - The growth and development of the *Acarina* and its bearing on *Arthropod* embryology. *Myobia musculi*; *T. autumnalis*; *Histiostoma polyperi*; *Scheloribates laevigatus*.
- JORDAN, H. Ph.D., M.S., M.A., Prof. — Lab. of Histol. and Embryol., Dept of Anat., Coll. of Med., Univ. of Vermont, BURLINGTON, Vt, U.S.A.  
(no data received over this year)
- JOST, A. D. Dr Sc. — Lab. de Biol. anim. du P.C.B., Fac. des Sci., Univ. de Paris, 7, Rue Cuvier, PARIS Ve, France.
- Developmental physiology of the *mammalian* fetus. Foetal endocrinology and morphogenesis. *Rabbit*, *Rat* and *Hamster*
- KAELIN, J. Prof. — Inst. de Zool., FRIBOURG, Suisse.  
(no data received)
- KÄLLEN, B. Med. kand. — Tornblad-Inst. of comp. Embryol., Anat. Dept of the Univ. of Lund, LUND, Sweden.
- Ontogenesis of the telencephalon. (*Mammalia*)
- KAMER, J. C. v. d. Dr Sc. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- Comparative embryological study of pineal cytology. (*Vertebrates*)
  - Normal development and cytology of the pineal region in *Torpedo ocellata* and *Torpedo marmorata*. (*Pisces*)
  - Normal development of the ear in *Xenopus laevis*. (*Amphibia*) (Normal Table).
- KARCZMAR, A. G. Ph.D. — Georgetown Univ., School of Med., WASHINGTON 7, D.C., U.S.A.
- The alkaline phosphatase activity in regenerating limbs. The comparison of the activities of this enzyme in dedifferentive, growth and differentiation stages of regeneration on one hand and in limb ontogeny on the other. Activities of alkaline phosphatase in experimentally induced changes of regenerative fate. *Amblystoma punctatum* and *opacum* (*Urodeles*)

- b. The effect of antimetotics and carcinogens on regeneration. The effect of nitrogen mustard as compared to that of denervation. The comparison of the effects of these agents during various stages of regeneration, with special emphasis on the effect of carcinogens on dedifferentiative stage of regeneration and on experimentally induced exaggerated dedifferentiation (regression). *Amblystoma punctatum* and *opacum* (*Urodeles*)
- c. Effect of pharmacological agents during progressive stages of differentiation. Change of response to agents acting on central and peripheral system during morphogenesis. *Amblystoma punctatum* and *opacum*
- KATAKURA, Y. M.A. — Biol. Inst. of Keio Univ., Hiyoshi, Kohoku, YOKOHAMA, Japan. (*Insecta*)
- a. Differentiation of the primordial germ-cell in the silkworm. *Bombyx mori*
- b. The sexual characters of gynandromorph in the silkworm. *Bombyx mori*
- KEMP, N. E. Ph.D. — Dept of Zool., Univ. of Michigan, ANN ARBOR, Mich., U.S.A.
- a. Synthesis and utilization of yolk during morphogenesis of *Amphibians*. *Rana pipiens* and *Amblystoma punctatum*
- b. Differentiation of viscera and survival of tadpoles with opened body cavities. *Rana pipiens* (*Amphibia*)
- KERKHOFF, Miss A. M. Arts — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.
- a. Influence of the gonadal hormones on the development of the female genital system in the mouse. (*Rodents, Mammals*)
- KERR, J. Graham Dr, Prof. (Emer.) — Dalney Veed, ROYSTON (Herts), Barley, England.
- KIANG, H. M. B.Sc., Dr rer. nat. — Dept of Biol., Nat. Univ. of Chekiang, HANGCHOW, China.
- a. Studies on eye-stalk hormone in *Crustacea*:
1. Isolation and purification of the hormone preparation.
  2. Chemical identification of the active principle.
  3. Mechanism of the hormonal action.
- Caridina denticulata* (*Decapoda*) (in collaboration with J. CHU, P. S. CHOW and Miss N. TSAI)
- KILLE, R. A. B.Sc. — Dept of Zool., Univ. of Edinburgh, West Mains Rd, EDINBURGH 9, Scotland.
- a. The early development of the skull bones developing in connection with the lateral line canals. *Salmo spp.* (*Teleostei*)
- KINDAHL, Miss M. E. Phil. Dr — Zootom. Inst., Univ. of Stockholm, 116, Drottningatan, STOCKHOLM, Sweden.
- a. The development of the teeth. (*Insectivora*)
- KING, R. — Dept of Biol. Sci., Stanford Univ., STANFORD, Cal., U.S.A.
- a. A study of melanophore differentiation, utilizing melanin inhibitors (e.g. phenylthiourea). (*Amphibians*)
- KING, T. J. B.S., M.S. — Lankenau Hosp. Res. Inst. and Inst. for Cancer Res., Burholme Ave Fox Chase, PHILADELPHIA 11, Pa, U.S.A.
- a. By combining the techniques of gynogenesis and androgenesis, partial blastulae are produced which are presumably devoid of functional nuclear material. The potentialities of these "nucleusless cells" are being investigated via transplantation to healthy, normal blastulae. *Rana pipiens* (*Amphibia*) (in collaboration with R. W. BRIGGS and E. U. GREEN)

- KING, T. S. M.B., Ch.B. — Dept of Anat., Fac. of Med., Univ. of Sheffield, SHEFFIELD, England.
- a. Development of face and correlated innervation. *Homo (Mammalia)*
- KLAPPER, Miss Cl. E. Ph.D., Prof. — Med. Coll. of Alabama, BIRMINGHAM, Ala., U.S.A. (no data received over this year)
- KLOFT, W. Dr rer. nat. — Zool. Inst. der Univ. Würzburg, Naturw. Fak., Röntgenring 10, WÜRZBURG, Deutschland.
- a. Embryonic development and metamorphosis of *Tropinota hirta*. (*Coleoptera*)
- b. Reduktion der Flügel und Flügelmuskulatur bei von *Nematoden* infizierten *Ameisen* und *Wespen*. *Lasius niger* u.a. (*Formicidae*), *Orymica rubra* u.a. (*Orymicinae*), *Vespa germanica* (*Vespidae*)
- KNOUFF, R. A. Ph.D., Prof. — Dept of Anat., Ohio State Univ., COLUMBUS 10, Ohio, U.S.A. (no data received over this year)
- KOCHER, W. — Zool.-vergl. Anat. Inst., Naturw. Fak., Univ. Zürich, Künstlergasse 16, ZÜRICH 6, Schweiz.
- a. Differentiation and regeneration of notochord. *Triton (Amphibia)*
- KOK, J. C. N. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Analysis of lithium action. *Limnaea stagnalis (Gastropoda)* (in collaboration with G. A. van ARKEL, Miss E. v. d. BROEK, Mrs A. S. DUYKER—de BEER, Miss W. H. T. van HEESCH, J. W. KUIPER, Miss R. P. van LOO, G. D. NIJENHUIS, Miss J. E. H. SMIT and W. L. van UTRECHT)
- KOLLROS, J. J. Dr, Prof. — Dept of Zool., State Univ. of Iowa, IOWA CITY, Iowa, U.S.A.
- a. The development of the spinal cord and nerves of *Xenopus laevis*. (*Anura, Amphibia*) (Normal Table) (no further data received)
- KONOPACKA, Mrs B. Dr, M.V.S.S. — Inst. of Histol. and Embryol., Academy of Med., ul. Chałubińskiego 5, WARSZAWA, Poland
- a. Histochemical investigations on the development of fishes. *Cyprinus carpio*
- KOPSCH, Fr. Dr, Prof. (Emer.) — Archivstr. 9, BERLIN—DAHLEMBERG, Deutschland. (Anat. Inst. der alten Berliner Univ.)
- KRABBE, K. H. Dr Med. — Tornblad-Inst. of comp. Embryol., Dept. of the Univ. of Lund, LUND, Sweden.
- a. Morphogenesis of the brain. (*Birds*)
- KRAJŃSKA, Mrs M. K. Mag. of Sc. — Inst. of Histol. and Embryol., Acad. of Med., ul. Chałubińskiego 5, WARSZAWA, Poland.
- a. A cytochemical study of the *Insect* egg. *Cynipidae* and other *Insecta*
- KRAMER, T. L. Ph.D. — Dept of Anat., Univ. of Michigan, Med. School, 2500 East Med. Bldg, ANN ARBOR, Mich., U.S.A.
- a. Innervation of the heart of the chick embryo. Attempting to determine when the nerves reach the heart and what effects this innervation has upon the character of the heart-beat. (*Birds*)
- KRAUSE, W. Dr Med. — Anat. Inst. der Univ. Wien, Währingerstr. 13, WIEN IX, Österreich.
- a. Vollständige Untersuchung eines menschlichen Eies mit 0,32 mm. Keimschildlänge. (*Mammalia*)

- KRAUSS, M. Ph.D. — Dept of Biol., The Johns Hopkins Univ., BALTIMORE 18, Md, U.S.A.
- Growth stimulation by organs and organ extracts on homologous organs. *Chick (Aves)*
  - Effects of specific antisera on morphogenesis. (*Amphibia*)
- KREDIET, G. Dr, Prof. — Veter.-Anat. Inst., Biltstr. 172, UTRECHT, Holland.
- Development of genital tract and gonads in domestic animals. (*Birds and Mammals*) (in collaboration with J. BRUINS)
- KREMER, Miss A. — Hubrecht Lab., Internat. Embryol. Inst., Janskerkhof 2, UTRECHT, Holland.
- Analysis of the neural induction. Transfer of activating substances in horizontal direction through presumptive ectoderm and the subsequent organisation of a nervous system. (heteroplastic transplantation of ectoderm) *Triturus taeniatus*, *alpestris* and *cristatus (Amphibia)* (in collaboration with P. D. NIEUWKOOP and Miss E. BOTERENBROOD)
- KROPP, B. N. A.M., Ph.D., Prof. — Queen's Univ., Med. School, KINGSTON, Ont., Canada.
- Development of vascular pattern of teeth, mouth and face. *Homo (Mammalia)*
  - Development, structure and functions of trophoblast. *Homo, Rattus* and *Lepus (Mammalia)*
- KROTKIEWICZ, T. — Inst. of Histol. and Embryol., Med. Acad., GDAŃSK, Poland.
- Regeneration in *Amphibians*. The influence of inanition on that phenomenon. (in collaboration with E. H. WISKONT and S. HILLER)
- KRUGELIS, Miss E. J. Ph.D. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- Alkaline phosphatase activity during development in relation to temperature. *Amblystoma punctatum (Amphibia)*
  - Alkaline phosphatase activity and nucleic acids during development in relation to morphogenesis. *Amblystoma punctatum (Amphibia)*
- KUGLER, O. E. Ph.D., Assoc. Prof. — Dept of Zool., Univ. of Illinois, URBANA, Ill., U.S.A.
- Localization of phosphatase in the reproductive system. *Periplaneta americana (Insecta)* and *Semotilus atromaculatus atromaculatus (Osteichthyes)*
  - Localization of nucleic acids in the reproductive system. *Periplaneta americana (Insecta)*
- KÜHN, A. Dr Phil.h.c., Dr Phil., Prof. — Zool. Inst. der Univ. Tübingen, u. Max-Planck-Inst. für Biol., Hölderlinstr. 12, TÜBINGEN, Deutschland.
- Wundheilung und Regeneration bei *Ephestia*. (*Ptychopoda, Lepidoptera*)
  - Entwicklung der Schuppen von *Ephestia*. (*Ptychopoda, Lepidoptera*) bei verschiedenen Mutanten und unter experimentellen Bedingungen.
  - Genwirkungen und Phaenocopien bei der Ausbildung von Zeichnungsmustern bei *Ephestia*. (*Ptychopoda, Lepidoptera*)
  - Vergl. Untersuchungen der Furchung und Keimblätterbildung bei *Hydroiden* div. spec. (*Coelenterata*)

- KUIPER, J. W. — Zool. Lab. der Rijks Univ., Janskerkhof 3, and Hubrecht Lab., Internat. Embryol. Inst., UTRECHT, Holland.
- Analysis of lithium action. *Limnaea stagnalis* (Gastropoda) (in collaboration with G. A. van ARKEL, Miss E. v. d. BROEK, Mrs A. S. DUYKER—de BEER, Miss W. H. T. van HEESCH, J. C. N. KOK, Miss R. P. van LOO, G. D. NIJENHUIS, Miss J. E. H. SMIT and W. L. van UTRECHT)
  - Description of the development of the epiphysis and ganglia habenularis, with the aid of slides of the late Prof. DOHRIN. *Petromyzon* spec. (*Cyclostomata*)
- KUNO, M. — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.
- Physiological studies on the cleavage of the sea urchin eggs. *Strongylocentrotus pulcherrimus* (Echinoidea)
- KURKIEWICZ, T. Dr Sc., Prof. — Inst. d'Histol. et d'Embryol., Fac. de Méd. de l'Acad. de Méd. à Poznań, ul. Swieckiego 6, POZNAŃ, Pologne.
- Histogénèse de la corticosurrénale dans les conditions expérimentales. Rat (*Mammifères*)
- KUTSKY, P. B. A.B., Ph.D. — Dept of Zool., Univ. of California, BERKELEY 4, Cal., U.S.A.
- Phosphorus metabolism in the amphibian embryo studied with radioactive phosphorus. *Rana pipiens*
  - Studies in protein metabolism of amphibian embryo. II — Free amino acids; III — Peptides; IV — Uptake of radioactive methionine. *Rana pipiens* and *Hyla regilla* (in collaboration with W. E. BERG and R. M. EAKIN)
- KUUSI, Miss T. Mag.phil. — Zool. Lab., Univ. of Helsinki, Dept of Physiol., P. Rautatiekatu 13, HELSINKI, Finland.
- The chemical nature of the specific inductive substances (isolated from liver and kidney of the guinea-pig). *Triton* (*Amphibia*)
- LALLIER, R. A. Lic. ès Sc. — Inst. de Biol. physicochimique, 13, Rue Pierre Curie, PARIS Ve, France.
- Li et développement embryonnaire, étude de la biochimie des embryons lithinés. *Rana fusca*, *Amblystoma mexicanum* (*Amphibia*)
  - L'induction chez les Amphibiens. *Discoglossus pictus* et *Triton taeniatus*
- LANDAUER, W. Ph.D., Prof. — Dept of Genet., Coll. of Agric., Univ. of Connecticut, Storrs Agric. Exper. Stat., STORRS, Conn., U.S.A.
- Developmental studies on various mutants of fowl, such as "duplicate", "creeper chondrodystrophy", etc. *Gallus domesticus* (*Aves*)
  - A causal analysis of teratogenic action of insulin on developing chicken embryos. *Gallus domesticus* (*Aves*)
- LANGEVOORT, H. L. M.Drs — Anat.-Embryol. Lab. der Rijks Univ., Oostersingel 69, GRONINGEN, Holland.
- Development of parapophysis in birds and the circulation of the cerebrospinal fluid. *Gallus*
- LANGMAN, J. — Anat.-Embryol. Lab., Univ. van Amsterdam, Mauritskade 61, AMSTERDAM O., Holland.
- Transplantation of cultivated endocrine organs. Differences caused by autologous, heterologous and homologous media. (*Vertebrates*)



- LARAMBERGUE, M. de Dr ès Sc., Prof. — Lab. de Zool., Fac. des Sci., POITIERS, Vienne, France.
- Recherches sur le développement embryonnaire de l'appareil génital hermaphrodite de divers *Gastropodes*.
  - Différentiation des gamètes chez des *Gastropodes* hermaphrodites.
  - Génétique des races euphalliques et aphalliques de *Bulinus truncatus* (*contortus*). (*Gastropodes*)
- LATIMER, H. B. Ph.D., Prof. — Dept of Anat., Univ. of Kansas, Med. School, LAWRENCE, Kan., U.S.A.
- Some anomalies found in a series of 180 fetal *dogs*. (*Mammals*)
  - Growth of the organs and systems of the *rabbit* in the prenatal and postnatal periods. *Oryctolagus cuniculus* (*Mammals*)
  - Statistical study of the parts of the nervous system and the endocrine glands in the *guinea pig*. *Cavia porcellus* (*Mammals*)
  - Prenatal growth of the urogenital system of the *dog*. *Canis familiaris* (*Mammals*)
  - Changes in the size of the ventricular walls of the heart in the *rabbit*, *guinea pig*, *dog* and *man*. (*Mammals*)
- LAVELLE, A. B.S., M.S., Asst Instructor — Dept of Anat., Univ. of Pennsylvania, School of Med., PHILADELPHIA 4, Pa, U.S.A.
- Development of chromophil substance in central nervous system. *Guinea pig* and *man* (*Mammals*) (in collaboration with W. F. WINDLE)
- LEACH, W. J. B.A., M.A., Prof. — Dept of Anat., Ohio State Univ., COLUMBUS 10, Ohio, U.S.A.  
(no data received over this year)
- LEBLOND, C. P. Prof. — Dept of Anat., MCGILL Univ., MONTREAL, P.Q., Canada.
- Development of the thyroid gland. (*Vertebrates*)
  - The development of bones and teeth as shown by radioautographs with the help of radio-phosphorus and radio-carbon. (*Vertebrates*) (in collaboration with R. GREULICH and L. F. BELANGER from Dept of Histol., Univ. of OTTAWA)
- LEE, G. M. A.B., Prof. — Dept of Anat., Univ. of Kansas, Med. School, LAWRENCE, Kan., U.S.A.
- Development of the central and peripheral nervous system in relation to behavior patterns along Coghillian lines of investigation. *Amblystoma tigrinum* and *maculatum* (*Amphibia*) (in collaboration with P. G. ROOFE)
- LEE, H. J. v. d. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- Microincineration of various stages of development. *Limnaea stagnalis* (*Gastropoda*)
- LEGHISSA, S. Ph.D. — Ist. di Anat. comp., Via Belmeloro 8, BOLOGNA, (103), Italia.
- Study of the cortex in *Ascidian* eggs. Fusion of blastomeres in *Ascidians*. *Ascidia* (*Urochordata*)
  - Differentiation and morphology of nervous tissue in *Coelenterata*.
  - Differentiation and morphology of nervous tissue in *Vertebrates*.
  - Effects of antimetotics on regeneration of peripheral nerves and on metamorphosis of *Amphibians*. *Rana*, *Bufo* (in collaboration with P. PASQUINI)

- e. Regeneration of peripheric nerves. *Homo* (*Mammals*)
- f. Action of vitamins (A, B group, C) on the histophysiology of endocrine glands during metamorphosis of *Amphibians*. *Rana*
- LEHMAN, H. E. M.A., Ph.D., Prof. — Wilson Zool. Lab., Univ. of North Carolina, CHAPEL HILL, N.C., U.S.A.
- a. Studies on the behavior, differentiation, and metabolism of *Amphibian* pigment cells as related to the establishment of specific pigment patterns of larvae and adults. *Amblystoma* and *Triturus*
- b. Studies on the relation of external media and physical surfaces on the migration and differentiation of *Amphibian* tissues in vitro. *Amblystoma* and *Triturus*
- LEHMANN, F. E. Dr Phil., Prof. — Abt. für Zoophysiol., Zool. Inst. der Univ., Sahlistr. 8, BERN, Schweiz.
- a. Allometrisches Wachstum bei *Amphibien*. (in Zusammenarbeit mit diversen Mitarbeitern)
- b. The influence of chloramine-compounds on early development (neurulation and embryo-formation) of the *Amphibian* egg. *Triturus alpestris* and *Tr. taeniatus* (in collaboration with P. D. NIEUWKOOP)
- c. Schwanzregeneration von *Xenopus*, normal und chemisch beeinflusst. (*Amphibia*) (in Zusammenarbeit mit diversen Mitarbeitern)
- d. Elektronenmikroskopische Struktur von tierischen Eiern (*Echinodermen*, *Ascidien* und *Tubifex*)
- e. Regeneration bei *Coelenteraten*. *Hydrozoa* (Bedeutung der I-Zellen) (in Zusammenarbeit mit P. TARDENT)
- f. Erzeugung von Teratomen bei *Xenopus*-larven. (*Amphibia*)
- LELIÈVRE, A. — Lab. d'Embryol., Fac. de Méd., 15, Rue Ecole de Méd., PARIS VIe, France.
- a. Etude des anomalies de divers types. *Homo* (*Mammalia*)
- LENDER, Th. Prof. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- a. Régénération des yeux. Rôle du système nerveux dans la régénération des yeux des *Planaires*. *Polycelis nigra* (*Turbellariés*)
- LEONE, V. Dr — Ist. di Zool. e Anat. comp., Via Celoria 10, MILANO, Italia. (from Ist. di Anat. um. norm. dell'Univ. di PALERMO)
- a. NaSCN action on embryonic development. (*Amphibia* and *Aves*)
- LEPORI, N. G. lib.doc. — Ist. di Zool. e Anat. comp. dell'Univ., Via A. Volta 4, PISA, Italia.
- a. Ovo- and spermatogenesis — gynogenetic development — polyploidy — chromosome cycle. *Polycelis nigra* (*Turbellaria*)
- LESHER, S. Ph.D. — Dept of Anat., Univ. of Kansas, Med. School, LAWRENCE, Kan., U.S.A.
- a. The nucleic acids (RNA, DNA) their localization and relative concentration in the larval salivary gland of *Drosophila robusta* during the course of larval development. (With special emphasis on the interrelation of the two nucleic acids and the role of the nuclear components in their metabolism). (*Insecta*, *Diptera*)
- b. A survey of the enzyme systems concerned in the embryonic development of the *amphibian* nervous system. (Emphasis will be on the time of appearance of the various enzyme systems, their localizations and their concentrations). *Amblystoma*

- LEVER, J. Dr. Phil. — Zool. Inst., Free Calvinistic Univ., AMSTERDAM, Holland.  
 a. Descriptive embryology of *Colisa labiosa*. (*Pisces*)
- LEVI, G. L. Dr. Prof. (Emer.) — Inst. of human Anat., Fac. of Med., Corso Massimo d'Azeglio 52, TORINO, Italy.  
 a. Recherches sur les transformations qui se produisent dans les organismes et dans les tissus cultivés in vitro pendant l'accroissement. (*Vertébrés supérieurs*)  
 b. Recherches sur les caractères de la structure et des propriétés biologiques dans les tissus cultivés in vitro. (*Vertébrés supérieurs*)
- LEVI—MONTALCINI, Miss R. M.D. — Dept of Zool., Grad. School of Arts and Sci., Washington Univ., Lindell and Skinker Aves, ST LOUIS 5, Mo., U.S.A. (from Univ. of TORINO, Italy)  
 a. Response of embryonic nervous system to implantation of mouse tumors. Chick embryo (*Aves*) (in collaboration with V. HAMBURGER)  
 b. Origin of sympathetic and parasymphathetic nervous system. (*Reptilia and Aves*)
- LEVI—MONTALCINI, R. M.D. — Dept of Zool., Grad. School of Arts and Sci., Washington Univ., Lindell and Skinker Aves, ST LOUIS 5, Mo., U.S.A.  
 a. Control of proliferation and differentiation of the nervous system. Chick (*Aves*) (in collaboration with V. HAMBURGER)
- LEWIS, F. Th. A.M., M.D., Prof. — Harvard Med. School, 25, Shattuck Str., BOSTON 15, Mass., U.S.A.  
 a. The shape of cells in certain early embryonic tissues. Chick, rabbit and man (*Higher Vertebrates*)  
 b. Embryological study of human tracheo-oesophageal fistula. (*Mammals*)
- LEWIS, W. H. Dr. Prof. (Emer.) — Wistar Inst. of Anat. and Biol., PHILADELPHIA 4, Pa, U.S.A.
- LI, Miss S. C. B.S. — Dept of Zool., Coll. of Sci., Nat. Univ. of Peking, Ching Shan Tung Chieh, PEIPING, China.  
 a. Study of the influence of the optic vesicle on the development of head skeleton and accessory organs of the eye ball, by extirpation of the optic vesicle at tail bud stage. *Rana nigromaculata* (*Amphibia*)
- LIAO, Y. K. B.S. — Dept of Zool., Coll. of Sci., Nat. Univ. of Peking, Ching Shan Tung Chieh, PEIPING, China.  
 a. The reactive capacity of *Rana nigromaculata* to abnormal inductor seems to be weaker than that of *Triton*. In order to find out whether the ectoderm of *Rana* is less sensitive to inductive stimuli Holtfreter's experimental method (1947) was adopted. Isolated gastrular ectoderm of *Rana* was given a treatment with acid and alkali solution of various length of duration. Thus it will be found whether the pH ranks which cause neural differentiation in *Triturus* (or *Amblystoma*) and in *Rana* ectoderm are different. Furthermore, the cause why *Triturus* and *Rana* ectoderms react differently to the same pH rank will also be studied.
- LILLIE, R. S. Ph.D., Sc.D. — Physiol. Lab., Univ. of Chicago, CHICAGO 37, Ill., U.S.A. — Marine Biol. Lab., WOODS HOLE, Mass., U.S.A.  
 a. Artificial activation of unfertilized marine eggs, chiefly of starfish and sea-urchin. Determination of physiological (and physico-chemical) factors concerned in the change of the egg from the resting to the active and developing state. *Asterias forbesii* and *Arbacia punctulata* (*Echino-dermata*)

- LINDAHL, P. E. Fil. Dr, Prof. — Inst. for Zoophysiol., Fac. of Mat.-Nat. Sci., Villavagen 9, UPPSALA, Sweden.
- a. Large scale separation of macromeres, mesomeres and micromeres of the developing sea urchin egg. (*Echinodermata*)
  - b. Changements of dehydrogenase system at fertilization of the sea urchin egg. (*Echinodermata*)
  - c. The biochemical mechanism of the animalization of the unfertilized sea urchin egg. (*Echinodermata*)
  - d. The biochemical back ground for the vegetalization of the sea urchin egg by  $Li^+$ . (*Echinodermata*)
- LINDBERG, N. O. H. Phil. Dr, Prof. — Wenner-Grens Inst. for exper. Biol., Norrtullsgatan 16, STOCKHOLM 23, Sweden.
- a. On surface reactions of the sea urchin egg with special attention to phosphate-metabolism. On the dehydrogenase systems of the sea urchin egg. (*Echinoderms*)
- LINDVALL, S. Engineer — Wenner-Grens Inst. for exper. Biol., Norrtullsgatan 16, STOCKHOLM 23, Sweden.
- a. Studies on the proteins of unfertilized — and the first stages of fertilized sea urchin eggs. (*Echinoderms*)
- LIPSCHUTZ, A. M.D., Prof. — Dept de Med. Exper. del Servicio Nacional de Salubridad, Av. Irarrázaval 849, SANTIAGO, Chile, South America.
- a. Hormonal interrelations between ovary and hypophysis. Ovarian grafts in the spleen. *Cavia cob.* (*Mammalia*) (in collaboration with R. IGLESIAS, S. BRUZZONE, Miss E. MARDONES and Miss M. BARAKONA)
  - b. Influence of steroids on the gonadotrophic function of the hypophysis; and on the follicular development of the ovary. Ovarian grafts in the spleen; with the simultaneous action of steroids absorbed from beneath the skin, or absorbed from the spleen; and other devices. *Cavia cob.* (*Mammalia*) (in collaboration with R. IGLESIAS, S. BRUZZONE, Miss E. MARDONES and Miss M. BARAKONA)
- LISON, L. — Lab. d'Hist., Fac. de Méd. de l'Univ., 97, Rue aux Laines, BRUXELLES, Belgique.
- a. Photometric quantitative determinations of desoxyribonucleic acid (D.N.A.) in resting cells, mitosis, spermatogenesis and development. (*Vertebrates*) (in collaboration with J. J. PASTEELS)
- LITTLE, C. C. Sc. Dr, Prof. — Jackson Memorial Lab., Box 558, BAR HARBOR, Me., U.S.A.
- a. Studies on the form and function of ovaries which have been grafted into spleens of castrates and subsequently retransplanted into normal position within the ovarian capsule of a normal mouse. Offspring of these ovaries are examined for abnormalities which may be correlated with the time the graft remained in the spleen. *Mus musculus* (*Mammalia*) (in collaboration with Miss K. P. HUMMEL)
- LIU, J. C. B.S., Ph.D., Assoc. — Dept of Anat., School of Med., Univ. of Pennsylvania, PHILADELPHIA 4, Pa, U.S.A.
- a. Regeneration in mammalian central nervous system. (Recovery of neurons following trauma, alteration in their internal environment). *Cat* and *dog* (*Mammals*) (in collaboration with W. F. WINDLE and several other coworkers)

- LOMBARD, G. L. M.Sc. — Hubrecht Lab., Internat. Embryol. Inst., 2, Janskerkhof, UTRECHT, Holland.
- Investigations into the effects of LiCl on the early development of *Xenopus laevis*, Daudin and *Amblystoma mexicanum*. (*Amphibians*)
  - Homoplastic transplantations of presumptive notochord and neural areas respectively, between Lithium-treated and normal blastulae/early gastrulae in *Triturus* and *Xenopus*. (*Amphibians*)
- LOO, Miss R. P. van — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- Analysis of lithium action. *Limnaea stagnalis* (*Gastropoda*) (in collaboration with G. A. van ARKEL, Miss E. v. d. BROEK, Mrs A. S. DUYKER—de BEER, Miss W. H. T. van HEESCH, J. C. N. KOK, J. W. KUIPER, G. D. NIJENHUIS, Miss J. E. H. SMIT and W. L. van UTRECHT)
- LØVTRUP, S. Mag.scient. — Cytochem. Dept, Carlsberg Lab., 8, Gl. Carlsbergvej., COPENHAGEN Valby, Denmark.
- Proteolytic enzymes during *amphibian* development. *Amblystoma mexicanum* and *Xenopus laevis*
- LUBCHENCO, L. M.D. — Univ. of Colorado, Med. Center, Dept of Pediatrics, 4200 east Ninth Ave, DENVER 7, Col., U.S.A.
- Study of differentiation of *chick* somites in explants (Spratt technique). (*Aves*) (in collaboration with H. HERRMANN, J. McKENZIE and U. ROTHFELS)
  - Study of developmental disturbances related to nutritional deficiencies investigated by application of anti-vitamins and anti-amino acids to the intact egg and to explants (somites). In particular, it will be attempted to define the factors which maintain the balance between myotome, sclerotome and dermatome during differentiation of the somite and are required for the normal development of the retina (possible connection with retrolental fibroplasia of the premature *human* infant) (*Aves*) (in collaboration with H. HERRMANN, J. McKENZIE and U. ROTHFELS)
- LUMB, Miss E. S. Ph.D. — Dept of Biol., Coll. of Arts and Sci., Univ. of Rochester, ROCHESTER 3, N.Y., U.S.A.
- A cytochemical study of the nucleic acids in the differentiating spinal nervous system of the *chick*. *Gallus domesticus* (*Aves*)
- LÜSCHER, M. Dr — Zool. Anstalt, Univ. Basel, BASEL, Schweiz.  
(no data received over this year)
- LUTHER, W. Dr Phil., Prof. — Zool. Inst. der Univ., MARBURG, Deutschland.
- Determination of the regenerating blastema. (*Amphibia*) (*Mammalia*)
  - Effects of X-rays on growth and cell division; tumors. (*Amphibia* and *Mammalia*)
- LUTZ, H. Dr ès Sc. — Lab. de Zool., Fac. des Sci., 1, Avenue Vercingétorix, CLERMONT, France.
- Développement du blastoderme de *cane* pendant les premières heures de l'incubation. (*Aves*) [embryons.]
  - La polyembryonie expérimentale chez les oiseaux; l'orientation des axes.
- LUYENDIJK, W. Arts — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.
- Development of diencephalon and hypophysis in *man*. (*Mammals*) (in collaboration with J. DANKMEIJER)

- b. Development of hypothalamic nuclei in *man* and *rodents*. (*Mammals*)  
 MALAN, Miss M. E. D.Sc. — Zool. Inst., Univ. of Stellenbosch, STELLENBOSCH, South Africa.
- a. Some developmental stages of the skull and the palate. *Nyctisyrigmus pectoralis* (*Caprimulgidae, Aves*)
- MANDL, Miss A. M. B.Sc. — Dept of Anat., The Med. School, Birmingham Univ., Edgbaston, BIRMINGHAM 15, England.
- a. Study of oogenetic function. *Rodents* (*Mammals*)
- MANGOLD, O. Dr, Prof. — Heiligenberg-Inst. (Abtlg. Mangold), (17b) HEILIGENBERG, Kreis Oberlingen/Bodensee, Deutschland (Französische Zone).
- a. Entstehung und Determination der Geschlechtszellen und Gonaden bei *Urodelen* (gemeinsam mit O. STÄRK). *Triton* (*Amphibien*)
- b. Determinationsvorgänge in der Gastrula und Neurula von *Triton*. (*Amphibien*) (gemeinsam mit Frl. H. WAECHTER)
- MANHOFF, L. J. — Dept of Zool., Duke Univ., DURHAM, N.C., U.S.A.
- a. A simplified technique for micro-electrocoagulation. Using a platinum electrode and hyfrecator, accurate coagulation is controlled. *Domestic chick* (*Aves*) (in collaboration with M. W. JOHNSON)
- b. A simple micromanipulator. (in collaboration with M. W. JOHNSON)
- MANTON, S. M. F.R.S., M.A., Sc.D. — King's Coll., Strand, LONDON W.C. 2, England.
- a. Embryology of *Peripatus*. (*Onychophora*)
- MAPP, F. E. M.A., M.S. — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A. WEISS)
- a. Regeneration of notochord. (*Amphibia*) (under direction of P. A. WEISS)
- MARCHLEWSKI, J. H. Dr — Zakład Anat. Porównawczej U.J. im. H. Hoyer, KRAKOW, św. Anny 6, Poland.
- a. Artificial inseminations with semen stored in different conditions. *Gallus domesticus* (*Aves*)
- MARDONES, Miss E. — Dept de Med. Exper. del Servicio Nacional de Salubridad, Av. Orarrázaval 849, SANTIAGO, Chile, South America.
- a. Hormonal interrelations between ovary and hypophysis. Ovarian grafts in the spleen. *Cavia cob.* (*Mammalia*) (in collaboration with A. LIPSCHUTZ, R. IGLESIAS, S. BRUZZONE and Miss M. BARAKONA)
- b. Influence of steroids on the gonadotrophic function of the hypophysis; and on the follicular development of the ovary. Ovarian grafts in the spleen; with the simultaneous action of steroids absorbed from beneath the skin, or absorbed from the spleen; and other devices. *Cavia cob.* (*Mammalia*) (in collaboration with A. LIPSCHUTZ, R. IGLESIAS, S. BRUZZONE and Miss M. BARAKONA)
- MARJANEN, P. — Zool. Lab. of the Univ. of Turku, TURKU, Finland.
- a. On the influence of some embryo-extracts on unfertilized eggcells which have been induced to parthenogenetic development by chemical stimulation. *Albino rat* (*Mammals*)
- MARKERT, C. L. Ph.D. — Dept of Zool., Univ. of Michigan, ANN ARBOR, Mich., U.S.A.
- a. Role of the tissue environment in determining cellular differentiation. The effects of normal metabolic inhibitors on differentiation of pigment cells in vitro. *Gallus domesticus* (*Aves*)

- MARLIER, G. — Lab. de Zool., Fac. des Sci., Inst. de Zool. Torley-Rousseau, Univ. libre de Bruxelles, 50, Av. F. D. Roosevelt, BRUXELLES, Belgique.
- a. Métamorphoses. (*Insectes aquatiques*)
- MARTIN, A. V. W. Ph.D. — M.R.C. Biophysics Res. Unit, King's Coll., Strand, LONDON W.C. 2, England.
- a. Osteogenesis in *avian* and *mammalian* tissue in vitro.
- b. Structure and genesis of intercellular fibres, especially osteogenic fibres, studied with the electron microscope. (*Aves* and *Mammalia*)
- MASUDA, H. — Lab. of Embryol. and Exp. Morphol., Zool. Inst., Dept of Sci., Kyoto Univ., KYOTO, Japan.
- a. Behaviour of phosphor in early development. *Triturus pyrrhogaster*
- b. Induction in regenerating blastema. *Triturus pyrrhogaster* (*Amphibia*)
- MASY, S. — Inst. d'Anat., Univ. de Louvain, 38, Rue des Récollets, LOUVAIN, Belgique.
- a. Experimental analysis of the development of the appendicular skeleton in the *chick* embryo. (*Aves*)
- MATHER, W. B. M. of Sci. — Zool. Dept, Univ. of Queensland, George Str., BRISBANE, Queensland, Australia.
- a. Superimplantation in the *rabbit*. *Oryctolagus cuniculus* L. (*Mammalia*)
- McCAFFERTY, R. E. M.S. — Dept of Biol. Sci., Univ. of Pittsburgh, PITTSBURGH 13, Pa, U.S.A.
- a. The effect of extirpation and subsequent implantation of the pituitary on reproduction. *Mus musculus* (*Mammalia*)
- b. Growth effects on embryos from maternally administered propylthiouracil and dibenamine. *Mus musculus* (*Mammalia*)
- McCALLION, D. J. B.A., M.A., Prof. — Dept of Biol., Acadia Univ., WOLFVILLE, Nova Scotia, Canada.
- a. Effects of carcinogens on growth, regeneration and differentiation in *frog* larvae. (*Amphibia*)
- McKEEHAN, M. Dr — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- a. Cytological and electronmicroscopic studies on lens induction. *Gallus* (*Aves*) (in collaboration with P. A. WEISS and R. PETZOLD)
- McKENZIE, J. Ph.D. — Univ. of Colorado, Med. Center, Dept of Pediatrics, 4200 east Ninth Ave, DENVER 7, Col., U.S.A.
- a. Study of differentiation of *chick* somites in explants (Spratt technique), (*Aves*) (in collaboration with H. HERRMANN, L. LUBCHENCO and U. ROTHFELS)
- b. Study of developmental disturbances related to nutritional deficiencies investigated by application of anti-vitamins and anti-amino acids to the intact egg and to explants (somites). In particular, it will be attempted to define the factors which maintain the balance between myotome, sclerotome and dermatome during differentiation of the somite and are required for the normal development of the retina (possible connection with retrolental fibroplasia of the premature *human* infant). (*Aves*) (in collaboration with H. HERRMANN, L. LUBCHENCO and U. ROTHFELS)
- MENSCHIK, Z. M.B., Ch.B., M.D., Prof. — Dept of Anat., Fac. of Med., Univ. of Ottawa, OTTAWA, Canada.
- (no data received over this year)

- METZ, C. B. Ph.D. — Osborn Zool. lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- Physiology of fertilization in *Paramecium*. The chemical nature of the mating type substances and the role of these substances in fertilization is currently being investigated. (*Protozoa*)
  - Mechanism of adjuvant-fertilizin agglutination of *starfish* sperm. The adjuvant action of amino acids in *starfish* fertilizin agglutination of sperm is being investigated to determine the mechanism of action of these adjuvants. *Asterias* and *Patria* (*Asteroidea*)
  - Antifertilizin and basic proteins. The investigation of the relation of basic and nucleoproteins to antifertilizin is being extended to include a specificity study of basic protein agglutination of sperm. Various marine *invertebrate* forms including *echinoderms*.
- MEYER, R. de — Inst. d'Anat., Univ. de Louvain, 38, Rue des Récollets, LOUVAIN, Belgique.
- Embryological development of the nodal tissue in the *avian* heart.
- MIALHE, P. Lic. ès Sc. — Lab. d'évolution des êtres organisés, Fac. des Sci. de Paris, 105 Boulevard Raspail, PARIS VIe, France.
- Development of the pancreas (Langerhans islands). *Rat* (*Mammalia*) and *Chick* and *Duck* (*Aves*)
- MICHEL, A. — Inst. d'Anat., École de Méd., 20, Rue École de Méd., GENÈVE, Suisse.
- (no data received over this year)
- MILLARD, Mrs N. A. H. Ph.D. — Dept of Zool., Univ. of Cape Town, RONDEBOSCH, South Africa.
- Complete development of the veins and arteries. *Xenopus laevis* (*Amphibia*) (Work complete but Normal Table still to be done)
- MINGANTI, A. Dr — Ist. di Zool., Via Archirafi 18, PALERMO, Italia.
- The development of *Ascidian* hybrids.
  - The cytology of *Ascidian* hybrids. Lethal hybrids.
  - The chemistry of pigment spots formation in *Ascidians*.
- MOLL, J. Dr Med. — Anat.-Embryol. Lab., Oostersingel 69, GRONINGEN, Holland.
- Relations between organweight and bodyweight in ontogeny. Various *mammals*
  - Embryological development of the roof of the fourth ventricle in *Mus*. (*Mammalia*)
  - Knee-joint development in *Homo*. (*Mammalia*)
- MONNÉ, L. Phil.Dr, Prof. — Wenner-Grens Inst. for exper. Biol., Norrtullsgatan 16, STOCKHOLM 23, Sweden.
- Correlations between structure and function of the cytoplasm. *Sea urchins* (*Echinoderms*)
- MONROY, A. Dr Med., Prof. — Zool. Stat., NAPLES, Italy, presently at Rockefeller Institute for Med. Res., 66th Str. York Ave, NEW YORK, N.Y., U.S.A.
- Investigations on the biochemistry of fertilization in *sea urchin* eggs with special consideration to the changes occurring in proteins. (*Echinodermata*) (in collaboration with Mrs A. MONROY—ODDO)
  - Analyzation of the nature of the egg antifertilizin. (*Echinodermata*) (in collaboration with J. A. M. RÜNNSTRÖM, Marine Biol. Stat., WOODS HOLE, Mass., U.S.A.)



- MONROY—ODDO, Mrs A. Dr Chem. — Zool. Stat., NAPLES, Italy, presently at Rockefeller Institute for Med. Res., 66th Str. York Ave, NEW YORK, N.Y., U.S.A.
- a. Investigations on the biochemistry of fertilization in sea urchin eggs with special consideration to the changes occurring in proteins. (in collaboration with A. MONROY) (*Echinodermata*)
- MONTALENTI, G. Dr Sc., Prof. — Ist. di Genet. dell'Univ. di Napoli, Fac. di Sci., Via Mezzocannone 8, NAPOLI, Italia.
- a. Determinism of meiosis. *Asellus* and other species (*Crust.*, *Isop.*)
- MONTEROSSO, B. Sc.Dokt. — Ist. Zoologica, Via Androne 25, CATANIA, Italia.
- a. Embriologia e Partenogenesi degli *Araneidi*.
- MOOG, F. Ph.D., Asst Prof. — Dept of Zool., Grad. School of Arts and Sci., Washington Univ., Lindell and Skinker Aves, ST LOUIS 5, Mo., U.S.A.
- a. Patterns of development of enzymes in embryos; differentiation of enzymes in relation to differentiation of functional ability in embryonic organs. *Rana pipiens* and *Gallus domesticus* (*Amphibia* and *Aves*)
  - b. Radio-active tracer study of the metabolism of amphibian eggs, with special reference to the organizer. (in collaboration with Mrs E. L. WENGER)
  - c. Studies on phosphorous metabolism of amphibian embryos by means of P<sup>32</sup>. *Rana pipiens* (in collaboration with Mrs E. L. WENGER)
  - d. Cytological and cytochemical studies of the developing chick duodenum. *Gallus domesticus* (*Aves*) (in collaboration with Mrs E. L. WENGER)
- MOOKERJEE, S. M.Sc. — Univ. Dept of Genet., Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- a. Experimental study of the origin and relation to surrounding tissue of the notochord in *Amphibia*. *Triton alpestris*
  - b. Properties of isolated chorda cells in different pH and electrolytic conditions. *Triton alpestris* (*Amphibia*)
  - c. Studies on the notochordectomy. *Triton alpestris* (*Amphibia*)
- MOORE, A. R. Ph.D., Prof. — Physiol. Lab., Coll. of Sci., Univ. of Portland, PORTLAND 3, Ore., U.S.A.
- a. The form of the pluteus in sea urchin hybrids. Study of skeletal development and body form. *Strongylocentrotus purpuratus*, *S. franciscanus* and *Dendraster excentricus* (*Echinoidea*)
  - b. On the nature of the structures which insure the integrity of blastula and gastrula. *Dendraster excentricus* and *Strongylocentrotus purpuratus* (*Echinoderms*)
- MOORE, Mrs B. C. A.B., A.M., Ph.D. — Dept of Zool., Fac. of pure Sci., Columbia Univ., Broadway and 116 Str., NEW YORK 27, N.Y., U.S.A.
- a. A study of nucleo-proteins in development. Photometric analysis of haploid and diploid embryonic tissues. *Rana pipiens* (*Amphibia*)
- MOORE, C. R. Dr, Prof. — Dept of Zool., Univ. of Chicago, CHICAGO, Ill., U.S.A.
- (no data received)
- MOORE, J. A. A.B., M.A., Ph.D., Prof. — Dept of Zool., Fac. of pure Sci., Columbia Univ., Broadway and 116 Str., NEW YORK 27, N.Y., U.S.A.

- a. Competence of androgenetic (haplo-hybrid) gastrula ectoderm, tested by xenoplastic and heteroplastic transplantation to diploid hosts. *Rana pipiens* and *Rana sylvatica* (*Amphibia*)
  - b. Gastrula ectoderm competence and dorsal lip potency in hybrid embryos (*Rana pipiens* female x *Rana clamitans* male), tested by xenoplastic and heteroplastic transplantations to diploid hosts. (*Amphibia*)
  - c. Ecology of embryos of *Rana septentrionalis*. (Measurement of rate of development and temperature tolerance in relation to ecology)
- MORI, H. M.A., Ass. Prof. — Biol. Inst. of Keio Univ., Hiyoshi, Kohoku, YOKOHAMA, Japan.
- a. Insecticide action on the eggs, larvae and adults of various *insects*.
- MORI, Y. M.A., Dr, Prof. — Biol. Inst. of Keio Univ., Hiyoshi, Kohoku, YOKOHAMA, Japan.
- a. On the cause of disappearance of cutaneous melanophores of young gold-fishes. *Carassius auratus* (*Pisces*)
- MORICARD, R. Dr Méd., Dr ès Sc. — Lab. d'Hormonol. et Cytol. expér., Ecole des Hautes Etudes, Univ. Hôpital Broca, III Rue L. M. Nordmann, PARIS 13e, France.
- a. Hormonal release of the heterotypic division. (Meiosis in *rabbit*). (*Mammals*) (in collaboration with CHIH Chi Sheng)
  - b. Hypophysectomy and degeneration of the heterotypic division (Meiosis in *rat*). (*Mammals*)
  - c. In vitro fertilization of the *mammalian* ovum.
  - d. Oxydoreduction potential reduction of methylene blue in sperm. (*Amphibians*) (in collaboration with G. GUILLON)
  - e. Cinematography: cleavage in *Pleurodeles*. (*Amphibians*) (in collaboration with Miss S. GOTHIE)
  - f. Tensioactive substances in the gastrula. (*Mammals*) (in collaboration with Miss S. GOTHIE)
- MORLON, Mlle C. — Lab. d'Embryol., Fac. de Méd., 15, Rue Ecole de Méd., PARIS VIe, France.
- a. Influence tératogène des intoxications maternelles. *Homo* et *Rattus*
- MOSSMAN, H. W. Ph.D., B.S., M.S., Assoc. Prof. — Dept of Anat., Univ. of Wisconsin, MADISON, Wis., U.S.A.
- a. Regeneration of the ovary of *mammals*, and potentialities of the various ovarian elements. *Mus*, *Lepus* and *Erithizon*
  - b. Comparative morphology and physiology of the fetal membranes and reproductive organs of *mammals*. Any species available, but at the moment emphasis on *Sciurus* and *Odocoileus*.
  - c. Place of fertilization of the *mammalian* egg. (*Rodentia* and *Carnivora*) (in collaboration with F. STRAUSS, Anat. Inst., BERN, Schweiz)
- MOTOMURA, I. Dr Sc., Prof. — Lab. of Embryol., Inst. of Biol., Tohoku (Imperial) Univ., SENDAI, Japan.
- a. The rôle of the cortical cytoplasm on the determination of the polarity of the egg. *Bufo vulgaris formosus* (*Amphibia*)
  - b. Studies on the mechanism of cleavage; especially on the new formation of the cleavage plane. *Sea urchins* (*Echinodermata*)
  - c. The rôle of the Janus green granula (JGG cortical granule) in the fertilization and the membrane formation. *Sea urchins* (*Echinodermata*)
  - d. Double embryos caused by the double invagination in the centrifuged eggs of the toad. (*Amphibia*)

- MOULTON, J. M. B.S. — Biol. Lab's, Harvard Univ., Divinity Ave, CAMBRIDGE 38, Mass., U.S.A.
- a. Study of muscle development and differentiation in transplanted *amphibian* limbs. (under direction of Prof. A. S. ROMER)
- MUCHMORE, W. B. Ph.D. — Dept of Biol., Coll. of Arts and Sci., Univ. of Rochester, ROCHESTER 3, N.Y., U.S.A.
- a. Early differentiation of trunk mesoderm. *Amblystoma maculatum* (*Amphibia*)
- MULNARD, J. M.D. — Lab. d'Anat. et d'Embryol., Fac. de Méd. de l'Univ., 97, Rue aux Laines, BRUXELLES, Belgique.
- a. Cytochemical observations on oogenesis and development of *Acanthocephalus* (*Cl.*) and *Drosophila* (*Dipt.*). (*Insecta*)
- b. Study of the nucleoles of the giant cells of *Diptera*. (*Insecta*)
- MURRAY, P. D. F. D.Sc., M.A., Prof. — Dept of Zool., Univ. of Sydney, SYDNEY, N.S.W., Australia.
- a. Histogenesis of fusion of parallel bones. (*Anura*, *Amphibia*), *Gallus* (*Aves*), *Rattus* (*Mammalia*), etc.
- MUSTAKALLIO, M. M.D., Prof. — Dept of Anat., Fac. of Med., Helsinki Univ., HELSINKI, Finland.
- a. On the appearance of elastic tissue in the vessels of *human* foetus. (*Mammalia*)
- NACE, G. W. B.A., M.A., Ph.D., post graduate fellow, Nat. Inst. of Health, U.S.A. — Lab. de Morphol. anim., Univ. libre de Bruxelles, 1850, Chaussée de Wavre, BRUXELLES-Auderghem, Belgique. (Dept of Zool., Univ. of California, LOS ANGELES 24, Cal., U.S.A.)
- a. Plasma proteins during development in the *chick* embryo. (*Aves*) (in collaboration with A. M. SCHECHTMAN)
- NAGATSU, R. M.A. (Rigakushi) — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.
- a. Responses of melanophores of developing embryos of the *fish*. *Oryzias latipes*
- NAKANE, T. B.S. — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.
- a. Histochemical study on *insect* eggs. *Dineutus orientalis* Modder (*Coleoptera*)
- NAKANO, E. M.A. (Rigakushi) — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.
- a. Respiratory metabolism of *fish* egg during early development. Experiments with Cartesian divers. *Oryzias latipes*
- b. Analysis of the action of lithium on *fish* development. *Oryzias latipes*
- c. Influence of fatty acid on the fertilization of sea urchin egg. *Strongylocentrotus pulcherrimus* (*Echinoidea*)
- NEEDHAM, A. E. Dr — Dept of Zool. and comp. Anat., The Univ. Museum, OXFORD, England.
- (no data received)
- NEEDHAM, J. Dr, Prof. — Gonville and Cains Coll., CAMBRIDGE, England.
- (no data received)
- NEIGER, M. — Inst. d'Anat., École de Méd., 20, Rue École de Méd., GENÈVE, Suisse.
- (no data received over this year)

NELSEN, O. E. Ph.D., Prof. — Dept of Zool., Univ. of Pennsylvania, PHILADELPHIA, Pa, U.S.A. (no data received over this year)

NEUKOM, B. J. B.S. — Univ. of Colorado, Med. Center, Dept of Pediatrics, 4200 east Ninth Ave, DENVER 7, Col., U.S.A.

- a. Chemistry of muscle differentiation, determination of actin and myosin and phosphate fractions in muscle of *chick* embryos after the 7th day of development (concluded). (*Aves*) (in collaboration with H. HERRMANN and M. J. SCHNEIDER)
- b. Determination and fractionation of nucleoproteins and determination of enzymes in *chick* somites from the 2nd to the 5th day of incubation and in differentiating *chick* muscle from the 7th day of incubation to hatching. (*Aves*) (in collaboration with H. HERRMANN and M. J. SCHNEIDER)
- c. Chemical fractionation of cell nuclei and mitochondria of differentiating muscle of *chick*. (*Aves*) (in collaboration with H. HERRMANN and M. J. SCHNEIDER)
- d. Histological examination of muscle development including quantitative determinations of volume of somite columns, of cell number, and of mitotic index of somites. (*Aves*) (in collaboration with H. HERRMANN and M. J. SCHNEIDER)

NEWELL, G. E. B.Sc., Ph.D. — Queen Mary College, Univ. of London, Mile End Rd, LONDON E. 1, England.

- a. Breeding habits, embryology and larval life-history of *Clymenella torquata* (*Polychaetes*)

NEWHALL, C. A. A.B., M.D., Prof. — Dept of Anat., Univ. of Vermont, Coll. of Med., BURLINGTON, Vt, U.S.A.

(no data received over this year)

NEWTH, D. R. B.Sc. — Dept of Zool. and Comp. Anat., Univ. Coll. of London, Gower St, LONDON W.C. 1, England.

- a. The study of the normal development of the cornea of the eye in an *amphibian*. *Xenopus laevis*
- b. The determination of the capacity of the annular tympanic cartilage of metamorphosing animals to induce tympanic membrane formation when heteroplastically and xenoplastically transplanted. *Xenopus laevis* (*Amphibia*, *Anura*)
- c. The fate of the neural crest in *lampreys*. *Lampetra planeri* (*Cyclostomata*)
- d. The measurement of the forces involved in neurulation. *Amblystoma*
- e. The development of skeleton and muscles of the tail of *Xenopus laevis* from early tail-bud stage till end of metamorphosis. (*Anura*, *Amphibia*) (Normal Table)

NEWTON, B. L. M.D., C.M. — Dept of Anat., Coll. of Med., Baylor Univ., 1200 M.D. Anderson Blvd, Texas Med. Center, HOUSTON 5, Tex., U.S.A.

- a. Continued investigation by homologous and heterologous transplantation of embryonic material relating to its development in the anterior chamber in the eye using the method developed by H. S. N. GREENE. Material from *human* fetuses as well as *guinea pigs* and *mouse* embryos will be used. (*Mammals*)
- b. Continuation of investigations dealing with the heterotransplantability of neoplasms in *dogs* and *man*, utilizing the anterior ocular chamber of *guinea pigs* and *rabbits*. (*Mammals*)

- c. Investigation of transplantability of the Brown-Pearce tumor, utilizing the yoke sac of *chicks* and the anterior ocular chamber of *rabbits*. Morphological changes will be studied, and as well the effect on the tumor of various chemical agents will be studied. (*Aves* and *Mammalia*) (in collaboration with I. GALINSKY)

NICHOLAS, J. S. Ph.D. Prof. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.

- a. Studies on the *rat* egg. *Mus norvegicus* (*Mammalia*)  
 b. The development of *rat* muscle. *Mus norvegicus* (*Mammalia*)  
 c. The development of actomyosin in developing *rat* muscle. *Mus norvegicus* (*Mammalia*)  
 d. The interaction of the roof of the archenteron upon the nervous system. *Amblystoma mexicanum* (*Amphibia*)

DE NICOLA, M. Dr Sc. — Ist. di Genet. dell'Univ. di Napoli, Fac. de Sci., Via Mezzocannone 8, NAPOLI, Italia.

- a. Calcium distribution in early development of *sea urchin* eggs. *Paracentrotus* and *Arbacia*

- b. Phosphatase distribution in *Crustacean* eggs. *Cymothoids* and *Asellus*

NICOLETTI, B. — Ist. di Biol. gen., Fac di Med., S. Pietro, PERUGIA, Italia.

- a. Anelli di Liesegang e sviluppo embrionale. *Bufo* (*Anfibi*)

NIEUWKOOP, P. D. Phil.Dr — Hubrecht Lab., Internat. Embryol. Inst., Janskerkhof 2, UTRECHT, Holland.

- a. Early development of *Xenopus laevis* from fertilization till end of neurulation. (*Anura*) (Normal Table)  
 b. The influence of chloramine-compounds on the early development (neurulation and formation of the central nervous system) of the *Amphibian* egg. *Triturus alpestris* and *Tr. taeniatus* (in collaboration with F. E. LEHMANN)  
 c. Analysis of the regulative potencies of the invaginating archenteron roof and the induced neural plate along the dorso-ventral and cranio-caudal axes in the *Amphibian* egg by heteroplastic transplantation of parts of the dorsal blastoporal lip. *Triturus alpestris*, *taeniatus* and *cristatus* (in collaboration with S. TOIVONEN)  
 d. Analysis of the neural induction. Transfer of activating substances in horizontal direction through presumptive ectoderm and subsequent organisation of a nervous system. (heteroplastic transplantation of ectoderm). *Triturus taeniatus*, *alpestris* and *cristatus* (*Amphibia*) (in collaboration with Miss A. KREMER and Miss E. BOTERENBROOD)  
 e. Experimental analysis of the gastrulation process in the *Anuran* species *Xenopus laevis* (Daud.) (vital-staining and transplantation).  
 f. Experimental analysis of the neurulation process in *Xenopus laevis* (*Anurans*) (in collaboration with Miss M. F. C. van EGMOND)

NIU, M. C. Dr — Dept of Biol. Sci., Stanford Univ., STANFORD, Cal., U.S.A.

- a. The differentiation of macrophages into melanophores following their ingestion of pigmentary debris released by degeneration of preexisting melanophores. (*Amphibians*) (in collaboration with V. C. TWITTY)  
 b. The origin of chromatophores of the *salamander* tail. (*Amphibians*) (in collaboration with V. C. TWITTY)  
 c. Factors influencing pigment differentiation in *amphibian* melanoblasts. (in collaboration with V. C. TWITTY)

- d. The transformation of differentiated xanthophores into typical melanophores. (*Amphibians*) (in collaboration with V. C. TWITTY)
- e. The differentiation of single isolated gastrula ectoderm cells cultured under special conditions in vitro. (*Amphibians*) (in collaboration with V. C. TWITTY)
- f. The migratory behaviour of single neural crest melanoblasts isolated in capillary tubes of extremely small bore. (*Amphibians*) (in collaboration with V. C. TWITTY)
- NOVIKOFF, A. B. Ph.D., Prof. — Dept of Anat., Univ. of Vermont, Coll. of Med., BURLINGTON, Vt, U.S.A.  
(no data received over this year)
- NÜESCH, H. Dr Sc., P.D. — Zool. Anstalt der Univ., Rheinsprung 9, BASEL, Schweiz.  
(no data received over this year)
- NIJENHUIS, E. D. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Analysis of lithium action. *Limnaea stagnalis* (*Gastropoda*) (in collaboration with G. A. van ARKEL, Miss E. v. d. BROEK, Mrs A. S. DUYKER—de BEER, Miss W. H. T. van HEESCH, J. C. N. KOK, J. W. KUIPER, Miss R. P. van LOO, Miss J. E. H. SMIT and W. L. van UTRECHT)
- NIJENHUIS, L. E. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Developmental physiology of mutants. *Drosophila melanogaster* (*Insecta*) (in collaboration with Miss E. C. BOTERENBROOD, F. J. OPPEN-OORTH and N. SPRONK)
- NYHOLM, K. G. Fil. Dr — Uppsala Univ., Zool. Inst., UPPSALA, Sweden.
- a. Development of the *Echinoderids*. (*Vermes*)
- b. Development of *Labidoplax buskii*. (*Echinodermata*)
- O'BRIEN, J. P. Ph.D. — Dept of Biol., Marquette Univ., 1131, West Wisconsin Ave, MILWAUKEE 3, Wis., U.S.A.
- a. Establishment of *anuran* renal carcinoma in *Urodeles*. (*Amphibia*)
- b. Influence of *Urodele* limb field on *anuran* cancerous cells. *Rana pipiens*, *Triturus viridescens* and *Amblystoma* spp. (*Amphibia*)
- c. Regeneration in *Urodele* limb portions situated in reversed proximo-distal polarity. (*Amphibia*)
- d. State of determination of the *amphibian* limb blastema. *Triturus viridescens*, *Rana pipiens* and *Amblystoma* spp.
- O'CONNOR, R. J. M.D., D.T.M. — Westminster Med. School, Horsferry Rd, LONDON S.W. 1, England.
- a. The metabolism of cell division and cell differentiation. *Vertebrates*
- ODÉ, Miss E. Arts — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.
- a. Development of large vessels, especially pulmonary vessels, aorta and ductus arteriosus Botalli. *Rat* and *Man* (*Mammals*)
- OKADA, T. — Lab. of Embryol. and Exper. Morphol., Zool. Inst., Dept of Sci., Kyoto Univ., KYOTO, Japan.
- a. Developmental mechanism of entoderm differentiation. *Triturus pyrrhogaster* and *Hynobius nebulosus* (*Amphibia*)
- b. Role of the yolk mass in early morphogenetic movement. *Triturus pyrrhogaster* and *Hynobius nebulosus* (*Amphibia*)

- OKAZAKI, Miss K. — Fac. of Sci., Dept of Biol., Embryol. Section, Tokyo Metropolitan Univ., Meguro-ku, TOKYO, Japan.
- a. Metamorphosis of partial larvae of *Peronella* (a sand-dollar). (*Echinoidea*)
- OKSCHE, A. A. — Anat. Inst. der Univ., Robert Koch Str. 6, MARBURG/Lahn, Deutschland.
- a. Änderungen des Kaulquappen-Wachstums nach beiderseitiger Augen-Exstirpation. Es soll hierbei die Rolle des Hypophysen-Zwischenhirn-Systems und der Epiphyse untersucht werden. Larven von *Bufo vulgaris* (*Amphibia*)
  - b. Die Feinstruktur der Sinneszellen des Organon frontale bei qualitativ und quantitativ modifiziertem Lichtreiz. Verhalten der spezifischen, mit Eisen-Haematoxylin färbbaren Zellstrukturen während des Individualzyklus. Larven von *Bufo vulgaris* (*Amphibia*)
- OLIVO, O. M. Med. Dr. Prof. — Ist. di Istol. e Fisiol., Via Belmeloro 8, BOLOGNA, Italia.
- (no data received over this year)
- OLSSON, R. — Zootom. Inst., Univ. of Stockholm, 116, Drottninggatan, STOCKHOLM, Sweden.
- a. Development and anatomy of the nuclei and nerve fibres in the brain. *Polypterus* (*Brachiopterygii*)
- OMODEO, P. Dr Sc. — Ist. di Biol. e Zool. gen., Fac. di Med., Piazza S. Agostino 4, SIENA, Italia.
- a. Embryology and teratology in *Oligochaeta*.
  - b. Gametogenesis in *Oligochaeta*. (in collaboration with students)
- OORT, J. — Lab. for Exper. Histol., Fac. of Med., Univ. of Leyden, Wasenaarseweg, Boerhaavekwartier, LEIDEN, Holland.
- a. Development of the anterior hypophysis of the black-headed gull. *Larus ridibundus* (*Aves*)
- OPPENHEIMER, Miss J. M. Ph.D. — Dept of Biol., Bryn Mawr Coll., BRYN MAWR, Pa, U.S.A.
- a. Studies on early organization of blastoderm. *Fundulus heteroclitus* (*Teleostei*)
  - b. Studies on development of structure and function of central nervous system. *Fundulus heteroclitus* (*Teleostei*)
- OPPENOORTH, F. J. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Developmental physiology of mutants. *Drosophila melanogaster* (*Insecta*) (in collaboration with Miss E. C. BOTERENBROOD, L. E. NIJENHUIS and N. SPRONK)
- ORLANDI, Miss A. Dr — Ist. di Zool. e Anat. comp., Via Celoria 10, MILANO, Italia.
- a. Nucleoproteins and myosin. (*Vertebrata*)
- ORŁOWSKI, A. B.Sc. — Dept of Endocr., Fac. of Med., Med. Highschool of Łódź, Nowotki 137, ŁÓDŹ, Poland.
- a. The influence of hormones on metamorphosis of *Xenopus laevis*. (*Amphibia*) (in collaboration with A. BER)
- ORSINI, Mrs M. W. Ph.D., B.A., U.S. Public Health Fellow, Nat. Cancer Inst. — Dept of Anat., Univ. of Wisconsin, MADISON, Wis., U.S.A.
- a. Development and reproduction in the hamster, with emphasis on the uterine giant cells. *Cricetus* (*Mammalia*)

- ORSKA, Miss J. Ph.D. — Zakład Anat. Porównawczej, Inst. Zool. Uniw., ul. Sienkiewicza 21, WROCŁAW, Poland.
- Development of the vertebral column centra in *Salmonidae* and *Cyprinodontidae*. (*Teleosts*)
- ORTOLANI, Miss G. Dr — Ist. di Zool., Via Archirafi 18, PALERMO, Italia.
- Investigations on early development in *Teleosts*. (*Pisces*)
- ORTS LLORCA, F. Prof. — Lab. de Anat. y Embryol., Fac. de Med., CADIZ, Spain.
- Embryology of the heart. (*Mammalia*)
  - Embryology of the salivary glands. (*Mammalia*)
- OSAWA, S. — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.
- Distribution of phosphatase and amino acids in early developmental stages, studied histochemically. *Rhacophorus schlegelii* and *Triturus pyrrhogaster* (*Amphibia*)
  - Regional distribution of amino acids in early developmental stages, studied quantitatively. *Triturus pyrrhogaster* (*Amphibia*) (in collaboration with T. YAMADA)
- OSTERTAG, Mlle Y. Lic. ès Sc. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- Rôle des hormones dans la différenciation primaire du sexe. La genèse de l'asymétrie du tractus génital des Oiseaux et la régression des Canaux de Müller par les méthodes d'explantations. *Gallus* (*Aves*) (En collaboration avec Et. WOLFF)
- OVERTON, Miss J. Dr — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- Mitogenic stimulation of epidermis by fragments of nervous system. (*Urodela*) (in collaboration with P. A. WEISS)
- PADOA, E. Dr, Prof. — Ist. di Biol. e Zool. gen., Fac. di Med., Piazza S. Agostino 4, SIENA, Italia.
- Experimental sex reversal of larval *Amphibians*.
  - Control of metamorphosis. (*Amphibians*)
- PAPI, F. Dott. in Sc. — Ist. di Zool. e Anat. comp. dell'Univ., Via A. Volta 4, PISA, Italia.
- Reproduction and cytology in *Rhabdoceola*. (*Turbellaria*)
- PARDI, L. Lib.Doc. — Ist. di Zool. e Anat. comp. dell'Univ., Via A. Volta 4, PISA, Italia.
- Oviposition, parthenogenesis, cytology. (*Insects*)
- PARMENTER, C. Ph.D., Prof. — Dept of Zool., Univ. of Pennsylvania, PHILADELPHIA 4, Pa, U.S.A.  
(no data received over this year)
- PASCHMA, M. M.Ph. — Inst. Zool. Uniw. we Wrocławiu, Zakład Zool. Ogólnej, ul. Sienkiewicza 21, WROCŁAW, Polska (Poland).
- Embryology of *Enchytraeidae*. (*Oligochaeta*)
- PASQUINI, P. Ph.D., Prof. — Ist. di Anat. comp., Via Belmeloro 8, BOLOGNA, (103), Italia.
- Effects of antimetotics on early development and on lens-regeneration. *Rana esculenta*, *Triton* and *Axolotl* (*Amphibia*)
  - Effects of antimetotics on the regeneration of peripheral nerves. *Urodela* and *Anura* (*Amphibians*) (in collaboration with S. LEGHISSA)



- PASSALACQUA, Miss A. Dr — Ist. di Zool., Via Archirafi 18, PALERMO, Italia.
- a. Combined xenoplastic explantations of tail buds in *Amphibians*.
- PASTEELS, J. J. M.D., Agr. ès Sci., Prof. — Lab. d'Anat. et d'Embryol., Fac. de Méd. de l'Univ., 97, Rue aux Laines, BRUXELLES, Belgique.
- a. Centrifugation of *amphibian* blastula-gastrula. (Various sp. of *Urodela* and *Anura*)
  - b. General survey of *turtle* development. *Chrysemis*, *Pseudemys* and *Chelone*
  - c. Cytochemical observations on the first stages of *Amphibia*, various species. (in collaboration with J. BRACHET)
  - d. Photometric quantitative determinations of desoxyribonucleic acid (D.N.A.) in resting cells, mitosis, spermatogenesis and development. (*Vertebrates*) (in collaboration with L. LISON)
  - e. The early development of *Xenopus laevis* from late neurula stage to an advanced tail-bud stage (esp. morphological data for experimental work). (*Anura*, *Amphibia*) (Normal Table)
- PATTEN, B. M. Ph.D., Prof. — Dept of Anat., Univ. of Michigan, Med. School, 2500 East Med. Bldg, ANN ARBOR, Mich., U.S.A.
- a. Development of heart (especially later stages of its partitioning). Developmental defects of heart (especially interatrial). Physiology of embryonic heart (especially development of conduction system). *Gallus*, *Sus* and *Homo* (*Higher Vertebrates*)
  - b. Developmental defects of nervous system, particularly types involving local overgrowth. *Homo* (*Mammalia*)
- PEACOCK, A. M.B., B.S., M.Sc., M.R.C.S., L.R.C.P. — Anat. Dept, London Hosp. Med. Coll., Univ. of London, Turner Str., LONDON E 1, England.
- a. Investigation of development of vertebral column and intervertebral joints. *Man* (*Mammals*)
- PEASE, D. C. Dr, Prof. — Dept of Zool., Coll. of Phys. and Surg., Columbia Univ., NEW YORK City, N.Y., U.S.A.  
(no data received)
- PEERS, Miss D. J. — Dept of Entomol. and Zool., Ontario Agricultural College, GUELPH, Ont., Canada.
- a. An investigation into the spawning habits and early development of *Cyprinus carpio*. (*Osteichthyes*)
- PEHRSON, G. T. Dr Phil., Prof. — Zootom. Inst., Univ. of Stockholm, 116, Drottninggatan, STOCKHOLM, Sweden.
- a. Development and morphology of the skull and of the lateralis system. *Osteoglossids* and *Characinids* (*Pisces*)
- PENNERS, A. Prof. — Zool. Inst. der Univ. Würzburg, Naturw. Fak., Röntgenring 10, WÜRZBURG, Deutschland.
- a. Regeneration auf verschiedenen Altersstadien von *Tubifex rivulorum*. (*Clitella*) (*Oligochaeta*)
  - b. Cytochemische Untersuchungen der Oogenese und Spermatogenese von *Tubifex rivulorum*. (*Clitella*) (*Oligochaeta*)
  - c. Beeinflussung der Regeneration bei *Tubifex rivulorum* durch Naphtachinon und Phenanthrenchinon. (*Clitella*) (*Oligochaeta*)
  - d. Entwicklung des Eies von *Cyclops viridis* unter Beeinflussung durch Colchicin und Röntgenstrahlen. (*Crustacea*)

- PENTZ, Miss K. M.Sc. — Zool. Inst., Univ. of Stellenbosch, STELLENBOSCH, South Africa.
- a. Ontogenesis of the skull. *Hynobius fuscus* (*Urodela*, *Amphibia*)
- PERLMANN, H. P. — Wenner-Grens Inst. for exper. Biol., Norrtullsgatan 16, STOCKHOLM 23, Sweden.
- a. Serological and chemical studies on the proteins of developing sea urchin eggs. *Paracentrotus lividus* and *Arbacia lixula* (*Echinodermata*)
- PERRI, T. Dott., Prof. — Ist. di Anat. comp. dell'Univ. di Roma, Fac. di Sci., Via Borelli 50, ROMA, Italia.
- a. Ricerche sull'induzione di arti soprannumerari mediante trapianti di parti di ibridi o di embrioni irradiati con raggi X. *Bufo vulg.*, *B. viridis* (*Anfibi*)
  - b. Ricerche su trapianti e espianti tra *anfibi anuri* e *urodeli* allo scopo di indagare i processi di regolazione, differenziazione nel quadro dei problemi della costituzione biologica. (in collaboration with G. COTRONEI and Mrs L. URBANI-MISTRUZZI)
  - c. Gli incroci reciproci tra *Bufo vulgaris* e *Bufo viridis* studiati con la tecnica dei trapianti. (*Anfibi*)
  - d. L'azione biologica dei raggi X su embrioni e larve di *Anfibi* studiata con la tecnica dei trapianti.
- PERRY, J. H. Ph.D., Prof. — Dept of Anat., Baylor Univ., Coll. of Med., 1200 M.D. Anderson Blvd, Texas Med. Center, HOUSTON 5, Tex., U.S.A.
- a. Differentiation in the nervous system. *Amblystoma* (*Amphibia*)
  - b. Vascular patterns in the developing nervous system. *Homo sapiens*
  - c. Studies on regeneration of the central nervous system. *Canis* (*Mammalia*)
- PESONEN, S. Phil.Dr — Zool. Lab. of the Univ. of Turku, TURKU, Finland.
- a. The parthenogenetic development of unfertilized ova induced by chemical stimulation. *Albino rat* (*Mammals*)
  - b. The effect of substituted acetic acids on the early ontogenetic development. *Bufo* and *Rana* (*Anura*) and *Triturus* (*Urodela*)
  - c. On the effect of some proteins on the further development of chemically activated egg-cells in *albino rats*. (*Mammals*)
- PETER, K. Dr, Prof. (Emer.) — BIRKENSTEIN, Post FISCHBACHAU, Oberbayern, Deutschland.
- PETZOLD, R. — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- a. Cytological and electron microscopic studies on lens induction. *Gallus* (*Aves*) (in collaboration with P. A. WEISS and M. McKEEHAN)
  - b. Embryonic effects of organ-specific antibodies combined with radioactive tracers. *Gallus domesticus* (*Aves*) (in collaboration with P. A. WEISS)
- PFLEGER, Mlle D. Lic. ès Sc. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- a. Rôle des hormones dans la différenciation sexuelle. Etudes biochimiques sur la régression des canaux de Müller chez les *Oiseaux*. *Gallus* (*Aves*) (En collaboration avec Et. WOLFF)
- PFLUGFELDER, O. Dr rer. nat., Prof. — Zool. Inst. der Landwirtschaftl. Hochschule, STUTTGART-HOHENHEIM (14a), Deutschland.
- a. Funktion der inkretorischen Drüsen der *Insekten*, mit bes. Berücksichtigung der Metamorphose. *Carausius*

- b. Tumorentstehung nach Störung des Hormonhaushalts. (*Evertebrata* und *Vertebrata*)
- c. Wachstum und Differenzierung der Ganglienzellen des Mesencephalon von *Vertebraten* nach Exstirpation der Augen.
- PHILLIPS, R. J. S. B.Sc. — Med. Res. Council, Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- a. Developmental study of a new fifth-toe polydactyly character in *Mus musculus*. (*Mammalia*)
- PIATT, J. A.B., M.A., Ph.D., Assoc. Prof. — Dept of Anat., Univ. of Pennsylvania, School of Med., PHILADELPHIA 4, Pa, U.S.A.
- a. Transplantation of brachial cord segments in *Amblystoma punctatum* embryos. With a view to analyzing the factors responsible for normal cord structure and function; i.e. is continuity of neural axis necessary for the normal form and function of specific parts? (*Amphibia*)
- b. Survey of the motor regions of the brain of *Amblystoma*. With a view to a morphological and functional separation of each. (*Amphibia*)
- PIEPHO, H. Dr Phil., Prof. — Zool. Inst. der Univ. Göttingen, Mathem.-Naturw. Fak., Nicolausbergerweg 75, GÖTTINGEN, Deutschland.
- a. Metamorphose der *Insekten*.
- PINCUS, G. Dr, Prof. — Tufts Coll., Med. School and Worcester Foundation for Exper. Biol., 222, Maple Ave, SHREWSBURY, Mass., U.S.A. (no data received)
- PIOTROWSKA, J. — Inst. of Histol. and Embryol., Med. Acad., GDAŃSK, Poland.
- a. The ultraviolet influence on eggs under various experimental conditions. *Rana temporaria* (*Amphibia*)
- PISANO, A. Dr Biol.Sc. — Inst. de Zool., Univ. Nac. de Tucumán, Miguel Lillo 205, TUCUMAN, Argentinien, S. America.
- a. Parabiosis between pure breed and hybrid *Urodela*. *Triturus cristatus* and *T. vulgaris*
- b. El desarrollo del *Telmatobius schreiteri*. (*Anfibio, Anuro*)
- c. Trasplantes cruzados de regiones ectodermicas entre larvas de distintas formas geneticas de *Leptodactylus ocellatus*. (*Anfibio, Anuro*)
- d. Fecundación cruzada entre *Telmatobius schreiteri* e *Hyla raddiana*. (*Anfibio, Anuro*)
- CASTIGLI PITOTTI, Mrs M. Dott. — Ist. di Biol. gen., Fac. di Med., S. Pietro, PERUGIA, Italia.
- a. Natura della gastrulazione senza segmentazione. *Petromyzon fluviatilis*
- b. Azioni e reazioni nella metamorfosi degli *Anfibi*. *Bufo vulgaris*
- c. Fermenti embrionali. *Petromyzon* (*Ciclostomi*)
- PLANQUE, B. de — Hubrecht Lab., Internat. Embryol. Inst., Janskerkhof 2, UTRECHT, Holland.
- a. Regulation potencies in the neural plate. Formation of neural crest by regulation after implantation of young neural plate tissue in the ventral side of neurulae, or by homogenetic induction after implantation in middle gastrulae (heteroplastic transplantation). *Triturus taeniatus*, *alpestris* and *cristatus* (*Amphibia*)
- PLETZEN, R. van M.Sc. — Dept of Zool., Univ. of O.F.S., BLOEM-FONTEIN, South Africa. (stud. of Soöl. Inst., STELLENBOSCH)
- a. Ontogenesis and morphogenesis of the breast-shoulder apparatus (and of skeletogenous strata). *Xenopus laevis* (*Anura, Amphibia*)

- b. Ontogenesis of skeleton and muscles of shoulder girdle and forelimbs of *Xenopus laevis*. (*Anura, Amphibia*) (Normal Table)
- PORTMANN, A. Dr Phil., Prof. — Zool. Anstalt der Univ., Rheinsprung 9, BASEL, Schweiz.  
(no data received over this year)
- POULSON, D. F. Ph.D., Prof. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- Comparative studies on pole cells and mid gut differentiation in the genus *Drosophila* (*Diptera*).
  - Experimental studies on localization in the early embryo of *Drosophila*.
  - Investigations on chromosomal control of early development in *Drosophila melanogaster* by use of lethal chromosomal deficiencies. (*Diptera*)
- PRETO PARVIS, Mrs V. Dott.Med., Prof. — Ist. di Anat. umana norm. dell'Univ. di Milano, Via Mangiagalli 31, MILANO, Italia.
- Histogenesis and angiogenesis in the suprarenal gland of the cat. *Felis catus* (*Mammalia*)
  - Modifications of contents in nucleinic acids and of the nuclear apparatus in nervous cells during development in relation with their degree of growth and functional maturity. (Methods: Piekarski-Robinow; Feulgen; Golgi; Cajal) (*Mammalia*)
  - Study of the development of cytoarchitecture and genesis of the furrows in some areas of the cerebral cortex in *Man*. (*Mammalia*)
- RADECKA, E. M.Ph. — Inst. Zool., Uniw. we Wrocławiu, Zakład Zool. Ogólnej, ul. Sienkiewicza 21, WROCŁAW, Polska (Poland).
- Mitochondria during the development. *Parascaris equorum* (*Nematoda*)
- RADKOWA, M. Vet. Phys. — Zakład Histol. i Embryol., Uniw. Wrocławskiego, ul. Chałubińskiego 6a, WROCŁAW, Polska (Poland).
- Early developmental stages in mammals. (in collaboration with Z. SEMBRATOWA)
- RAMSEY, Mrs E. M. A.B., M.D., Res. Assoc. — Dept of Embryol., Carnegie Inst. of Washington, Wolfe and Madison Strs, BALTIMORE 5, Md, U.S.A.
- Placentation — Study of vascular pattern of endometrium throughout pregnancy. *Macaca mulatta* (*Rhesus monkey*) (*Mammalia*)
- RANDALL, J. T. Prof., F.R.S. — M.R.C. Biophysics Res. Unit, King's Coll., Strand, LONDON W.C. 2, England.
- Spermatogenesis of *Vivipara vivipara*, studied by classical techniques and by phase-contrast, polarised light, ultra-violet and electron microscopy. (*Gastropoda*) (in collaboration with E. J. HANSON and S. T. BAYLEY)
  - Cytogenesis of vertebrate striped muscle, studied in the electron microscope, and with the aid of tissue culture techniques. (in collaboration with E. J. HANSON and S. T. BAYLEY)
- RANZI, S. Dr, Prof. — Ist. di Zool. e Anat. comp., Univ. di Milano, Via Celoria 10, MILANO, Italia.
- Proteins in embryonic development. (*Amphibia*) and (*Echinodermata*)
- RAPPAPORT Jr, R. B.S., M.S. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- Regional density changes in the developing embryo in relation to growth and differentiation. *Rana pipiens* and *Amblystoma punctatum* (*Amphibia*) (under direction of J. S. NICHOLAS and E. J. BOELL)

- RAUNICH, L. Ph.D., M.D. — Ist. di Anat. comp., Via Belmeloro 8, BOLOGNA, (103), Italia.
- Development of blood and vascular system in *Petromyzon*, *Amia* and *Lepidosteus*. (*Petromyzontidae*, *Cyclostomes* and *Osteoganooids*)
  - Action of growth-substances on tail-regeneration. *Rana*, *Bufo* (*Amphibia*)
  - Determination of neural plate. *Triton*, *Axolotl* (*Amphibia*)
  - Lateral mesoderm explants in tail bud stage. (*Anura*)
- RAVEN, Chr. P. F.R.A., Dr Sc., Prof. — Zool. Lab. der Rijks Univ., Janskerkhof 3, Hubrecht Lab., Internat. Embryol. Inst., Janskerkhof 2, UTRECHT, Holland.
- Nature of polar plasms. *Limnaea stagnalis* (*Gastropoda*)
  - Influence of Li on the development of *Limnaea stagnalis*. (*Gastropoda*)
  - Development of isolated blastomeres. *Limnaea stagnalis* (*Gastropoda*)
  - Development of neural crest. *Xenopus laevis* (*Amphibia*) (Normal Table)
  - Development of head organs in normal and Li-treated embryos. *Limnaea stagnalis* (*Gastropoda*)
- RAWLÉS, Miss M. E. Ph.D. — Dept of Biol., The John Hopkins Univ., Charles and 34th Strs, BALTIMORE 18, Maryland, U.S.A.
- Analysis of the development of regional differences in feather color pattern. Factors affecting the distribution and development of melanin pigment-forming cells. *Gallus domesticus* (*Aves*)
  - Analysis of the processus involved in the development of pigmentation and pigmentation patterns in the hair and skin of mammals. Hooded Rat and C57 Black Mouse
- RAYNAUD, A. Dr ès Sc. — Lab. d'Embryol. du Lab. Pasteur de l'Inst. du Radium, 26, Rue d'Ulm, PARIS Ve, France.
- Étude du développement embryonnaire normal de l'appareil génital de la *Souris*. (*Mammifères*)
  - Recherches sur le développement embryonnaire des glandes prostatiques des *Mulots* (*Apodemus sylvaticus*) de sex femelle. (*Mammifères*)
  - Recherches expérimentales sur les facteurs du développement des différentes parties de l'appareil génital des embryons de *Souris*. (*Mammifères*):  
Étude de l'action des hormones sexuelles sur le développement de l'appareil génital des embryons.  
Étude des capacités de développement des différentes parties de l'appareil génital des embryons, après destruction des ébauches de l'hypophyse et des glandes génitales. (en collaboration avec M. FRILLEY)
  - Recherches sur le développement embryonnaire de la glande mammaire de la *Souris*. (*Mammifères*) (en collaboration avec M. FRILLEY)
- REEVE, E. C. R. B.A., Ph.D. — Genet. Lab., Anim. Breeding and Genet. Res. Organ., Inst. of Anim. Genetics, West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- Developmental study of lines selected for large and small body size in *Drosophila melanogaster*. (*Insecta*) (in collaboration with F. W. ROBERTSON)
- REHM, Frl. M. — Zool. Inst. der Univ. Tübingen, u. Max-Planck-Inst. für Biol., Hölderlinstr. 12, TÜBINGEN, Deutschland.
- Histogenese inkretorischer Organe in der Metamorphose bei der Wildform und bei Mutanten von *Ephestia*. (*Lepidoptera*)

- REINBOLD, R. Lic. ès Sci. — Lab. d'Embryol. et de Tératol. exp. de la Fac. des Sci. de l'Univ. de Strasbourg, 12, Rue de L'Université, STRASBOURG, France.
- Différenciation sexuelle normale et conditionnement hormonal du tubercule génital chez l'embryon de *Poulet*. *Gallus (Aves)*
- REIS, R. H. Ph.D. — Dept of Biol., Marquette Univ., 1131, West Wisconsin Ave, MILWAUKEE 3, Wis., U.S.A.
- A study of the anomalous renal vessels and inferior vena cava in different groups of *mammals*. *Canis familiaris* and *Felis domestica*
- REMOTTI, E. Prof. — Ist. di Anat. e Fisiol. comp., Univ. di Genova, GENOVA, Italia.
- Ricerche di fizioembriologia sull'uovo di *pollo*. (*Aves*)
  - Correlazione tra vasi e differenziazione epiteliale, e riferimenti al problema delle neoplasie. (*Vertebrata*)
  - Fattori funzionali nella differenziazione del sistema vasale. (*Vertebrata*)
- REVERBERI, G. Dr, Prof. — Ist. di Zool., Via Archirafi 18, PALERMO, Italia.
- The morphogenetic rôle of the yolk material in *Amphibians*, studied by means of heterospecific transplantations.
- REYER, R. W. Ph.D. — Dept of Anat., The School of Med., Univ. of Pittsburgh, PITTSBURGH 13, Pa, U.S.A.
- An experimental analysis of lens regeneration in *Amphibia*. *Triturus viridescens*, *Salamandra salamandra*, *Amblystoma punctatum*
  - A study of lens induction in *amphibian* embryos. *Triturus viridescens*, *Amblystoma punctatum*
- REYNOLDS, S. R. M. A.B., M.S., Ph.D., Member — Dept of Embryol., Carnegie Inst. of Washington, Wolfe and Madison Strs, BALTIMORE 5, Md, U.S.A.
- Factors in fetal maturity. *Homo*, *Macaca rhesus*, *Lepus cunic.* and *Ovis*
  - Fetal vascular physiology. *Homo*, *Lepus* and *Ovis (Mammalia)*
  - Uterine contraction patterns in *women*. (*Mammalia*)
- REYROLLE, Mlle J. Lic. ès Sc. — Lab. de Zool., Fac. des Sci., 1, Avenue Vercingétorix, CLERMONT, France.
- Développement du blastoderme de *cane* pendant les premières heures de l'incubation. (*Aves*)
- RHINES, R. B.S., M.S., M.B., Ph.D., M.D., Asst Prof. — Dept of Anat., School of Med., Univ. of Pennsylvania, PHILADELPHIA 4, Pa, U.S.A.
- Development of bone marrow in *rabbit's* ear tissue chambers. (*Mammals*) (In collaboration with R. G. WILLIAMS)
- RHODES, S. M.A. — Dept of Zool., Duke Univ., DURHAM, N.C., U.S.A.
- The lens induction in several *amphibian* species. Excision and transplantation of the presumptive optic and lens areas. *Rana clamitans*, *Rana catesbiana* (under direction of E. C. HORN)
- RIDLEY, Miss E. J. M.S. — Dept of Biol. Sci., Univ. of Pittsburgh, PITTSBURGH 13, Pa, U.S.A.
- The distribution of radio-phosphorous ( $P^{32}$ ) in the developing embryos of *Rana sylvatica* and *Rana pipiens* as demonstrated by radioautographic methods. (Early cleavage to completed operculum) (*Amphibia*, *Anura*) (in collaboration with J. F. GENNARO Jr.)

- b. The distribution of radio-phosphorous ( $P^{32}$ ) in metamorphosing larvae of *R. sylvatica* and *R. pipiens* as shown by radioautographs. (From complete operculum through the larval change) (*Amphibia, Anura*) (in collaboration with J. F. GENNARO Jr.)
- RISLER, H. Dr rer. nat. — Zool. Inst. der Univ. Tübingen, u. Max-Planck-Inst. für Biol., Hölderlinstr. 12, TÜBINGEN, Deutschland.
- a. Kernwachstum in verschiedenen Geweben während der Metamorphose bei *Ephestia kühniella*. (*Ptychopoda seriata, Lepidoptera*)
- RISLEY, P. L. A.B., M.S., Ph.D., Prof. — Dept of Biol., Univ. of Oregon, EUGENE, Ore., U.S.A. (no data received over this year)
- RIZZOLI, C. M.D. — Ist. di Istol. e Fisiol. gen., Via Belmeloro 8, BOLOGNA, Italia. (no data received over this year)
- ROBERTSEN, Mrs F. M. B.Sc. — Univ. Dept of Genet., Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- a. Morphological and experimental investigation of coiling in *Limnaea peregra*. (*Mollusca*)
- ROBERTSON, F. W. B.Sc., Ph.D. — Genet. Lab., Anim. Breeding and Genet. Res. Organ., Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- a. Developmental study of lines selected for large and small body size in *Drosophila melanogaster*. (*Insecta*) (in collaboration with E. C. R. REEVE)
- ROBERTSON, G. G. Ph.D., Prof. — Dept of Anat., Coll. of Med., Baylor Univ., 1200 M. D. Anderson Blvd, Texas Med. Center, HOUSTON 5, Tex., U.S.A.
- a. The appearance and development of ossification centers in *human* embryos. (*Mammalia*)
- b. The production of anomalies in *rat* embryos by nitrogen mustards. *Mus norvegicus* (*Mammalia*)
- ROCK, J. M.D. — Free Hospital for Women, 245, Pond Ave, BROOKLINE, Mass., U.S.A.
- a. Development of *human* ova from fertilization to 14 days (first missed menstrual period). (*Mammalia*) (in collaboration with A. T. HERTIG)
- b. A morphologic description of 3 segmenting *human* embryos: a 2-cell tubal ovum, a 30-cell early blastula (4 days-uterine), and a 60-cell blastula  $4\frac{1}{2}$ —5 days-uterine). (*Mammalia*) (in collaboration with A. T. HERTIG)
- ROETHELI, A. Dr Phil. — BÜREN a.A., Kant. Bern, Schweiz.
- a. Physiologie des *Knochenfischspermas*. (*Pisces*)
- ROGERS, K. T. A.B., M.A. — Biol. Lab's, Harvard Univ., Divinity Ave, CAMBRIDGE 38, Mass., U.S.A.
- a. Survey of experimental production of cyclopean *fish* embryos; study of their morphology, especially nerve tracts. *Fundulus heteroclitus* (*Pisces*)
- b. Study of the development of the eye and optic tracts of *chick* and of *owl* embryos, as compared with *fish*. *Gallus domesticus*, *Bubo virginianus*, *Otus asio* (*Aves*)
- ROLLHÄUSER, H. Dr Med. — Anat. Inst. der Univ., Robert Koch Str. 6, MARBURG/Lahn, Deutschland.
- a. Submikroskopische Strukturänderungen der kollagenen Fasern während des Wachstums. *Mensch* (*Säuger*)

- b. Polarisationsoptische und röntgenographische Analysen verschieden alten Sehnengewebes. *Mensch (Säuger)*
- ROOFE, P. G. Ph.D., Prof. — Dept of Anat., Univ. of Kansas, Med. School, LAWRENCE, Kan., U.S.A.
- a. Development of the central and peripheral nervous system in relation to behavior patterns along Coghillian lines of investigation. *Amblystoma maculatum* and *tigrinum* (*Amphibia*) (in collaboration with G. M. LEE)
- ROSE, S. M. Ph.D., Assoc. Prof. — Dept of Zool., Univ. of Illinois, URBANA, Ill., U.S.A.
- a. Dedifferentiation of normal and neoplastic tissues during limb regeneration in *Amphibia*.
- b. Demonstration that tumor agents can acquire new tissue and regional specificity. (*Amphibia*)
- c. Regeneration of X-rayed *amphibian* limbs receiving unirradiated epidermis.
- ROSENBAUM, R. M. B.S. — Biol. Lab., Harvard Univ., CAMBRIDGE 38, Mass., U.S.A.
- a. Cytochemistry of the egg. *Rana pipiens* (*Anura*), *Triturus viridescens* (*Salamandridae*)
- b. Chromosome phenomena in the early egg. *Rana pipiens* (*Anura*)
- ROSIN, S. Dr, P.D. — Zool. Inst. der Univ. Bern, Sahlistr. 8, BERN, Schweiz.
- a. Analyse genetischer und experimenteller Borstendefekte bei *Drosophila*. (*Insecta*)
- ROSSETTI, F. Dr — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- a. Factors determining size of Mauthner's cell. (*Amphibia*) (in collaboration with P. A. WEISS)
- ROSTAND, J. — 29, Rue Pradier, VILLE d'AVRAY, (Seine et Oise), France.
- a. Parthénogenèse et gynogenèse des *Batraciens*. Régulation chromosomique par le froid.
- b. Mutations de *Batraciens* (Polydactylie, Ectrodactylie, etc.): comportement héréditaire et physiologie génétique.
- c. Modifications des noyaux au cours de l'ontogenèse. (*Batraciens*)
- d. Survie de l'ovule in vitro, à basse température. (*Batraciens*)
- ROTHFELS, U. Ph.D. — Univ. of Colorado, Med. Center, Dept of Pediatrics, 4200 east Ninth Ave, DENVER 7, Col., U.S.A.
- a. Study of differentiation of *chick* somites in explants (Spratt technique). (*Aves*) (in collaboration with H. HERRMANN, L. LUBCHENCO and J. McKENZIE)
- b. Study of developmental disturbances related to nutritional deficiencies investigated by application of anti-vitamins and anti-amino acids to the intact egg and to explants (somites). In particular, it will be attempted to define the factors which maintain the balance between myotome, sclerotome and dermatome during differentiation of the somite and are required for the normal development of the retina (possible connection with retrolental fibroplasia of the premature *human* infant). (*Aves*) (in collaboration with H. HERRMANN, L. LUBCHENCO and J. McKENZIE)



- † ROTMANN, E. Dr phil. nat., Prof. — Inst. f. Entw.physiol., Kerpenerstr. 13, KÖLN-Lindenthal, Deutschland.
- a. Regionale Induktion bei *Amphibien*. *Triton*
  - b. Regeneration der Extremität. *Triton* (*Amphibia*)
- RUDNICK, Miss D. Ph.D. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- a. Histo- and cytogenesis of early embryonic tissues. *Gallus* (*Aves*)
- RUGH, R. Dr. Prof. — Coll. of Phys. and Surg., Columbia Univ., NEW YORK City, N.Y., U.S.A. (no data received)
- RUNNER, M. N. Ph.D., Prof. — Roscoe B. Jackson Memorial Lab., Box 558, BAR HARBOR, Me, U.S.A. (no data received over this year)
- RUNNSTRÖM, J. A. M. Ph.Dr. Med. Dr. Prof. — Wenner-Grens Inst. for exper. Biol., Norrtullsgatan 16, STOCKHOLM 23, Sweden.
- a. (Cf. work on the Institute). Physiology of fertilization and development in *Echinoderms*.
  - b. Analyzation of the nature of the egg antifertilizin. (*Echinodermata*) (in collaboration with A. MONROY, Marine Biol. Stat., WOODS HOLE, Mass., U.S.A.)
- RUSSEL, Miss E. S. A.B., M.A., Ph.D., Prof. — Roscoe B. Jackson Memorial Lab., Box 558, BAR HARBOR, Me, U.S.A. (no data received over this year)
- RUSSO, Miss E. — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- a. Role of various tissue components in *Urodele* limb regeneration. *Triturus* (*Amphibia*) (in collaboration with P. A. WEISS)
- RYKE, P. A. J. M.Sc. — Dept van Dierk., Potchefstroom Univ., POT-CHEFSTROOM, Suid-Afrika. (stud: Soöl. Inst., STELLENBOSCH)
- a. The ontogenesis of the dorsal myotomic (somatic) musculature of *Xenopus laevis*. (*Anura*, *Amphibia*)
  - b. The ontogenesis of skeleton and muscles of the trunk region of *Xenopus laevis*. (*Anura*, *Amphibia*) (in collaboration with A. L. SMIT) (Normal Table)
- SABBADIN, A. Dr — Ist. di Zool. e Anat. comp., Fac. di Sci., Via Lorendan 6, PADOVA, Italia.
- a. Determination of gonads. (*Amphibia*)
- SACERDOTE, Miss M. Dr — Inst. of Comp. Anat., Via Giovanni Giolitti 34, TORINO, Italy.
- a. Bilateral and unilateral removal of the ear vesicle to analyse the developmental relationships between the latter and the lime sacs. *Rana esculenta*, *Bufo vulgaris* (*Amphibia*) (in collaboration with A. GUARDABASSI)
- SALZGEBER, Mlle B. Lic. ès Sc. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- a. Recherches sur l'action d'agents physiques et chimiques sur la différenciation sexuelle.  
Recherches sur l'intersexualité expérimentale produite par irradiation aux rayons X. (*Aves*) (En collaboration avec Et. WOLFF)
- SANDISON, Miss E. E. B.Sc. — Dept of Zool., Univ. of Cape Town, RONDEBOSCH, South Africa. (Leaving in August 1950)
- a. The identification of the larvae of some South African *Barnacles* with notes on their life histories. (*Cirripedia*, several species).

SANTLER, Miss J. E. B.Sc. — Queen Mary Coll., Univ. of London, Mile End Rd, LONDON E. 1, England.

- a. Study of the development of *Diplopoda* (*Myriapoda*)

SATO, T. D.Sc., Dr phil.nat., Prof. — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.

- a. Linsenbildende Potenz des Pigmentepithels von *Urodelen*. *Hynobius tokyoensis* and *Triturus pyrrhogaster* (*Amphibia*)  
 b. Restitution des Auges nach sukzessiver Entfernung von einzelnen Augenhäute. *Triturus pyrrhogaster* (*Amphibia*) (unter Mitwirkung von M. HASEGAWA)  
 c. Linsenregeneration bei *Misgurnus*. (*Pisces*) (unter Mitwirkung von M. HASEGAWA)

SAUNDERS, J. W. Ph.D. — Dept of Biol., Marquette Univ., 1131, West Wisconsin Ave, MILWAUKEE 3, Wis., U.S.A.

- a. Identification of prospective pigment cells by means of vital dyes. *Gallus domesticus* (*Aves*)  
 b. Factors affecting the rate of melanin synthesis in the embryonic feather germ. *Gallus domesticus* (*Aves*)  
 c. The role of the ectoderm in the development of the wing of the fowl. *Gallus domesticus* (*Aves*)  
 d. An analysis of the factors affecting tract-specificity in embryonic feather areas. *Gallus domesticus* (*Aves*)

SAUSER, G. Dr, Dr, Mr, Prof. — Histol.-Embryol. Inst. der Univ. INNSBRÜCK, Tyrol, Austria.

- a. Entwicklungsphysiologie der verschlussfähigen Arterien. Vorwiegend *Mensch* (*Mammalia*)  
 b. Histophysiologie der Kerngrösse. (*Vertebrata* und *Vertebrata*)  
 c. Färbungs- und Konservierungstechnik. *Mensch*

SAWIN, P. B. Sc.D., Prof. — Roscoe B. Jackson Memorial Lab., Box 558, BAR HARBOR, Me, U.S.A. (no data received over this year)

SCHECHTMAN, A. M. A.B., Ph.D., Prof. — Dept of Zool., Univ. of California, LOS ANGELES 24, Cal., U.S.A.

- a. Plasma proteins of the developing chick embryo. (*Aves*) (in collaboration with G. W. NACE)  
 b. Evidence for the existence of distinctive embryonic plasma constituents in the developing chick. (*Aves*) (in collaboration with O. A. SCHJEIDE)

SCHENK, R. Dr Med. — Anat. Inst. der Univ. Zürich, Gloristr. 19, ZÜRICH, Schweiz.

- a. Einfluss weiblicher Sexualhormone auf die Histogenese von *Triton alpestris*. (*Amphibia*)  
 b. Mikrocephalie durch Defektoperationen in der Gegend des Urmundgrübchens von jungen *Tritongastrulae*. *Tr. alpestris* (*Amphibia*)

SCHJEIDE, O. A. B.A., M.A., cand. Ph.D. — Dept of Zool., Univ. of California, LOS ANGELES 24, Cal., U.S.A.

- a. Evidence for the existence of distinctive embryonic plasma constituents in the developing chick. (*Aves*) (in collaboration with A. M. SCHECHTMAN)

SCHMIRLER, H. — (Adresse via) Zool. Inst. der Univ. Würzburg, Naturwissenschaft. Fak., Röntgenring 10, WÜRZBURG, Deutschland. (im Lehrfach) *nelida*)

- a. Regenerationsversuche an verschieden alten *Tubifex rivulorum*. (*An-*

- SCHNEIDER, M. J. M.S. — Univ. of Colorado, Med. Center, Dept of Pediatrics, 4200 east Ninth Ave, DENVER 7, Col., U.S.A.
- Chemistry of muscle differentiation, determination of actin and myosin and phosphate fractions in muscle of *chick* embryos after the 7th day of development (concluded) (*Aves*) (in collaboration with H. HERRMANN and B. J. NEUKOM)
  - Determination and fractionation of nucleoproteins and determination of enzymes in *chick* somites from the 2nd to the 5th day of incubation and in differentiating *chick* muscle from the 7th day of incubation to hatching. (*Aves*) (in collaboration with H. HERRMANN and B. J. NEUKOM)
  - Chemical fractionation of cell nuclei and mitochondria of differentiating muscle of *chick*. (*Aves*) (in collaboration with H. HERRMANN and B. J. NEUKOM)
  - Histological examination of muscle development including quantitative determinations of volume of somite columns, of cell number and of mitotic index of somites. (in collaboration with H. HERRMANN and B. J. NEUKOM)
- SCHOTTÉ, O. E. Dr, Prof. — Dept of Biol., Amherst Coll., AMHERST, Mass., U.S.A. (no data received)
- SCHREIBER, B. Prof. — Ist. di. Zool. e Anat. comp., Via Celoria 10, MILANO, Italia.
- Bone induction. (*Amphibians*)
- SCHRIER, Miss J. — Dept of Zool. and Entomol., Div. of Sci., Iowa State Coll., AMES, Iowa, U.S.A.
- Experiments on the visceral pouches of the *chick* to ascertain their derivatives and especially the origin of the parathyroids. *Gallus domesticus* (*Aves*) (in collaboration with H. L. HAMILTON)
- SCHUÉ, Mlle M. Lic. ès Sc. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- Problèmes relatifs à l'origine des cellules de régénération chez les *Urodèles*. *Triturus* (*Amphibia*)
  - Problème de la réduction de la taille et du nombre de doigts du membre postérieur de l'embryon de *Poulet*, sous l'influence des rayons X. *Gallus domesticus* (*Aves*)
- SCHWINCK, Frl. I. — Zool. Inst. der Univ. Tübingen, u. Max-Planck-Inst. für Biol., Hölderlinstr. 12, TÜBINGEN, Deutschland.
- Metamorphoseveränderungen der Epidermis und inkretorischer Organe bei *Panorpa*. (*Insecta*)
- SCOTT, A. C. Ph.D. — Union Coll., SCHENECTADY, N.Y., U.S.A.
- Factors affecting germinal vesicle breakdown in the egg of *Chaetopterus pergamentaceus*. (*Vermes*)
  - Effect of respiratory-inhibitors on early development of marine eggs. *Urechis caupo* (*Vermes*) and *Arbacia punctulata* and *Dendraster eccentricus* (*Echinodermata*)
  - Effect of temperature on the rate of intrusion of the first cleavage furrow in *Arbacia punctulata*. (*Echinoidea*)
- SEDRA, Shokralla N. B.Sc., M.Sc., Ph.D., F.Z.S. — Dept of Zool., Farouk I Univ., Moharram Bey, ALEXANDRIA, Egypt.
- On the morphology of the suprarostal cartilage and the mandibular arch of the tadpoles of *Bufo lentiginosus*. (*Amphibia*)

- b. Stages in the normal development of *Bufo regularis*. (*Amphibia*)
  - c. Metamorphosis of the jaws and their muscles correlated with the changes in the animal's feeding habits. *Bufo regularis* (*Amphibia*)
  - d. The development of skull and visceral muscles of *Xenopus laevis* during metamorphosis. (*Amphibia*) (Normal Table)
- SEIDEL, F. Dr. Phil., Prof. — Max Planck-Inst. f. Tierzucht und Tierernährung, (20a) Mariensee üb. Neustadt a. Rügenberge, (Britische Zone), Deutschland.
- a. Morphologische und physiologische Untersuchungen an der embryonalen Entwicklung von *Wirbeltieren*. *Kaninchen* (*Mammalia*)
  - b. Morphologische und physiologische Untersuchungen an der embryonalen Entwicklung von *Insecten*. *Platycnemis* und *Gryllus* (*Hexapoda*)
- SEMBRAT, K. Ph.D., Prof. — Inst. Zool. Uniw. we Wrocławiu, Zakład Zool. Ogólnej, ul. Sienkiewicza 21, WROCŁAW, Polska (Poland)
- a. Experimental analysis of the early developmental stages of the Sea *Anemones*. *Sagartia leucolena* (*Anthozoa*)
  - b. Localization of the primary gonocytes in the early gastrula of *Amphibians*.
  - c. The morphogenetical functions of the thyroid gland in poikilothermic *Vertebrates*. (*Pisces*, *Amphibia* and *Reptilia*)
  - d. Early developmental stages in the *rat*. *Epimys norvegicus* (*Mammalia*)
- SEMBRATOWA, Z. M.D., Prof. — Zakład Histol. i Embryol. Uniw. Wrocławskiego, ul. Chałubińskiego 6a, WROCŁAW, Polska (Poland).
- a. Heteroplastic transplantation of the hind part of neural plate. *Amblystoma punctatum* and *A. tigrinum* (*Urodeles*)
  - b. Analysis of the hind part of the neural plate in *Anura*. *Rana palustris* and *R. silvatica*.
  - c. Early developmental stages in *mammals*. (in collaboration with M. RADKOWA)
- SENSENG, E. C. B.A., M.S., Ph.D., Prof. — Schools of Med. and Dent., Med. Center of the Univ. of Alabama, 620, South 20th Str., BIRMINGHAM 5, Ala., U.S.A.  
(no data received over this year)
- SHANER, R. F. Ph.D., F.R.S.C., Prof. — Dept of Anat. Univ. of Alberta, Med. School, EDMONTON, Alberta, Canada.
- a. A study of abnormal hearts in *pig* embryos corresponding to the third month of *human* development. (*Mammalia*)
  - b. Study of abnormal *pig* embryos in relation to the cause of complete and corrected transposition of the great vessels and ventricles of the heart. *Sus scrofa* (*Mammalia*)
  - c. Study of a collection of abnormal *pig* embryos of an age corresponding to the third month of *human* development with the aim of throwing light on the development of various *human* abnormalities. *Sus scrofa* (*Mammalia*)
- SHAPIRO, H. B.S., A.M., Ph.D., Prof. — Marine Biol. Lab., WOODS HOLE, Mass., U.S.A.  
(no data received over this year)
- SHAVER, J. R. A.B., Ph.D. — Dept of Zool., Univ. of Missouri, COLUMBIA, Mo., U.S.A.
- a. Initiation of artificial parthenogenesis in *frog* eggs. *Rana fusca* (*Anura*)
  - b. Immunological characteristics of embryonic cytoplasmic granules. *Rana fusca* (*Anura*)

- c. Biochemistry of development of frog embryos. *Rana fusca* (*Anura*)
  - d. Biochemical and histological characterisation of effects of cytoplasmic granules on growth of host cells of chorio-allantoic membranes of chick. *Gallus domesticus* (*Aves*)
  - e. Cytochemical analysis of activating nature of cytoplasmic granules in artificial parthenogenesis of frog eggs. *Rana pipiens* (*Amphibia*)
  - f. Immunological studies of specific reactions of cytoplasmic granules with host cells (chorio-allantoic membranes). *Gallus domesticus* (*Aves*)
- SHELLHAMER, R. H. B.A., M.A., Prof. — Dept of Anat., Ohio State Univ., COLUMBUS 10, Ohio, U.S.A.  
(no data received over this year)
- SHEN, S. C. Ph.D. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- a. The dissociation of morphological and biochemical development in the central nervous system of *Amblystoma punctatum*. (*Amphibia*) (in collaboration with E. J. BOELL)
  - b. A comparative study of the development of cholinesterase, succinic dehydrogenase, and respiratory activity in the central nervous system of *Amblystoma punctatum*. (*Amphibia*) (in collaboration with E. J. BOELL)
  - c. Development of respiratory enzymes in rat muscle. (*Mammals*) (in collaboration with E. J. BOELL)
- SHULOW, A. Dr — Dept of Zool., Hebrew Univ., JERUSALEM, Israel.
- a. Ecological conditions of development of the eggs. Artificially induced interruption of development (eggs) "diapause". (The changes in yearly development cycles under influence of dryness.) *Schistocerca gregaria*, *Tmethis cisti*, *Anacridium aegyptium*, *Pareuprepcnemis syriaca* and *Pezatettix judaica* (*Orthoptera*, *Insecta*)
- SIGOT, A. — Inst. de Zool., Lab. de Biol. génér., Fac. des Sci. de Strasbourg, 12, Rue de l'Université, STRASBOURG, France.
- a. Etude de la sensibilité héréditaire au gaz carbonique chez *Drosophila melanogaster*. (*Insecta*)
- SILBERBAUER, Mrs B. I. B.Sc. — Dept of Zool., Univ. of Cape Town, RONDEBOSCH, South Africa.
- a. Structure and development of Cape Crawfish, *Jasus Lalandii*. (*Decapoda*)
- SINCLAIR, J. G. B.S., M.S., Ph.D., Prof. — Dept of Anat., Med. Branch, Univ. of Texas, GALVESTON, Tex., U.S.A.
- a. Early human embryos, structure, conditions of implantation. (*Mammalia*)
  - b. Placental measurement, blood cell distribution and other observations related to birth. Special attention to twinning. *Human fetus* (*Mammalia*)
  - c. Effects of urethane on reproduction and on the young across the placenta. *Mice C57 and CBA*. (*Mammalia*)
- SINGER, Miss J. B.A. — Dept of Zool., Univ. of Bristol, BRISTOL, England.
- a. The induction of regeneration in the hydroid, *Cordylophora lacustris*.
- SINGER, M. A.M., Ph.D., Prof. — Dept of Anat., Harvard Med. School, 25, Shattuck Str., BOSTON 15, Mass., U.S.A.
- a. Influence of nerves on regeneration of urodele limb. *Triturus viridescens*
  - b. Histology of limb and nerve regeneration in urodele. *Triturus viridescens*

- SINHA, T. P. B.S., M.S., M.B., Prof. — Dept of Anat., Prince of Wales Med. College, PATNA, Behar, India.
- a. Physiology of the fetus. Changes in pulmonary blood volume at birth and in early postnatal life. *Guinea pigs (Mammals)* (In collaboration with W. F. WINDLE)
- SIPPEL, T. O. A.B. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- a. Correlation of the morphological, physiological and biochemical events in the differentiation of the heart, with emphasis on the systems controlling rate. *Amblystoma punctatum* and *Rana pipiens (Amphibia)*
- SKREB, N. Dr — Lab. d'Embryogénie comp., Coll. de France, Place Marcelin Berthelot, PARIS Ve, France.
- a. Etude des substances nécessaires à la croissance et à la différenciation du blastoderme de l'oeuf de *Truite, Salmo irideus*, séparé de son vitellus et cultivé in vitro. (*Pisces*) (en collaboration avec Ch. DEVILLERS)
- SLIJPER, E. J. Dr, Prof. — Bagian Ilmu Urai, Tenunan dan Lembaga, Fakultas Kedokteran Hewan, Balai Perguruan Tinggi R.I.S., Taman Kentjana 1, BOGOR, Indonesia.
- a. The embryonic bloodcirculation in *whales* (ductus Botalli, ductus Arantii, etc.). (*Mammals*)
- SŁOTWIŃSKI, J. Dr, Prof. — Inst. d'Histol. norm. et d'Embryol. de l'Univ. Poznań, ul. Swieczkiego 6, POZNAŃ, Pologne.
- a. Cytologie du développement de la membrane olfactive. (*Mammifères*)
- SMIT, A. L. M.Sc. — Zool. Inst., Univ. of Stellenbosch, STELLENBOSCH, South Africa.
- a. Ontogenesis of the vertebral column. *Xenopus laevis (Anura, Amphibia)*
  - b. Ontogenesis of skeleton and muscles of the trunk region of *Xenopus laevis. (Anura, Amphibia)* (in collaboration with P. A. J. RYKE) (Normal Table)
- SMIT, Miss J. E. H. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Analysis of lithium action. *Limnaea stagnalis (Gastropoda)* (in collaboration with G. A. van ARKEL, Miss E. v. d. BROEK, Mrs A. S. DUYKER—de BEER, Miss W. H. T. van HEESCH, J. C. N. KOK, J. W. KUIPER, Miss R. P. van LOO, E. D. NIJENHUIS and W. L. van UTRECHT)
- SMITH, Miss F. W. Ph.D. — Univ. of Tennessee, Fac. of Biol. Sci., Med. Div., MEMPHIS 3, Tenn., U.S.A.
- a. Determination of time of ovulation. *Homo (Mammalia)*
  - b. Influence of hormones upon the growth and differentiation of the stomach in *mice. (Rodents, Mammals)*
- SMRECZYŃSKI, S. Ph.D. — Zool. Dept of the Jagellonian Univ., KRAKOW (Cracow), St. Anne 6, Poland.
- a. Determination of early developmental stages in *Insecta. Agelastica alni (Coleoptera)*
- SNELLEN, H. A. Dr Med. — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.
- a. Investigations on congenital heartmalformations; X-ray and anatomical dissection; collateral circulations. *Homo (Mammalia)* (in collaboration with J. DANKMEIJER and Miss R. M. COLLISTER)

- SNOOK, T. Ph.D. — Dept of Anat., School of Med., Univ. of Pittsburgh, PITTSBURGH 13, Pa, U.S.A.
- a. Studies on the development of the spleen. *Homo sapiens (Mammalia)*
- SNYDER, F. F. M.D., A.M., Prof. — Dept of Obstetrics and Anat., Harvard Med. School, 25, Shattuck Str., BOSTON 15, Mass., U.S.A.
- a. Respiratory physiology of fetus and newborn. *Rabbit and Man (Mammals)*
- SOBELS, F. H. M.Sc. — Zool. Lab., State Univ. Utrecht, Janskerkhof 3, UTRECHT, Holland.
- a. Genetics and developmental physiology of a mutant character in *Drosophila mel.*, which inhibits the harmonious dorsomedian union of the imaginal primordia for the tergites, mesothorax and eyes. (*Insecta*)
- b. Developmental physiology and genetics of the lethal mutant character (lethal-translucida) in *Drosophila mel.* Meig. (*Insecta*)
- c. Developmental genetics of the lethal combination of two dominant mutant genes Dichaete and eyeless-dominant in *Drosophila mel.* Meig. (*Insecta*)
- SODERWALL, A. L. Ph.D., Prof. — Biol. Dept, Univ. of Oregon, EUGENE, Ore., U.S.A. (no data received over this year)
- SOLEWSKI, W. Dr — Zakład Anat. Porównawczej U.J. im. H. Hoyer, KRAKOW, św. Anny 6, Poland.
- a. Respiratory vessels in embryos of *Rhodeus amarus* L. (*Teleostei*)
- SPIRITO, A. Dott., Prof. — Ist. di Biol. gen., Fac. di Med., S. Pietro, PERUGIA, Italia.
- a. Origine e natura dei tumori. *Bufo (Anfibi)*
- SPOFFORD, W. R. Ph.D. — School of Med., State Univ. of New York, SYRACUSE 10, N.Y., U.S.A.
- a. Determination in neural plate (neurological patterns). *Amblystoma maculatum (Amphibia)*
- b. Posterior neural plate mesoderm. Regional induction. *Amblystoma*
- c. Induction of parts of the neural plate. *Amblystoma mac. (Amphibia)*
- d. Experimental neurogenesis. *Amblystoma mac. (Amphibia)*
- SPRATT, Jr, N. T. A.B., Ph.D., Prof. — Dept of Zool., Univ. of Minnesota, Coll. of Sci., Lit. and Arts, MINNEAPOLIS 14, Minn., U.S.A.
- a. Investigating the nutrient requirements essential to morphogenesis and growth in the early stages of chick development (pre-streak and streak blastoderms). (*Aves*)
- SPRONK, N. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Influence of beryllium salts. *Limnaea stagnalis (Gastropoda)*
- b. Developmental physiology of mutants. *Drosophila melanogaster (Insecta)* (in collaboration with Miss E. C. BOTERENBROOD, L. E. NIJENHUIS and F. J. OPPENOORTH)
- STALFOORT, Miss T. G. J. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Influence of citrate and oxalate on egg membrane. *Limnaea stagnalis (Gastropoda)*
- STARCK, D. Dr med., o.Prof. — Dr Senckenberg. Anat. Inst., Med. Fak. der Univ. Frankfurt/Main, Ludwig Rehnstr. 14, FRANKFURT/Main Süd, Deutschland.
- a. Chondrocranium and osteocranium of *Microchiroptera*, *Scotophilus temmincki* and *Myotis myotis*. (*Mammalia*) (comparative Embryology)

- b. Chondrocranium and osteocranium of *birds* especially orbitotemporal region of skull. *Struthio, Sula, Diomedea* and *Spheniscus (Aves)* (comparative Embryology)
- STÄRK, O. Dr — Heiligenberg-Inst. (Abtlg. Mangold), (17b) HEILIGENBERG, Kreis Oberlingen/Bodensee, Deutschland (Französische Zone).
- a. Entstehung und Determination der Geschlechtszellen und Gonaden bei *Urodelen* (gemeinsam mit O. MANGOLD). *Triton (Amphibien)*
- STEIGER, H. — Zool. Anstalt der Univ., Rheinsprung 9, BASEL, Schweiz. (no data received over this year)
- STEINER, H. Ph.D., Prof. — Zool.-vergl. Anat. Inst., Naturw. Fak., Univ. Zürich, Künstlergasse 16, ZÜRICH 6, Schweiz.
- a. Development of the *tetrapod*-limb with special reference to *Mammals*, (embryological evidence of their arboreal origin). (*Amphibia, Reptilia, Aves* and *Mammalia*)
- b. New embryological evidence of the "biogenetic law" in connection with the phenomenon of iteration and convergence, rudimentation and adaptation. (*Vertebrates*)
- c. Embryological analysis of feather-growth. The problems of the "after-schaft" and of "diastatasy". (*Ratites* and *Carinatae*) (*Aves*)
- d. Colour and pigment-differentiation in the *bird's* feather. *Melopsittacus undulatus*
- STEINERT, M. Lic.Sc. — Lab. de Morphol. anim., Univ. libre de Bruxelles, 1850, Chaussée de Wavre, BRUXELLES-Auderghem, Belgium.
- a. Studies on nucleic acids synthesis during morphogenesis. (Various species of *Amphibia*) (in collaboration with R. THOMAS)
- b. Action of specific nucleic acids on morphogenesis. (Various species of *Amphibia*) (in collaboration with R. THOMAS)
- STEFANELLI, A. Dr, Prof. — Ist. di Zool., Univ. di Stato, Viale S. Bartolomeo 1, CAGLIARI, Sardegna, Italia.
- a. Determination, differentiation and involution of nervous cells. (*Reptiles, Fishes* and *Amphibians*)
- b. Metamorphosis of nervous system in *Amphibians*.
- c. Regeneration of nervous tissue. (*Reptiles* and *Amphibians*)
- d. Embryo metabolism, respiration. (*Fishes* and *Amphibians*)
- e. Nucleic acid synthesis in development. (*Fishes*)
- STELT, A. v. d. — Zool. Lab., Univ. of Amsterdam, 44 Plantage Doklaan, AMSTERDAM, Holland.
- a. Investigation of the development of the artery-arches in *turtle* embryos. (*Reptilia*)
- STEPHAN, Fr. Lic. ès Sc. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- a. Formation du système vasculaire extraembryonnaire et son extension. Développement du coeur et des gros troncs artériels de l'embryon. *Gallus domesticus (Aves)*
- b. Etude expérimentale des anomalies et des suppléances vasculaires dans l'aire extraembryonnaire et l'embryon. *Gallus domesticus (Aves)*
- STEPHENSON, N. G. M.Sc. — Auckland Univ. Coll., New Zealand, Australia. (no data received over this year)



- STEVENS, L. C. Grad. stud. — Dept of Biol., Coll. of Arts and Sci., Univ. of Rochester, ROCHESTER 3, N.Y., U.S.A.
- a. Developmental potencies of the neural crest in *Anurae*. *Xenopus laevis*, *Rana pipiens*
- STEYN, W. J. M.Sc. — Hubrecht Lab., Internat. Embryol. Inst., 2, Janskerkhof, UTRECHT, Holland.
- a. Development of the gonadal system of *Xenopus laevis*, Daudin and *Discoglossus pictus*. (*Amphibia*)
  - b. Vital staining experiments on the early development of *Xenopus laevis*, Daudin and *Discoglossus pictus*. (*Amphibia*)
  - c. Investigations on the origin and destination of the germ cells, and the derivation and development of the gonads by means of xenoplastic transplantations between *Xenopus laevis*, Daudin and *Discoglossus pictus*. (*Amphibia*)
  - d. Development of nephroic and gonadal system of *Xenopus laevis*. (*Amphibia*) (Normal Table)
- STICH, H. Dr — Max Planck Institut, WILHELMSHAVEN, Deutschland.
- (no data received over this year)
- STIEVE, H. Dr, Prof. — Anat. Lab., Luisenstr. 56, BERLIN N.W. 7, Deutschland.
- (no data received)
- STOCH, Miss Z. B.Sc. Hons — Dept of Zool., Univ. of the Witwatersrand, Milner Park, JOHANNESBURG, South Africa.
- a. Spermatogenesis in *Elephantulus myurus jamesoni*. (*Mammalia*)
- STOCKARD, A. H. Ph.D. — Dept of Zool., Univ. of Michigan, ANN ARBOR, Mich., U.S.A.
- a. The early development of *Amia calva*. (*Pisces*)
- STOLL, R. C. Dr en Méd., Dr ès Sc. — Inst. d'Embryol. et de Morphol. expér., Fac. de Méd., 1, Place de l'Hôpital, STRASBOURG, (Bas-Rhin), France.
- a. Teratology. *Rana fusca* (*Amphibia*) and *Gallus* (*Aves*)
  - b. Development of the mullerian duct. *Chick* (*Aves*)
- STONE, L. S. Ph.D., Prof. — Osborn Zool. Lab. and Anat. Lab., Yale Univ. School of Med., NEW HAVEN 11, Conn., U.S.A.
- a. Complete analysis of the ocular mechanisms in *Amblystoma* and *Triturus* studying the regeneration of the lens and retina and regulation of the nervous mechanism after ocular transposition. (*Amphibia*)
- STRAUSS, F. Dr Med. — Anat. Inst., Bühlstr. 26, BERN, Schweiz.
- a. Early development and implantation of mammals. *Hominidae* (*Insectivora*)
  - b. Place of fertilization of the mammalian egg. (*Rodentia* and *Carnivora*) (in collaboration with H. W. MOSSMANN, Dept of Anat., Univ. of Wisconsin, MADISON, Wis., U.S.A.)
- STRAWIŃSKI, S. — Zakład Anat. Porównawczej i Embriol. Uniw. M. Kopernika, Sienkiewicza 30, TORUŃ, Poland.
- a. Development of the blood vessels in the frog. *Rana esculenta* (*Salientia*)
- STRUCHLY, Z. Dr — Inst. Zool. Uniw. we Wrocławiu, Zakład Zool. Ogólnej, ul. Sienkiewicza 21, WROCLAW, Polska (Poland).
- a. Influence of the blockade of the reticulo-endothelial system on the metamorphosis of *Amphibians*.

- STRUDEL, G. Lic. ès Sc. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- Les corrélations nerveuses chez l'embryon de *Poulet*. *Gallus domesticus*
  - Rôle des hormones dans la différentiation du sexe par les méthodes d'injections d'hormones. *Gallus domesticus* (*Aves*) (en collaboration avec Et. WOLFF et Mme Em. WOLFF)
- STULTZ, W. A. B.A., Ph.D., Prof. — Univ. of Vermont, Coll. of Med., BURLINGTON, Vt, U.S.A.  
(no data received over this year)
- SUGIYAMA, M. Dr Sci. — The Sugashima Marine Biol. Stat., Nagoya Univ., Sugashima-mura, Shima-gun, Mie-ken, Japan.
- Physiological studies on the fertilization and artificial parthenogenesis of the sea urchin eggs. *Strongylocentrotus pulcherrimus* (*Echinoidea*) (in collaboration with M. ISHIKAWA)
- SUOMALAINEN, H. Mag.phil. — Zool. Lab., Univ. of Helsinki, Dept of Physiol., P. Rautatiekatu 13, HELSINKI, Finland.
- Thyroid gland in delayed metamorphosis of *Xenopus* larvae. (*Amphibia*) (in collaboration with S. TOIVONEN)
- SWEDMARK, B. G. Fil.mag. — Inst. for Zoophysiol., Fac. of Mat.-Nat. Sci., Villavagen 9, UPPSALA, Sweden.
- Sulphate metabolism in sea urchin development. (*Echinodermata*)
- SZARSKI, K. W. Ph.D. — Zakład Anat. Porównawczej, Inst. Zool. Uniw., ul. Sienkiewicza 21, WROCŁAW, Poland.
- Development of the kidneys in *Anamnia*. (*Anura*, *Amphibia* and *Teleostei*)
- TAKATA, K. M.A. (Rigakushi) — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.
- Histochemical study of early developmental stages. *Rhacophorus schlegelii*, *Triturus pyrrhogaster* (*Amphibia*)
  - Regional distribution of ribonucleic acid in early developmental stages, studied quantitatively. *Triturus pyrrhogaster* (*Amphibia*) (in collaboration with T. YAMADA)
- TARDENT, P. — Abt. für Zoophysiol., Zool. Inst. der Univ., Sahlstr. 8, BERN, Schweiz.
- Regeneration bei *Coelenteraten*, *Hydrozoa*. (Bedeutung der I-Zellen) (in Zusammenarbeit mit F. E. LEHMANN)
- TEYSSEYRE, Mlle J. — Lab. d'Embryol., Fac. de Méd., 15, Rue Ecole de Méd., PARIS VIe, France.
- Développement de l'encéphale et particulièrement du diencephale. *Rat* (*Mammifères*)
- THEILER, K. Dr Med. — Anat. Inst. der Univ. Zürich, Gloristr. 19, ZÜRICH, Schweiz.
- Über die Entstehung von Blockwirbeln beim *Menschen*. (*Mammalia*)
  - Über die Entwicklung von Missbildungen der Wirbelsäule. *Mensch* und *Triton*. (*Vertebrata*)
- THERMES, G. Dr — Ist. di Zool., Univ. di Stato, Viale S. Bartolomeo 1, CAGLIARI, Sardegna, Italia.
- Regeneration of the spinal cord. (*Amphibians* and *Reptiles*)
- THOMAS, R. Lic.Sc. — Lab. de Morphol. anim., Univ. libre de Bruxelles, 1850, Chaussée de Wavre, BRUXELLES-Auderghem, Belgique.

- a. Studies on nucleic acids synthesis during morphogenesis. (Various species of *Amphibia*) (in collaboration with M. STEINERT)
- b. Action of specific nucleic acids on morphogenesis. (Various species of *Amphibia*) (in collaboration with M. STEINERT)
- THOMASON, Miss D. B.A. — Lab. de Morphol. anim., Univ. libre de Bruxelles, 1850, Chaussée de Wavre, BRUXELLES-Auderghem, Belgique. *Amphibia*
- a. Implantation of nuclei in *Amphibian* gastrulae. (Various species of *Amphibia*)
- b. Studies on cholesterinase synthesis during embryonic development. *Amblystoma mexicanum* (*Amphibia*)
- THOMSON FLYNN, T. Dr, Prof. — Fac. of Sci., Queens Univ., BELFAST, Ulster, Eire.
- TOIVONEN, S. Dr phil. — Zool. Lab., Univ. of Helsinki, Dept of Physiol., P. Rautatiekatu 13, HELSINKI, Finland.
- a. The specific action of heterogenous inductors. *Triton* (*Amphibia*)
- b. Analysis of the regulative potencies of the invaginating archenteron-roof and of the induced neural plate along the dorsoventral and cranio-caudal axes by heteroplastic transplantation of parts of the dorsal blastoporal lip. *Triturus alpestris*, *taeniatus* and *cristatus*. (*Amphibia*) (in collaboration with P. D. NIEUWKOOP)
- c. Thyroid gland in delayed metamorphosis of *Xenopus* larvae (*Amphibia*) (in collaboration with H. SUOMALAINEN)
- d. The development of mouth- and pharyngeal cavity of *Xenopus laevis* during metamorphosis. (*Anura*, *Amphibia*) (Normal Table)
- TÖNDURY, G. Prof. — Anat. Inst., Univ. Zürich, Gloristr. 19, ZÜRICH, Schweiz.
- a. Systematische Untersuchungen typischer *menschlicher* Missbildungen unter Bezugnahme auf die Ergebnisse entwicklungsphysiologischer Forschung. Gegenwärtig werden Kopfmisbildungen und sireniforme Missbildungen analysiert. (*Mammalia*)
- b. Untersuchungen über die Entwicklung des *menschlichen* Gesichts und ihre Beziehungen zur Entstehung der Hasenscharte und anderer Spaltbildungen. (*Mammalia*)
- c. Untersuchungen zur Frage der Gonadenentwicklung beim *Menschen* und der Potenzen des Ovariepitheles beim Erwachsenen. (*Mammalia*)
- d. Embryologische Untersuchungen zur Frage der Embryopathia rubeolosa. (*Mammalia*)
- e. Untersuchungen zum Wirkungsmechanismus der Sexualhormone auf Wachstum und Differenzierung. (*Amphibia*)
- f. Experimentelle Untersuchungen zum Induktionsproblem. (*Amphibia*)
- g. Experimentelle Untersuchungen zur Wirkung der Chorda dorsalis beim *Hühnchen*. (*Aves*)
- TOSI, Miss L. Dr — Ist. di Zool. e Anat. comp., Via Celoria 10, MILANO, Italia.
- a. Proteins in embryonic development. (*Amphibia* and *Echinodermata*)
- TOWNES, Ph. L. Grad.stud. — Dept of Biol., Coll. of Arts and Sci., Univ. of Rochester, ROCHESTER 3, N.Y., U.S.A.
- a. Selective cellular adhesion in embryonic germ layers. (*Urodeles* and *Anurans*)
- TRACY, H. C. Ph.D., Prof. — Dept of Anat., Univ. of Kansas, Med. School, LAWRENCE, Kan., U.S.A.

- a. The development of all systems of the *toadfish* in relationship to behavior. *Opsanus tau* (*Pisces*) (in collaboration with J. WINBLAD and Th. BATTY)
- b. Development of the nervous system of the *toadfish* in relation to its behavior. *Opsanus tau* (*Pisces*)
- c. Physiological stages in the development of the *toadfish*. *Opsanus tau* TRAMPUSCH, H. A. L. Dr Phil. — Anat.-Embryol. Lab., Univ. van Amsterdam, Mauritskade 61, AMSTERDAM O., Holland.
- a. Experiments on the head-organizer by means of X-rays and a new micro-surgical device. (*Amphibians*)
- b. Experiments on secondary inductors, mainly on sense-organs. (*Amphibians*)
- c. Experiments testing similarity in the processes which take place during embryological development and regeneration. (*Coelenterata*, *Vermes*, *Echinodermata*, etc.) (*Anura*)
- d. Experiments on the effect of X-rays on regeneration. (*Urodela* and *Anura*)
- e. Experiments searching for the origin and the way of developing of regeneration-blastema. (*Urodela* and *Anura*)
- TRIBE, Miss M. D.Sc. — King's Coll., Strand, LONDON W.C. 2, England.
- a. Development of the trabeculae and parachordals in the *Lamprey*. (*Cyclostomes*) (in collaboration with A. FISK)
- b. A critical note on the development of the *Vertebrate* kidney. (in collaboration with A. FISK)
- TRINKAUS, J. P. M.A., Ph.D. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- a. Mechanism of gastrulation in *teleost* eggs. The nature of the surface gel layer of the egg and its possible rôle in the cell movements (particularly epiboly) characteristic of *teleost* gastrulation. Extensive utilization of the methods of marking, wounding, transplantation. *Fundulus heteroclitus* (*Osteichthyes*)
- b. Rôle of hormones in differentiation of pigment patterns. Investigation of estrogen and thyroid hormone as morphogenetic agents in pigment pattern differentiation. The particular emphasis has been on the response of melanoblasts to these hormones and the rôle of epidermis in conditioning this response. *Gallus domesticus* (*Aves*)
- c. Investigation of the nutritional role of yolk and its constituents in early morphogenesis, by the method of explantation *in vitro* of yolk-free blastoderms at blastula and gastrula stages. *Fundulus heteroclitus* (*Osteichthyes*)
- TRUSLOVE, Miss G. M. B.Sc. — Dept of Genetics, Univ. Coll. London, Gower St, LONDON W.C. 1, England.
- a. Developmental genetics of skeletal mutants. *Mus musculus* (*Mammalia*)
- TSAI, Miss N. B.Sc. — Dept of Biol., Nat. Univ. of Chekiang, HANG-CHOW, China.
- a. Studies on eye-stalk hormone in *Crustacea*:
1. Isolation and purification of the hormone preparation.
  2. Chemical identification of the active principle.
  3. Mechanism of the hormonal action.
- Caridina denticulata* (*Decapoda*) (in collaboration with H. M. KIANG, J. CHU and P. S. CHOW)

- TSCHUMI, P. — Abt. für Zoophysiol., Zool. Inst. der Univ., Sahlistr. 8, BERN, Schweiz.
- a. Chemische Beeinflussung der Extremitätenbildung von *Xenopus*. (*Amphibia*)
- TSENG, Miss M.P. B.S. — Dept of Zool., Coll. of Sci., Nat. Univ. of Peking, Ching Shan Tung Chieh, PEIPING, China.
- a. Localization of the factors which cause situs inversus in tadpoles by defect and inversion experiments. (Removal and inversion of different parts of neural plate and chorda-mesoderm, or lateral plate). *Rana nigromaculata* (*Amphibia*)
  - b. Intestinal canal can only be formed in the whole embryo; in the extirpated entoderm no canal formation ever occurs. By combination of entoderm fragments with different parts of mesoderm in explants the formation of the intestinal canal may be studied. *Rana nigromaculata* (*Amphibia*)
  - c. Determination of: how entoderm regulates its lost parts; when entoderm loses its power of regulation; and whether the regulation power is lost gradually or suddenly at a certain stage. Moreover the question: whether the entoderm at the neural plate stage still retains its power of regulation when different portions of entoderm are removed. Afterwards earlier stages will be examined in similar way. *Rana nigromaculata* (*Amphibia*)
- TUFT, P. H. M.A., Ph.D. — Dept of Zool., Univ. of Edinburgh, West Mains Rd, EDINBURGH 9, Scotland.
- a. Respiratory metabolism of developing *Insect* eggs. *Rhodnius prolixus*, *Locustana pardalina* and *Calliphora*
- TUNG, T. C. Dr, Prof. — Dept of Zool., Univ. of Shantung, TSINGTAO, China. (no data received)
- TWEEDELL, K. S. — Dept of Zool., Univ. of Illinois, URBANA, Ill., U.S.A.
- a. Varying growth periods of the Lucke' carcinoma in different species of *Rana*. (*Amphibia*)
- TWITTY, V. C. Dr, Prof. — Dept of Biol. Sci., Stanford Univ., STANFORD, Cal., U.S.A.
- a. The differentiation of macrophages into melanophores following their ingestion of pigmentary debris released by degeneration of preexisting melanophores. (*Amphibians*) (in collaboration with M. C. NIU)
  - b. The origin of chromatophores of the salamander tail. (*Amphibians*) (in collaboration with M. C. NIU)
  - c. Factors influencing pigment differentiation in amphibian melanoblasts. (in collaboration with M. C. NIU)
  - d. The transformation of differentiated xanthophores into typical melanophores. (*Amphibians*) (in collaboration with M. C. NIU)
  - e. The differentiation of single isolated gastrula ectoderm cells cultured under special conditions in vitro. (*Amphibians*) (in collaboration with M. C. NIU)
  - f. The migratory behaviour of single neural crest melanoblasts isolated in capillary tubes of extremely small bore. (*Amphibians*) (in collaboration with M. C. NIU)
- TYLER, A. Ph.D., Prof. — Dept of Embryol., Div. of Biol., California Inst. of Technol., PASADENA 4, Cal., U.S.A.
- a. Physiology of fertilization. (various species of *Echinoids*)
  - b. Physiology of early development. (various species of *Echinoids* and various species of *Polychaets*)

- UBISCH, L. v. Dr jur. et phil., Prof. (Emer.) — PARADIS, Norge.
- Entwicklungsprobleme (Buch, c. 250 S.) (*Evertebraten und Vertebraten*)
  - Entwicklungsphysiologie (Buch, c. 100 S.) (*Evertebraten und Vertebraten*)
  - Entwicklungsgeschichte der Seeigel (Monogr. 100 S.) (*Echinodermata*)
  - Biologische Synthesen (Im Druck) (*Evertebraten und Vertebraten*)
  - Over abnorm fargete og inverse flatfisk. *Pleuronectes platessa*, *flesus* and pl. ♀ × fl. ♂ (*Pisces*)
  - Undersøkelser over *Pleuronectider*. I. Den embryonale utvikling av *Pleuronectes platessa*, Pl. *flesus* og de resiproke bastarder mellom begge arter. *Pleuronectes* pl. ♀ × fl. ♂ og *Pleuronectes* fl. ♀ × pl. ♂ (*Pisces*) Kjernestørrelses-beregninger og vekstforholdene.
- ULRICH, H. Dr Phil. — Zool. Inst. der Univ. Göttingen, Mathem.-Naturw. Fak., Nikolausbergerweg 75, GÖTTINGEN, Deutschland.
- Strahlenwirkung in der Embryologie von *Drosophila melanogaster*. (*Arthropoda*)
  - Pärogenetisch-bisexueller Cyclus von *Oligarces paradoxus*. (*Cecidomyiidae*, *Diptera*, *Arthropoda*)
- URBANI, E. Dott. — Ist. di Anat. comp. dell'Univ. di Roma, Fac. di Sci., Via Borelli 50, ROMA, Italia.
- Ricerche sulla respirazione embrionale dei *Teleostei*.
  - Azione degli antimitotici sul metabolismo respiratorio degli *Anfibi*.
  - Ricerche sulla determinazioni embrionali precoci nella *Ascidie*.
  - Ricerche sui determinanti germinali. (*Insecta*)
  - Ricerche sull'acido ribonucleico delle fasce vitellogene e dei nuclei vitellini. (*Echinodermata*, *Arachnoidea*, *Myriapoda* and *Mammalia*)
  - Ricerche sulla costituzione delle formazioni ergastoplasmatiche.
- URBANI-MISTRUZZI, Mrs L. Dott. — Ist. di Anat. comp. dell'Univ. di Roma, Fac. di Sci., Via Borelli 50, ROMA, Italia.
- Ricerche su parabiosi tra *anfibi*, *anuri* e *urodeli* allo scopo di indagare i processi di regolazione, differenziazione nel quadro dei problemi della costituzione biologica. (in collaboration with G. COTRONEI and T. PERRI)
  - Azione dei raggi X sugli embrioni di *Anfibi*, studiata con il metodo della parabiosi.
  - Ricerche sull'acido ascorbico durante lo sviluppo embrionale degli *Anfibi*.
- UTRECHT, W. L. van — Zool. Lab. der Rijks Univ. Utrecht, Janskerkhof 3, UTRECHT, Holland.
- Analysis of lithium action. *Limnaea stagnalis* (*Gastropoda*) (in collaboration with J. A. van ARKEL, Miss E. v. d. BROEK, Mrs A. S. DUYKER—de BEER, Miss W. H. T. van HEESCH, J. C. N. KOK, J. W. KUIPER, Miss R. P. van LOO, E. D. NIJENHUIS and Miss J. E. H. SMIT)
- VACHON, M. Dr — Lab. de Zool., Muséum Nat. de Paris, 61, Rue de Buffon, PARIS Ve, France.
- Embryologie et développement postembryonnaire. (*Arachnides et Myriapodes*)
- VAKAET, L. C. Cand. Med. — Lab. of Anat., Fac. of Med., Univ. of Gent, Bylokekaai 1, GENT, Belgium.
- Descriptive and cytochemical embryology. *Lebistes reticulatus* (*Teleostei*)

VANDEBROEK, G. Dr Sc., Prof. — Lab. d'Embryol., Inst. de Zool., Univ. de Louvain, 71, Rue de Namur, LOUVAIN, Belgique.

- a. Morphogenetic movements during the gastrulation of *Ascidia aspersa* and *Styela partita*. (*Ascidians*)
- b. The mechanics of gastrulation in *Ascidia aspersa* and *Styela partita*. (*Ascidians*)
- c. Protoplasmic movements after fertilization of *Ascidia aspersa*. (*Ascidians*)
- d. The organization of *Ascidian* embryos studied by the influence of centrifugation; a. action on isolated parts; b. local action of centrifugation. (recombination after centrifugation)
- e. Induction and competence phenomena during the development of *Ascidia aspersa*. (*Ascidians*)
- f. Action of LiCl and NaSCN on the development of *Ascidia aspersa* and *Styela partita*. (*Ascidians*)
- g. Development of the neural system of *Balanoglossus kowalewskii*. (*Enteropneusta*) (in collaboration with J. JANSSENS)
- h. Morphogenetic movements during gastrulation of *Coelenterata*, *Enteropneusta* and lower *Chordates*.
- i. The general comparative, descriptive and experimental embryology of the *Metazoa* and their classification. The place of the *Cycloneuria* (*Echinodermata*, *Enteropneusta*, *Pterobranchia* and *Chaetognatha*) in the animal Kingdom.
- j. The development of the trabeculae cranii in *perch* embryos from which the prosencephalon has been removed. *Perca* (*Osteichthyes*)
- k. The development of the trabeculae cranii in *perch* embryos treated with LiCl. *Perca* (*Osteichthyes*) (in collaboration with M. T. CLAES)
- l. Modifications of the competence in *Triturus taeniatus* after local action of LiCl. (*Urodeles*) (in collaboration with E. BONÉ)
- m. Study of the factors of morphogenesis in the embryo of *Saccoglossus kowalewskii*. The potencies of ectoblast isolated at the beginning of gastrulation. (*Enteropneusta*)
- n. The distribution of nucleic acids during the development of *Eisenia foetida* (*Annelida*), *Saccoglossus kowalewskii* (*Enteropneusta*) and *Ascidia aspersa* (*Tunicata*). (in collaboration with coworkers)

VANNINI, E. Dr, Lib. doc. — Ist. di Zool. e Anat. comp., Fac. di Sci., Via Loredan 6, PADOVA, Italia.

- a. Cycle of the nucleic acids during ovogenesis. (*Fishes* and *Amphibia*)
- b. Development and differentiation of the gonads, with special reference to embryological relations between the medullary tissue of the gonads and the cortico-adrenal blastema. (*Amphibia*, *Birds* and *Mammals*)
- c. Experimental actions of the steroid hormones (testosterone, oestradiol, progesterone, desoxycorticosterone on the sexual differentiation, with analysis of their stimulative or inhibiting effects on the development of the cortical or medullary tissues of the gonads. (*Amphibia* and *Birds*)
- d. Experimental regeneration and asexual multiplication (schizogenesis) in a hermaphrodite *Polychaete*, *Salmacina incrustans* (Clap.), with special reference to the origin and the sexualisation of the germ-cells.
- e. Experimental analysis of the causal development of the gonad in *Urodeles*. *Triturus alpestris* and *taeniatus* (Started at the Hubrecht Laboratory, Utrecht, Holland)

- VASSEUR, E. J. E. Ph.lic. — Wenner-Grens Inst. for exper. Biol., Norrtullsgatan 16, STOCKHOLM 23, Sweden.
- a. Studies on the chemical composition and the species specificity of its chemical composition. Action of dissolved jelly coat substance (fertilizin) on the spermatozoa. *Paracentrotus lividus*, *Psammechinus miliaris* and other sea urchins. (*Echinodermata*)
- VEEN, H. G. v. d. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Inhibition of development by distilled water. *Limnaea stagnalis* (*Gastropoda*)
- VERHEYEN, F. J. — Zool. Lab. der Rijks Univ., Janskerkhof 3, UTRECHT, Holland.
- a. Centrifugation of cleavage stages. *Limnaea stagnalis* (*Gastropoda*) (in collaboration with Miss M. T. C. van EGMOND)
- VERMAAK, D. B.Sc. — Zool. Inst., Univ. of Stellenbosch, STELLENBOSCH, South Africa.
- a. Ontogenesis of commissural connexions of the vena pudenda externa and v.p. interna in an advanced human embryo. *Homo sapiens* (*Primates, Mammalia*)
- VIGLIANI, F. Dr — Inst. of human Anat., Corso Massimo d'Azeglio 52, TORINO, Italy.
- a. Late development and growth of bones, joints and muscles in mechanically inert and denervated limbs. *Canis familiaris* (*Mammalia*)
- VILLAFRANCA, G. W. de B.S. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- a. Studies of various protein fractions in developing muscle in relation to changes in physical properties and the development of contractility. *Mus norvegicus albinus* (*Mammalia*) (under direction of E. J. BOELL)
- VINTEMBERGER, P. Dr Méd. — Inst. d'Embryol. et de Morphol. expér., Fac. de Méd., 1, Place de l'Hôpital, STRASBOURG, (Bas-Rhin), France.
- a. Recherches sur le déterminisme de la symétrie bilatérale chez les *Vertébrés*. (*Amphibiens*)
- VITAGLIANO, G. Dr Sc. — Ist. di Genet. dell'Univ. di Napoli, Fac. di Sci., Via Mezzocannone 8, NAPOLI, Italia.
- a. Ribonucleic acid supply to germ cells and determinism of meiosis. *Asellus* (*Crust., Isop.*)
- WADDINGTON, C. H. F.R.S., M.A., Sc.D., Prof. — Inst. of Anim. Genet., West Mains Rd, King's Buildings, EDINBURGH 9, U.K.
- a. Regional specificity in living and dead organizers. *Triton alpestris*
  - b. Cinematographic study of morphogenetic movements. (*Amphibians and Birds*)
  - c. Transplantation of cell constituents. *Triton alpestris* (*Amphibia*)
  - d. Developmental effects of some genes in *Drosophila melanogaster*. (*Insecta*)
  - e. Study of abnormal embryos induced by injecting trypan blue into pregnant mice. *Mus musculus* (*Mammalia*) (in collaboration with T. C. CARTER)
- WAECHTER, Miss H. Dr rer. nat. — Heiligenberg-Inst. (Abtlg. Mangold), (17b) HEILIGENBERG, Kreis Oberlingen/Bodensee, Deutschland (Französische Zone).



- a. Determinationsvorgänge in der Gastrula und Neurula von *Triton*. (*Amphibien*) (gemeinsam mit O. MANGOLD)
- b. Verhalten embryonaler Zellen im erwachsenen Wirt. *Triton* (*Amphibien*)
- WALANDER, A. Med.lic. — Tornblad-Inst. of comp. Embryol., Anat. Dept of the Univ. of Lund, LUND, Sweden.
- a. Prenatal development of the epithelial primordium of the larynx. *Rat* (*Mammals*)
- WALKER, P. M. B. B.A. — M.R.C. Biophysics Res. Unit, King's Coll., Strand, LONDON W.C. 2, England.
- a. Cytochemistry of cells growing in tissue culture, (including observations with an ultra-violet microscope). (*Aves* and *Mammalia*) (in collaboration with H. G. DAVIES)
- WALLACE, D. R. J. B.Sc. — Dept of Zool., Univ. of Edinburgh, West Mains Rd, EDINBURGH 9, Scotland.
- a. Growth and differentiation of *acarine* hypopi. (*Arachnida*)
- WALLMANN, Miss S. B.S. — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- a. Development and growth of *amphibian* lung. (under direction of P. A. WEISS)
- WANG, Y. T. B.S. — Dept of Zool., Coll. of Sci., Nat. Univ. of Peking, Ching Shan Tung Chieh, PEIPING, China.
- a. Mit Hilfe der Exstirpation des Entoderms in Neurula-stadium und der Defektsetzung in der Seitenplatte einer Spätgastrula und Frühneurula soll die Entstehung der Geschlechtszellen studiert werden. *Rana nigromaculata* (*Amphibia*)
- b. Der Zeitpunkt der Determination und der Auswanderung der Geschlechtszellen werden mit der Wiederholung der oben genannten Versuchen in verschiedenen Entwicklungsstadien zum feststellen versucht. *Rana nigromaculata* (*Amphibia*)
- WASHINGTON, Miss D. M.S. — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- a. Factors responsible for degeneration of the mesonephros in *birds*. *Gallus domesticus* (under direction of P. A. WEISS)
- WATTERSON, R. L. Ph.D. — Cresap Biol. Lab., Northwestern Univ., EVANSTON, Ill., U.S.A.
- a. The paired primordia of the *avian* glycogen body as revealed by glycogen-specific stains. *Gallus domesticus* (*Aves*)
- b. The production of twin glycogen bodies by mechanically preventing fusion of the paired primordia. *Gallus domesticus* (*Aves*)
- c. Effects of extirpation of the glycogen body in posthatching stages. *Gallus domesticus* (*Aves*)
- d. Quantitative analysis of the glycogen content of the glycogen body of the *chick* from hatching to adult stages. *Gallus domesticus* (*Aves*)
- e. Factors which initiate development of — and control the size of the *chick* glycogen body. *Gallus domesticus* (*Aves*)
- f. Effects of insulin injections upon development of the glycogen body. *Gallus domesticus* (*Aves*)
- WEBER, A. Prof. (Emer.) — Lab. de Neurohistol., Inst. d'Anat., École de Méd., 20, Rue École de Méd., GENÈVE, Suisse.  
(no data received over this year)

- WEGLARSKA, Miss B. — Zool. Dept of the Jagellonian Univ., KRAKOW (Cracow), St. Anne 6, Poland.
- a. Early developmental stages of *Insects. Agelastica alni* (Coleoptera)
- WEISS, P. A. Ph.D., M.D., Prof. — Dept of Zool., Univ. of Chicago, CHICAGO 37, Ill., U.S.A.
- a. Fate of embryonic cells after dissociation and reinjection into embryos. *Gallus domesticus* (Aves) (in collaboration with G. ANDRES)
- b. Mitogenic stimulation of epidermis by fragments of nervous system. (*Urodela*) (in collaboration with Miss J. OVERTON)
- c. Cytological and electronmicroscopic studies on lens induction. *Gallus* (Aves) (in collaboration with M. McKEEHAN and R. PETZOLD)
- d. Embryonic effects of organ-specific antibodies combined with radioactive tracers. *Gallus domesticus* (Aves) (in collaboration with R. PETZOLD)
- e. Fate of tissue culture cells introduced into embryos after prolonged cultivation in vitro. *Gallus domesticus* (Aves) (in collaboration with Miss I. FISCHER)
- f. Quantitative determination of cell shape in tissue culture. *Gallus domesticus* (Aves) (in collaboration with Mrs B. GARBER)
- g. Role of various tissue components in *Urodele* limb regeneration. *Triturus* (Amphibia) (in collaboration with Miss E. RUSSO)
- h. Factors determining size of Mauthner's cell. (Amphibia) (in collaboration with F. ROSSETTI)
- i. Development of intrinsic functional differences among brain parts tested by larval deplantation. (Amphibia) (in collaboration with Miss C. BLUMER)
- WEISZ, P. B. B.Sc., M.Sc., Ph.D. — Arnold Biol. Lab., Brown Univ., PROVIDENCE 12, R.I., U.S.A.
- a. Study of morphogenesis in *Ciliata. Stentor* and *Blepharisma*
- b. Study of self-reproducing organelles. (*Ciliata*)
- WEL, W. H. v. d. Med.Cand. — Anat.-Embryol. Lab. of the Univ. of Leyden, Fac. of Med., Boerhaavekwartier, Wassenaarseweg, LEIDEN, Holland.
- a. Development of the circulatory system in *man* and various *mammals*. *Cow, Guinea pig, Rat* and *Man*
- WELLS, L. J. Ph.D., Prof. — Inst. of Anat., Univ. of Minnesota, MINNEAPOLIS 14, Minn., U.S.A. (no data received over this year)
- WENDT, G. G. Dr Med. — Anat. Inst. der Univ., Robert Koch Str. 6, MARBURG/Lahn, Deutschland.
- a. Ablauf und Bedingungen embryonalen Muskelwachstums. Änderungen des Gewichts, des Volumens und der Faser-Histochemie während des Wachstums. *Maus* (Stamm Strong A.) (*Säuger*)
- WENGER, B. S. B.S., M.S., Ph.D. — Dept of Pharmacol., School of Med., Washington Univ., ST LOUIS 10, Mo., U.S.A.
- a. Determination of structural patterns in the spinal cord of the *chick* embryo studied by transplantations between brachial and adjacent levels. *Gallus domesticus* (Aves)
- b. Patterns of chemical and enzymatic development in different spinal cord levels of the embryonic *chick* studied by ultramicrochemical techniques. *Gallus domesticus* (Aves)
- c. Method for staining embryos in toto with iron hematoxylin.
- d. Fabrication of metallic instruments for embryonic operations.

- WENGER, Mrs E. L. B.A., M.A., Ph.D. — Dept of Zool., Grad. School of Arts and Sci., Washington Univ., Lindell and Skinker Aves, ST LOUIS 5, Mo., U.S.A.
- Analysis of interrelations between parts of the embryonic spinal cord by means of defect experiments. *Gallus domesticus* (*Aves*)
  - Radio-active tracer study of *amphibian* eggs, with special reference to organizer action. (in collaboration with F. MOOG)
  - Studies on phosphorous metabolism of *amphibian* embryos by means of P<sup>32</sup>. *Rana pipiens* (in collaboration with F. MOOG)
  - Cytological and cytochemical studies of the developing *chick* duodenum. *Gallus domesticus* (*Aves*) (in collaboration with F. MOOG)
- WESTHUIZEN, C. M. v. d. M.Sc. — Zool. Inst., Univ. of Stellenbosch, STELLENBOSCH, South Africa.
- Ontogenesis of the skull. *Heleophryne purcelli* (*Anura*, *Amphibia*)
- WESTRA, S. — Anat.-Embryol. Lab., Oostersingel 69, GRONINGEN, Holland.
- Embryological development of the roof of the fourth ventricle in *Man*. (*Mammals*)
- WETMORE, R. H. Ph.D., D.Sc., Prof. — Biol. Lab's, Harvard Univ., Divinity Ave, CAMBRIDGE 38, Mass., U.S.A.
- Development in vascular *plants*, supported by studies in tissue culture, grafting, regeneration and transplantation. On various species of *ferns*, *horsetails* and *Selaginella* especially.
  - Morphogenetic factors concerned with early development of eggs and spores in *plants*. In certain *ferns* and *Selaginellas*.
- WHITAKER, D. Dr, Prof. — Stanford Univ., PALO ALTO, Cal., U.S.A. (no data received)
- WHITELEY, A. H. Ph.D., Prof. — Dept of Zool., Univ. of Washington, SEATTLE 5, Wash., U.S.A.
- Study of the importance of the phosphorylated compounds in the energetic changes accompanying activation of the eggs of *echinoderms*. *Strongylocentrotus purpuratus*
- WICKLUND, Miss E. Ph.lic. — Wenner-Grens Inst. for exper. Biol., Norrtullsgatan 16, STOCKHOLM 23, Sweden.
- On fertilizability of the egg under different conditions acting on sperm and eggs. *Psammechinus miliaris*, *Strongylocentrotus droebachiensis* and *Arbacia lixula* (*Echinodermata*)
- WIERDA, J. L. B.S., M.S., Ph.D., Asst Prof. — Dept of Anat., School of Med., Univ. of Pennsylvania, PHILADELPHIA 4, Pa, U.S.A.
- Relation of diets to growth in length and weight of the gastro-intestinal tract of the *white rat*. (*Mammals*)
- WILENS, Miss S. A.B. — Osborn Zool. Lab., Yale Univ., NEW HAVEN 11, Conn., U.S.A.
- Vital staining of mesoderm and endoderm under the midbrain and hind-brain and adjacent ventral regions. *Amblystoma punctatum* (*Urodeles*)
- WILLIAMS, R. G. A.B., M.A., M.D., Prof. — Dept of Anat., School of Med., Univ. of Pennsylvania, PHILADELPHIA 4, Pa, U.S.A.
- Studies on growth of various implanted tissues with the *rabbit's* ear chamber technique. (*Mammals*) (in collaboration with E. R. CLARK)
  - Development of bone marrow in *rabbit's* ear tissue chambers. (*Mammals*) (in collaboration with R. RHINES)

WILLIAMS, S. C. B.S., Ph.D., Asst Prof. — Dept of Anat., School of Med., Univ. of Pennsylvania, PHILADELPHIA 4, Pa, U.S.A.

- a. Tissue culture of young isolated neuroblasts from special areas of brain, esp. cerebellum, trigeminal. *Chick* and *Man* (*Higher Vertebrates*) (in collaboration with Miss M. J. HOGUE)
- b. Early development of *human* teeth. (*Mammals*)

WILLIAMS, T. W. B.S., M.S., Ph.D., Prof. — School of Med., West Virginia Univ., MORGANTOWN, W.Va., U.S.A.  
(no data received over this year)

WILLIER, B. H. B.S., Ph.D., D.Sc., Prof. — Dept of Biol., John Hopkins Univ., Charles and 34th Strs, BALTIMORE 18, Maryland, U.S.A.

- a. The mechanism of interaction of melanoblasts of known genotype with feather papilla in the production of feather pigmentation pattern. *Gallus domesticus* (various varieties) (*Aves*)
- b. Factors regulating migration of melanoblasts and their growth (multiplication) and differentiation (synthesis of specific melanin granules). *Gallus domesticus* (various varieties) (*Aves*)
- c. The rôle that sex and other hormones play in modifying the phenotypic expression of melanoblasts in color pattern formation. *Gallus domesticus* (various varieties) (*Aves*)

WILSON, J. W. Ph.D., Prof. — Arnold Biol. Lab., Brown Univ., PROVIDENCE 12, R.I., U.S.A.

- a. A study of mitotic activity and other cytological phenomena in liver regeneration. (*Vertebrates*)

WINBLAD, J. A.B. — Dept of Anat., Univ. of Kansas, Med. School, LAWRENCE, Kan., U.S.A.

- a. Development of all systems of the *toadfish* in relation to behavior. *Opsanus tau* (*Pisces*) (in collaboration with H. C. TRACY and Th. BATTY)
- b. Pharmacodynamics of the development of the *toadfish*. *Opsanus tau* (*Pisces*)

WINDLE, W. F. B.S., M.S., Ph.D., Sc.D., Prof. — Dept of Anat., Univ. of Pennsylvania, School of Med., PHILADELPHIA 4, Pa, U.S.A.

- a. Development of fiber tracts in brain of *human* embryos of 4th to 7th week. (*Mammalia*)
- b. Development of chromophil substance in central nervous system neurons. *Guinea pig* and *man* (*Mammalia*) (in collaboration with A. LAVELLE)
- c. Regeneration in *mammalian* central nervous system. (Recovery of neurons following trauma, alterations in their internal environment). *Cat* and *dog* (*Mammalia*) (in collaboration with J. C. LIU and other coworkers)
- d. Changes in pulmonary blood volume at birth and in early postnatal life. *Guinea pig* (*Mammalia*) (in collaboration with T. P. SINHA)
- e. Structure of the coronary arteries at birth. *Man* (*Mammalia*)
- f. Extramedullary hemopoiesis in the *rabbit* and *cat* induced by bacterial pyrozoenic extracts. (*Mammalia*)
- g. Regeneration in the spinal cord of the *cat* and *dog*. (*Mammalia*) (in collaboration with W. W. CHAMBERS)

WINGSTRAND, K. G. Fil.lic. — Embryol. Dept, Zool. Inst., Univ. of Lund, LUND, Sweden.

- a. Embryology of *birds*, esp. development of hypophysis and vessels in connection with them.

- WINOWSKA, Mrs J. M.Sc. — Zakład Anat. Porównawczej, Inst. Zool. Uniw., ul. Sienkiewicza 21, WROCŁAW, Poland.
- a. Development of the air-bladder in the *Teleost, Xiphophorus*. (*Fishes*)
- WIRTH, Miss P. B.S. — Dept of Biol. Sci., Univ. of Pittsburgh, PITTSBURGH 13, Pa, U.S.A.
- a. The stages and normal development of metamorphosing *R. sylvatica* larvae under natural conditions. (Compared to animals grown in "standard" laboratory environment) (*Amphibia, Anura*) (in collaboration with J. F. GENNARO Jr. and D. B. GOODMAN)
  - b. The effect of X-irradiation on tail resorption in *Anura*. (Resorption of tail irradiated entirely and in isolated areas) *R. clamitans* (in collaboration with J. F. GENNARO Jr.)
- WISKONT, E. H. — Inst. of Histol. and Embryol. Med. Acad., GDAŃSK, Poland.
- a. Regeneration in *Amphibians*. The influence of inanition on that phenomenon. (in collaboration with S. HILLER and T. KROTKIEWICZ)
- WISLOCKI, G. B. M.D., A.M., Prof. — Dept of Anat., Harvard Med. School, 25, Shattuck Str., BOSTON 15, Mass., U.S.A.
- a. The cytology and histochemistry of the uterus and placenta. (*Mammals*)
- WITSCHI, E. Ph.D., Prof. — Dept of Zool., State Univ. of Iowa, IOWA CITY, Iowa, U.S.A.
- a. Neoplastic development of overripe frog eggs. (*Anurans*)
  - b. Metamorphosis of the *amphibian* ear. (*Anurans*)
  - c. Nutritional conditions in the incubating *bird's* egg.
- WITTEK, Mlle M. — Lab. d'Anat. et d'Embryol., Fac. de Méd. de l'Univ., 97, Rue aux Laines, BRUXELLES, Belgique.
- a. Oogenesis and vitellogenesis of various *Amphibians*. (under direction of J. PASTEELS)
  - b. Oogenesis of *Reptiles. Lacerta vivipara* (under direction of J. PASTEELS)
- WOELLWARTH, C. v. Dr Phil. — Heiligenberg-Inst. (Abtlg. Mangold), (17b) HEILIGENBERG, Kreis Oberlingen/Bodensee, Deutschland (Französische Zone).
- a. Determination des Gehirns (Isolations- und Transplantations-experimente). *Triton (Amphibia)*
- WOERDEMAN, M. W. M.D., D.Sc. (Oxon), Prof. — Anat.-Embryol. Inst., Univ. van Amsterdam, Mauritskade 61, AMSTERDAM O., Holland.
- a. Lensregeneration. (*Birds and Mammals*)
  - b. Induction in tissue cultures and potencies of cells in tissue culture. (*Birds and Mammals*)
  - c. Development of specific substances during induction and regeneration. (*Amphibia and Birds*)
- WOLFF, Mme Em. Dr ès Sc. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Tératol. expér. du C.N.R.S., Institut de Zool. et de Biol. générale, 12, Rue de l'Université, STRASBOURG, France.
- a. Rôle des hormones dans la différenciation du sexe par les méthodes d'injections d'hormones et des castrations embryonnaires. Détermination des caractères somatiques précoces — syrinx et tubercule génital — du *Canard. Anas boschas (Aves)* (En collaboration avec Et. WOLFF)

WOLFF, Et. C. Dr ès Sc., Prof. — Lab. de Zool. de la Fac. des Sci. et Lab. d'Embryol. et Térat. expér. du C.N.R.S., Inst. de Zool. et de Biol. gén., 12, Rue de l'Université, STRASBOURG, France.

- a. Recherches expérimentales sur l'Embryologie et la Tératologie des Oiseaux — Monstres simples, monstres doubles et poly-embryonie.
- b. La différenciation sexuelle chez les Oiseaux, par les méthodes de greffes, de castration, d'injections d'hormones et d'explantations. Différenciation normale et inversion sexuelle des gonades, des voies génitales et des caractères somatiques précoces. *Gallus* et *Anas* (Aves) (En collaboration avec Mme Em. WOLFF, Mlle Y. OSTERAG, Mlle D. PFLEGER, Mlle B. SALZGEBER, A. HAMPÉ et G. STRUDEL).
- c. Problèmes relatifs à la régénération des Planaires d'eau douce. Origine des cellules de régénération et processus d'induction dans la régénération. *Polycelis nigra*, *Euplanaria lugubris* (Turbellariés) (En collaboration avec Mlle F. DUBOIS et Th. LENDER).
- d. Organogénèse de la face et du système nerveux. *Gallus domesticus* (Aves) (en collaboration avec W. HUBER)
- e. Étude du développement et de la régression du mésonéphros chez l'embryon d'Oiseau. *Gallus* (Aves) (en collaboration avec Mlle K. HAFFEN)

WSZELACZYŃSKA, Miss M. Dr — Inst. of Histol. and Embryol., Med. Acad., GDAŃSK, Poland.

- a. Haploid embryos of Amphibians in parabiosis. *Rana fusca*

YAMADA, T. D.S., Asst Prof. — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.

- a. Analysis of caudal induction in the isolated ectoderm by adult tissues. *Triturus pyrrhogaster* (Amphibia)
- b. Dorsalization of the isolated latero-ventral marginal zone through ammonia-treatment. *Triturus pyrrhogaster* (Amphibia)
- c. Double potential theory of early ontogenesis, its application to the regionality of the organizer action. (Vertebrates)
- d. Regional character of induction obtained in the isolates through implantation of an extracted protein. *Triturus pyrrhogaster* (Amphibia)
- e. Regional distribution of ribonucleic acid in early ontogenesis, studied quantitatively. *Triturus pyrrhogaster* (Amphibia) (in collaboration with K. TAKATA)
- f. Regional distribution of amino-acids in early ontogenesis, studied quantitatively. *Triturus pyrrhogaster* (Amphibia) (in collaboration with S. OSAWA)

YAMAMOTO, T. Dr Sc., Prof. — Biol. Inst., Fac. Sci., Nagoya Univ., Chigusa-Ku, NAGOYA, Japan.

- a. On the mechanism of fertilization and activation in the egg of the fish. *Oryzias latipes* (Pisces)
- b. Experimental analysis of the development of sexual characters in the fish. *Oryzias latipes* (Pisces)

YAO, T. B.Sc., Ph.D. — Dept of Biol., Nat. Univ. of Chekiang, HANG-CHOW, China.

- a. Biochemical and physiological studies of *Drosophila melanogaster* development. (Insecta)

YCAS, M. Ph.D. — Dept of Embryol., Div. of Biol., California Inst. of Technol., PASADENA 4, Cal., U.S.A.

- a. Respiratory enzymes of *sea-urchin* eggs. *Strongylocentrotus purpuratus*. *Lytechinus pictus* (*Echinoderms*)
- YNTEMA, C. L. Ph.D., Prof. — Dept of Anat., School of Med., State Univ. of New York, SYRACUSE 10, N.Y., U.S.A.
- a. Induction and differentiation of ear ectoderm. *Amblystoma punctatum* (*Amphibia*)
- b. Regeneration of aneural limbs. *Amblystoma punctatum* (*Amphibia*)
- c. Development of autonomic nervous system. *Gallus domesticus* (*Aves*) (in collaboration with W. S. HAMMOND)
- d. Effects of sulfa drugs on *mammalian* embryo. *Mus musculus* (in collaboration with W. S. HAMMOND)
- YOUNG, W. C. Ph.D., Prof. — Dept of Anat., Univ. of Kansas, Med. School, LAWRENCE, Kan., U.S.A.
- a. Reproduction as influenced by hypothyroidism and hyperthyroidism in both male and female *guinea pig*. *Cavia porcellus* (*Mammals*)
- b. Sexual behavior in the male *guinea pig*. *Cavia porcellus* (*Mammals*)
- ZAAIJER, Miss J. J. P. Biol. Dra — Lab. for Exper. Histol., Fac. of Med., Univ. of Leyden, Wassenaarseweg, Boerhaavekwartier, LEIDEN, Holland.
- a. Factors governing dentin formation. *Mus musculus* (*Mammalia*)
- b. Rôle of the odontoblasts in the formation of secondary dentin. *Mus musculus* (*Mammalia*)
- ZACWILICHOWSKA, Miss K. D.Sc. — Zool. Dept. of the Jagellonian Univ., KRAKOW (Cracow), St. Anne 6, Poland.
- a. Early developmental stages of *Asellus aquaticus* L. (*Crustacea*)
- ZEUTHEN, E. Dr Phil. — Lab. of Zoophysiology, Univ. of Copenhagen, Nat. Sci. Fac., Juliane Mariesvej 32, COPENHAGEN Ø, Denmark.
- a. Study with Cartesian divers of mitotic rhythm in metabolism during cleavage period. (*Echinodermata* and *Amphibia*)
- b. Determination of desoxyribonucleic acid in eggs and embryos. (*Amphibia*)
- ZUCKERMAN, S. M.A., M.D., D.Sc., M.R.C.S., L.R.C.P., F.R.S., Prof. — Dept of Anat., The Med. School, Birmingham Univ., Edgbaston, BIRMINGHAM 15, England.
- a. Study of oogenetic function. *Rodents*, *Monkeys* and *Ferrets* (*Mammals*)
- ZWILLING, E. Ph.D., Assoc. Prof. — Dept of Genet., Coll. of Agric., Univ. of Connecticut, Storrs Agric. Exper. Stat., STORRS, Conn., U.S.A.
- a. Hypoglycemia following injection of insulin into *chick* embryos of 30 hours of incubation; relation to rumplessness and micromelia. *Gallus domesticus* (*Aves*)
- b. Carbohydrate metabolism of insulin-treated *chick* embryos. Analyses of embryo and yolk-sac membrane for glycogen, free sugar and total carbohydrate. *Gallus domesticus* (*Aves*)
- c. Effect of nicotinamide on growth retarding action of insulin in *chick* embryos. *Gallus domesticus* (*Aves*)
- d. Analysis, by means of tantalum-foil blocking, of the development of the tail in *chick* embryos. *Gallus domesticus* (*Aves*) (in collaboration with Miss CRAIG)

**LIST OF INSTITUTES**  
with Composition of Scientific Staffs  
(geographical order)

**N. A F R I C A**

**Alexandria**, Moharram Bey, Farouk  
I Univ., Fac. of Sci.,  
Dept of Zool.

**GHAZZAWI**, F. M. Prof.,  
Head of Dept  
\* **SEDRA**, S. N. Lect. of Embryol.

**S. A F R I C A**

**Bloemfontein**, Univ. of the O.F.S.,  
Dept of Zool.

**MALAN**, D. E. Head  
\* **ELOFF**, F. C. Lect.

**DREYER**, T. F. Dir.  
\* **PLETZEN**, R. van Lect.  
\* **DREYER**, Miss M. V. Asst

**Rondebosch**, Univ. of Cape Town,  
Dept of Zool.

**Cape Town**, Seapoint, Beach Rd,  
Div. of Fisheries

**DAY**, J. H. Prof., Dir.  
\* **MILLARD**, Mrs N. A. H. Lect.  
\* **SILBERBAUER**, Mrs B. I. Jun.  
Lect.

\* **BONDE**, C. von Dir. [Officer  
\* **DAVIES**, D. H. Asst Prof.,

\* **SANDISON**, Miss E. Hon. Res.  
Asst

**Johannesburg**, Univ. of the Wit-  
watersrand, Dept of Anat.

**Stellenbosch**, Univ. of Stellenbosch,  
Fac. of Sci., Zool. Inst.

\* **GILLMAN**, J. Prof.

**TOIT**, C. A. du Prof., joint Dir.  
**VILLIERS**, C. G. S. de Prof.,  
joint Dir.

Fac. of Sci., Dept of Zool.

\* **HORST**, C. J. v. d. Dir.

\* **BALINSKY**, B. I. Lect.

**KNIEP**, Mrs M. Lect.

\* **GILBERT**, Miss C. Lect.

\* **AUSTOKER**, Mrs J.

\* **STOCH**, Miss Z.

Guest-workers

\* **CROMPTON**, A. W.

\* **EEDEN**, J. A. van

\* **PLETZEN**, R. van

\* **VERMAAK**, D.

\* **WESTHUIZEN**, C. M. v. d.

\* **PENTZ**, Miss K.

\* **RYKE**, P. A. J.

\* **SMIT**, A. L.

**Potchefstroom**, Potchefstroom Univ.,  
Dept of Zool.

**EISELEN**, G. T. S. Dir., Prof.

\* **RYKE**, P. A. J. Docent

\* **EEDEN**, G. A. van Docent

**Pretoria**, Univ. of Pretoria, Fac. of  
Sci., Zool. Inst.

**N. A M E R I K A**

**CANADA**

**ALBERTA (Alta)**

**Edmonton**, Univ. of Alberta, Med.  
School, Dept of Anat.

\* **SHANER**, R. F. Prof., Dir.

**NOVA SCOTIA**

**Wolfville**, Acadia Univ., Fac. of  
Sci., Dept of Biol.

**BAYNE**, P. M. Prof., Chairman.

\* **McCALLION**, D. J. Asst Prof.

**ONTARIO (Ont.)**

**Guelph**, Ontario Agricultural Coll.,  
Dept of Entomol. and Zool.

\* **PEERS**, Miss D. J.

**Hamilton**, McMaster Univ., Fac. of  
Arts and Sci., Hamilton Coll.,  
Dept of Zool.

**WARREN**, A. E. Prof., Dir.

(no embryol. work in progress)



**Kingston**, Rhode Island State Coll.,  
Dept of Zool.

KNUTSON, H. E. Head of  
Dept, Assoc. Prof.

\* HARTUNG, E. W. Asst Prof.  
**Kingston**, Queens Univ., Med.  
School

\* KROPP, B. N. Dir.

**London**, Univ. of Western Ontario,  
Dept of Zool.

\* BATTLE, Miss H. I. Prof.  
LAING, Miss M. A. Res. Asst  
HISAOKA, K. K. Res. Asst

## QUEBEC

**Montreal**, Mc Gill Univ.,  
Dept of Zool.

BERRIL, N. J.  
(no data received)

Dept of Anat.

\* LEBLOND, C. P.

## UNITED STATES

### ALABAMA (Ala)

**Birmingham** 5, 620, South 20th Str.,  
Med. Center of the Univ. of Alaba-  
ma, Schools of Med. and Dent.,  
Dept of Anat.

FOLEY, J. O. Chairman  
SENSENIQ, E. C. Assoc. Prof.  
KLAPPER, Miss C. E. Asst  
Prof.

BOYER, C. C. Asst Prof.  
(no data received over this year)

**Birmingham** 15, Hosp. Centre,  
Med. School,  
Dept of Anat.

\* BRANDT, W. (former Prof. of  
Anat.)

### CALIFORNIA (Cal.)

**Berkeley** 4, Univ. of California, Coll.  
of Lett. and Sci.,  
Dept of Zool.

KIRBY, H. Chairman  
LONG, J. A. Prof. (Emer.)

\* EAKIN, R. M. Prof.  
\* BERG, W. E. Asst Prof.  
\* HARRIS, M. Asst Prof.

\* GREULICH, R.

**Montreal**, 2900, Boulevard du Mont  
Royal, Univ. de Montreal, Fac. de  
Méd., Dépt d'Histol. et d'Embryol.

\* BONIN, W. Dir.

\* FRAPPIER, J. Asst

**Ottawa**, Univ. of Ottawa, Fac. of  
Med.,

Dept of Anat.

AUER, J. Dir.

MENSCHIK, Z. Asst Prof.

(no data received over this year)

Dept of Histol.

\* BELANGER, L. F.

### SASKATCHEWAN

**Saskatoon**, Univ. of Saskatchewan,  
Fac. of Anat.

JACKSON, G. L. Dir.

ALTSCHUL, R. Assoc. Prof.

(no data received over this year)

\* KUTSKY, P. B.

**Los Angeles** 24, Univ. of California,  
Dept of Zool.

\* SCHECHTMAN, A. M. Assoc.  
Prof.

\* NACE, G. W. Fellow Nat. Inst.  
of Health

\* SCHJEIDE, O. A.

\* HOFFMAN, H.

**Palo Alto**, Stanford Univ.,  
Dept of Biol.

DUSHANE, G. Ph.

WHITAKER, D.

(no data received)

**Pasadena** 4, California Inst. of  
Technol., Div. of Biol.,  
Dept of Embryol.

\* TYLER, A. Prof., Head of Dept

\* YCAS, M. Grad. stud. and  
Teaching Asst

\* JAFFE, L. Grad. stud. and  
Teaching Asst

ATKINSON, E. Res. Asst

VOGT, Miss M.

(Hirnforschungs Inst., Neustadt,  
Schwarzwald, Deutschland)

**Stanford, Stanford Univ.,**  
 Dept of Biol. Sci.  
 \* TWITTY, V. C. Dir.  
 \* NIU, M. C.  
 \* ALGARD, F. T.  
 \* HEATH, H. D.  
 \* KING, R.

### N. CAROLINA (N. C.)

**Chapel Hill, Univ. of North Carolina,**  
 Dept of Zool.  
 \* COSTELLO, D.F. Kenan Prof.,  
     Chairman of Dept  
 \* LEHMAN, H. E. Asst Prof.  
 \* HENLEY, Miss C. Res. Assoc.  
**Durham, Duke Univ., Dept of Zool.**  
 GRAY, I. E. Dir., Prof.  
 HARGITT, G. T. Prof.  
 PEARSE, A. S. Prof. (Emer.)  
 \* BOOKHOUT, C. G. Assoc.  
     Prof.  
 \* HORN, E. C. Asst Prof.  
 †\*JOHNSON, M. W. Asst Prof.  
 \* RHODES, S.  
 \* BAILEY, J. R.  
 \* MANHOFF, L. J.

### COLORADO (Col.)

**Denver 7, 4200 east Ninth Ave,**  
 Univ. of Colorado, Med. Center,  
 Dept of Pediatrics  
 GORDON, H. H. Head of Dept  
 \* HERRMANN, H. Dir. Lab. of  
     Chem. Embryol.  
 \* COHEN, S.  
 \* DEMETRY, J.  
 \* LUBCHENCO, L.  
 \* MCKENZIE, J.  
 \* NEUKOM, B. J.  
 \* ROTHFELS, U.  
 \* SCHNEIDER, M. J.

### CONNECTICUT (Conn.)

**Middletown, Wesleyan Univ.,**  
 Dept of Biol.  
 GOODRICH, H. B. Dir.  
 (no data received over this year)  
 \* CASPARI, E. W. Prof.  
**New Haven, Yale Univ.,**  
 School of Med.

\* STONE, L. S. Prof.  
 Osborn Zool. Lab.  
 \* NICHOLAS, J. S. Dir.  
 \* HARRISON, R. G. Prof.  
     (Emer.)  
 \* BOELL, E. J. Prof.  
 \* STONE, L. S. Prof.  
 \* POULSON, D. F. Assoc. Prof.  
 \* METZ, C. B. Asst Prof.  
 \* SHEN, S. C. Res. Asst  
 \* TRINKAUS, J. P. Instr.  
 \* WILENS, Miss S. Res. Asst  
 \* KRUGELIS, Miss E. L. Res.  
     Asst

NOEL, Miss E.  
 \* RUDNICK, Miss D.  
 \* SIPPEL, T.  
 \* VILLAFRANCA, G. de  
 \* RAPPAPORT Jr., R.  
**New Haven 11, 333, Cedar St, Yale Univ.,**  
 Sterlinghall of Med.  
 BURR, H. S.  
 (no data received)  
**Storrs, Univ. of Connecticut, Storrs**  
 Agric. Exp. Stat., Coll. of Agric.,  
 Dept of Genet.  
 \* LANDAUER, W. Dir.  
 \* ZWILLING, E. Assoc. Prof.  
 \* CRAIG, Miss M. M.  
**Storrs, Univ. of Connecticut,**  
 Dept of Zool.  
 CLARK, H.  
 (no data received over this year)

### GEORGIA (Ga)

**Augusta, Univ. of Georgia, Med. School.**  
 Dept of Anat.  
 \* HEUSER, C. H. Prof. (Emer.)  
**Emory University,**  
 Dept of Biol.  
 \* CLEMENT, A. C.  
 \* HUNT, E. L.

### ILLINOIS (Ill.)

**Chicago 37, Univ. of Chicago,**  
 Physiol. Lab.  
 \* LILLIE, R. S.  
 Biol. Sciences Div., Dept of Zool.  
 \* WEISS, P. A. Prof., Dir.  
 GREGG, J. Res. Assoc.

- FERREIRA—BERRUTTI, P.  
Res. Fellow
- \* ANDRES, G. Res. Fellow
  - \* ROSSETTI, F. Res. Fellow
  - \* OVERTON, J. H. Res. Asst
  - CAVANAUGH, M. W. Res.  
Asst
  - \* PETZOLD, R. Res. Asst
  - \* RUSSO, E. Res. Asst
  - \* McKEEHAN, M. Instr.
  - \* MAPP, E. F. Doct. Cand.
  - \* GARBER, B. Doct. Cand.
  - \* CHIAKULAS, J. Doct. Cand.
  - \* WASHINGTON, D. Doct.  
Cand.
  - \* HOLTZER, H. Doct. Cand.
  - RADNER, V. Doct. Cand.
  - SHEPHERD, E. Doct. Cand.
  - \* WALLMANN, S. Doct. Cand.
  - \* FISCHER, I.
  - \* BLUMER, C.
- Dept of Zool.  
MOORE, C. R.  
(no data received)
- Evanson, Northwestern Univ.,  
Cresap Biol. Lab.
- \* WATTERSON, R. L.
- Urbana, Univ. of Illinois,  
Dept of Zool.
- \* ADAMSTONE, F. B. Head of  
Dept
  - \* ROSE, S. M. Assoc. Prof.
  - \* KUGLER, O. E. Assoc. Prof.
  - \* HAY, E. D.
  - \* TWEEDELL, K. S.

**INDIANA (Ind.)**

- Notre Dame, Univ. of Notre Dame,  
Dept of Biol.
- DELANNEY, L. E.  
(no data received)

**IOWA**

- Ames, Iowa State Coll., Div. of Sci.,  
Dept of Zool. and Entomol.
- HARRIS, H. M. Dir.
- \* HAMILTON, H. L. Assoc. Prof.
- Iowa City, State Univ. of Iowa,  
Zool. Labs.
- \* WITSCHI, E. Dir. of Embryol.  
Lab.

- \* BRUNER, Miss J. A. Res. Assoc.
- \* CHANG, C. Y. Res. Asst  
Dept of Zool.
- \* KOLLROS, J. J.

**KANSAS (Kan.)**

- Lawrence, Univ. of Kansas,  
Dept of Zool.
- HALL, R. E.
- \* JOHNSON, I. S.  
Med. School, Dept of Anat.
  - \* ROOFE, P. G. Prof., Dir.
  - \* TRACY, H. C. Prof.
  - \* YOUNG, W. C. Prof.
  - \* LATIMER, H. B. Prof.
  - \* LESHER, S. W. Asst Prof.
  - \* BATTY, Th. Asst Instr.
  - \* WINBLAD, J. Grad. stud.
  - \* LEE, G. M. Instr.

**KENTUCKY (Ky)**

- Louisville 2, 101, West Chestnut  
Str., Univ. of Louisville, School of  
Med.,  
Dept of Anat.
- HALL, E. K. Dir.  
(no data received over this year)

**MAINE (Me)**

- Bar Harbor, Box 558, Roscoe B.  
Jackson Memorial Lab.
- \* LITTLE, C. C. Dir.
  - RUSSEL, Miss E. S. Res. Assoc.
  - \* HUMMEL, Miss K. P. Res.  
Assoc.
- SAWIN, P. B. Res. Assoc.
- RUNNER, M. N. Res. Assoc.
- AVIS, F.
- DIETZ, D.
- FEKETE, E.  
(data only received from C. C.  
LITTLE and Miss K. P. HUM-  
MEL)

**MARYLAND (Md)**

- Baltimore 5, Wolfe and Madison  
Strs, Carnegie Inst. of Washington,  
Dept of Embryol.
- \* CORNER, G. W. Dir.
  - \* BURNS, R. K. Member
  - \* FLEXNER, L. B. Member

- \* REYNOLDS, S. R. M. Member
- \* RAMSEY, Mrs E. M. Res. Assoc.
- \* HERTIG, A. T. Res. Assoc. (extramural)
- BARTELMEZ, G. W. Consultant
- \* GILLMAN, J. Res. Assoc. (extramural)
- \* CSAPO, A. Fellow
- Baltimore 18, The John Hopkins Univ., Fac. of Phil., Dept of Biol.**
- \* WILLIER, B. H. Prof., Dir.
- \* BURNS, R. K. Hon. Prof.
- \* RAWLES, Miss M. E. Res. Assoc.
- \* KRAUSS, M. Instr.
- CASE, J. F. Bruce Fellow
- KONIGSBERG, I. Jun. Instr.
- \* BAKER, Miss A. Guest-worker
- Bethesda, Nat. Cancer Inst., Developmental Physiol. Unit**
- \* GROBSTEIN, C.
- Maryland, Army Chemical Center, Med. Div.**
- \* BODENSTEIN, D. H. F. A.

**MASSACHUSETTS (Mass)**

- Boston 15, 25, Shattuck Str., Harvard Univ., Med. School, Dept of Anat.**
- \* WISLOCKI, G. B. Prof., Dir.
- \* LEWIS, F. T. Prof. (Emer.)
- \* SNYDER, F. F. Assoc. Prof.
- \* SINGER, M. Asst Prof.
- Dept of Pathol.
- \* HERTIG, A. T.
- Boston 15, Longwood Ave 22, Boston Lying-in Hosp.**
- \* HERTIG, A. T.
- Brookline, 245, Pond Ave, Free Hosp. for Women**
- \* HERTIG, A. T.
- \* ROCK, J.
- Cambridge 38, Divinity Ave, Harvard Univ., Biol. Lab.**
- \* HOADLEY, L. Prof. (Embryol.)
- \* ROGERS, K. T.
- \* ROSENBAUM, R. M.

- \* DAWSON, A. B. Prof. (Hist. and Cyt.)
- ROMER, A. S. Prof. (Anat. and Paleontol.)
- \* MOULTON, J. M.
- HISAW, F. L. Prof. (Endocrinol.)
- BAILEY, I. W. Prof. (Plant. Anat.)
- \* WETMORE, R. H.
- Cambridge 39, Massachusetts Inst. of Technol., Dept of Biol.**
- \* EBERT, J. D.
- Shrewsbury, 222 Maple Ave, Tufts Coll., Med. School and Worcester Foundation for Exper. Biol.**
- PINCUS, G.
- \* CHANG, M. C.
- Woodshole, Marine Biol. Stat.**
- CHAMBERS, R. Dir.
- SHAPIRO, H.
- \* MONROY, A. Guest-worker
- \* RUNNSTROM, J. A. M. Guest-worker
- \* LILLIE, R. S.

**MICHIGAN (Mich.)**

- Ann Arbor, 2500 East Med. Build., Univ. of Mich., Med. School, Dept of Anat.**
- \* PATTEN, B. M. Prof., Chairm. of Dept
- \* BARRY, A. Assoc. Prof.
- \* KRAMER, T. C. Asst Prof.
- Dept of Zool.
- BROWN, D. E. S. Chairman
- \* STOCKARD, A. H. Assoc. Prof.
- \* MARKERT, C. L. Asst Prof.
- \* KEMP, N. E. Instructor
- Minneapolis 14, Univ. of Minnesota, Coll. of Sci., Lit. and Arts, Dept of Zool.**
- MINNICH, D. E. Chairman
- \* SPRATT, N. T. Assoc. Prof.
- School of Med., Inst. of Anat.
- BOYDEN, E. A. Head of Dept
- WELLS, L. J. Prof.
- HARTMANN, J. F. Asst Prof. (no data received over this year)

**MISSOURI (Mo.)**

**Columbia**, Univ. of Missouri,  
Dept of Zool.

\* SHAVER, J. R.

**St Louis** 5, Lindell and Skinker  
Aves, Washington Univ., Grad.  
School of Arts and Sci.,  
Dept of Zool.

\* HAMBURGER, V. Head of  
Dept

\* HALL, T. S. Assoc. Prof.

\* MOOG, F. Asst Prof.

\* LEVI-MONTALCINI, R. Res.  
Assoc.

\* WENGER, Mrs E. L. Res. Asst

\* WENGER, B. S. Res. Fellow  
(Dept of Pharmacol., School of  
Med.)

\* LEVI-MONTALCINI, Miss R.

**NEW JERSEY (N. J.)**

**Princeton**, Princeton Univ.,  
Dept of Biol.

\* BUTLER, E. G. Prof.

\* FANKHAUSER, G. Prof.

\* BONNER, J. T. Asst Prof.

\* HARVEY, Mrs E. B.

COOPER, Mrs R. S. Indep. Invest.

Indep. Invest.

**Raritan**, Ortho Res. Foundation  
HARTMAN, C. G. Dir.

(no embryol. work in progress)

**NEW YORK (N. Y.)**

**Brooklyn** 3, 451, Clarkson Ave,  
State Univ. of New York, Med.  
Center at New York,  
Dept of Pathol.

OLIVER, J. R. Prof., Dir.

\* GRUENWALD, P. Asst Prof.

**Brooklyn** 10, Bedford Ave and Ave  
H., Brooklyn Coll.,  
Dept of Biol.

CHENEY, R. H.  
(no data received)

**Buffalo**, 24, High Str., School of  
Med., Dept of Anat.

\* HUMPHREY, R. R.

**Ithaca**, Cornell Univ.,  
Dept of Zool.

ADELMANN, H. B.  
(no data received)

**New York**, New York Univ.,  
Dept of Zool.

\* DALTON, H. C. Prof.

**New York** 16, 477, First Ave, New  
York Univ., Coll. of Dentistry,  
Dept of Histol.

GOLDSMITH, E. D.  
(no data received)

**New York**, 66th Str. York Ave,  
Rockefeller Institute for Med. Res.

MIRSKY, A. Dir.

\* MONROY, A. Guest-worker

\* MONROY—ODDO, Mrs A.  
Guest-worker

**New York** 33, 186th Str. and Am-  
sterdam Ave, Yeshiva Univ.,  
Dept of Biol.

\* ATLAS, M. Dir.

**New York**, Flushing, L.I., Queens  
Coll.,

Dept of Biol.

\* COLWIN, A. L. Dir.

\* COLWIN, Mrs L. H.

**New York City** 27, Broadway and  
116 Str., Columbia Univ., Fac. of  
pure Sci.,

Dept of Zool.

\* MOORE, J. A. Prof., Head of  
Dept

BARTH, L. G. Prof.

BARTH, L. J. Res. Assoc.

\* GREGG, J. R. Asst Prof.

\* MOORE, Mrs B. C. Res. Assoc.

**New York City**, 632, West 168th  
Str., Columbia Univ., Coll. of Phys.  
and Surg.

COPENHAVER, W. M.

RUGH, R.

(no data received)

Dept of Anat.

DETWILER, S. R.

(no data received)

Dept of Zool.

PEASE, D. C.

(no data received)

**Rochester 3**, Univ. of Rochester,  
Coll. of Arts and Sci.,  
Dept of Biol.

- CHARLES, D. R. Dir.  
\* HOLTFRETER, J. K. F.  
\* STEVENS, L. C.  
\* TOWNES, Ph. L.  
\* MUCHMORE, W. B.  
\* LUMB, Miss E. S.

Schenectady, Union Coll.,  
Dept of Biol.

- CLARK, L. B.  
\* SCOTT, A. C.

Syracuse 10, Syracuse Univ., Med.  
Dept of Anat. Coll.

- \* ARMSTRONG, Ph. Prof.,  
Chairman  
\* YNTEMA, Ch. Prof.  
\* SPOFFORD, W. R. Assoc.  
Prof.  
\* HAMMOND, W. Asst Prof.

## OHIO

Columbus 10, Ohio State Univ.,  
Dept of Anat.

- KNOUFF, R. A. Chairman  
BAKER, R. C. Prof.  
EDWARDS, L. F. Prof.  
GARRETT, F. D. Asst Prof.  
LEACH, W. J. Asst Prof.  
HAYES, E. R. Asst Prof.  
SHELLHAMER, R. H. Grad.  
Asst  
(no data received over this year)

## OREGON (Ore.)

Corvallis, Oregon State Coll.,  
Dept of Zool.

- \* HILLEMANN, H. H.

Eugene, Univ. of Oregon, Lib. Arts  
and Grad. Coll.,

Dept of Biol.

- RISLEY, P. L. Head of Dept  
HUESTIS, R. R. Prof.  
CLANCY, C. W. Assoc. Prof.  
SODERWALL, A. L. Asst Prof.  
(no data received over this year)

Portland 3, Univ. of Portland, Coll.  
of Sci.,

Physiol. Lab.

- \* MOORE, A. R. Prof., Dir.

- \* FLEMING, W. R. Res. Asst  
**Portland**, Lewis and Clark Coll.  
GILCHRIST, F. G.  
(no data received)

## PENNSYLVANIA (Pa)

**Bryn Mawr**, Bryn Mawr Coll.,  
Dept of Biol.

- GARDINER, Miss M. Dir.  
\* OPPENHEIMER, Miss J. M.

**Philadelphia 4**, Univ. of Pennsyl-  
vania, School of Med.,  
Dept of Anat.

- \* WINDLE, W. F. Prof.,  
Chairman  
\* CLARK, E. R. Prof. (Emer.)  
\* WILLIAMS, R. G. Prof.  
\* HOGUE, Miss M. J. Assoc.  
Prof.  
\* PIATT, J. Assoc. Prof.  
\* CHAMBERS, W. W. Asst  
Prof.

- \* LIU, J. C. Assoc.  
\* LAVELLE, A. Asst Instr.  
\* WILLIAMS, S. C. Asst Prof.  
\* RHINES, Miss R. Asst Prof.  
\* WIERDA, J. L. Asst Prof.

Dept of Zool.

- HEILBRUNN, L. V. Dir.  
FLICKINGER, R. A.  
NELSEN, O. E.  
PARMENTER, C. L.  
(no data received over this year)

**Philadelphia 4**, Wistar Inst. of Anat.  
and Biol.

- LEWIS, H. W.

**Philadelphia 11**, Fox Chase, Burholm  
Ave, Lankenau Hosp. Res. Inst. and  
Inst. for Cancer Res.,  
Dept of Embryol.

- REIMANN, S. P. Dir. of Inst.  
\* BRIGGS, R. W. Head of Dept  
\* GREEN, Miss E. U. Res.  
Assoc.

\* KING, T. Res. Fellow  
**Philadelphia 29**, Woman's Med.  
Coll. of Pennsylvania,  
Dept of Anat.

- KUHLENBECK, H. Head of  
Dept

WEISSENBERG, J. R. Visit.  
Prof. of Anat.  
(no embryol. work in progress)

**Pittsburgh 13**, Univ. of Pittsburgh,  
Dept of Anat.

\* HOOKER, D. Head of Dept,  
Prof.

\* DONALDSON, J. C. Prof.

\* HUMPHREY, Miss T. Prof.

\* SNOOK, T. Asst Prof.

PRIMAN, J. Assoc. Prof.

REYER, R. W. Asst Prof.

CHAMBERS, W. F. Instr.

MERKLIN, R. J. Instr.

Dept of Biol. Sci.

GRAY, P. Head of Dept, Prof.

BUCHSBAUM, R. Prof.

\* GENNARO Jr, J. F. Instructor

\* McCAFFERTY, R. E. Instructor

ORTON, G. L. Lecturer

\* GOODMAN, D. B. Grad. Stud.

Asst

\* RIDLEY, Miss J. E. Grad. Stud.

Asst

WESTRICK, Miss M. Grad.

Stud. Asst

\* WIRTH, Miss P. Grad. Stud.

Asst

## RHODE ISLAND (R. I.)

**Providence 12**, Brown Univ.,  
Arnold Biol. Lab.

\* WILSON, J. W. Prof., Head of  
Dept

\* CHASE, H. B. Assoc. Prof.

\* EDDS, Jr, M. V. Asst Prof.

\* WEISZ, P. B. Asst Prof.

\* ANDERSON, Miss I. L.

Guest-worker

## TENNESSEE (Tenn.)

**Memphis 3**, Univ. of Tennessee,  
Fac. of Biol. Sci.,  
Med. Div.

HARRISON, F. Chief of Div.  
of Anat.

\* ALDEN, R. H. Head of Dept of  
Micr. Anat.

\* FITZGERALD, L. R. Instr.

\* SMITH, Miss F. W. Asst Prof.

## TEXAS (Tex.)

**Austin 12**, Univ. of Texas,  
Dept of Zool.

OLIVER, C. P. Chairman

\* CAIRNS, J. M. Asst Prof.

**Galveston**, Univ. of Texas, Med.  
Branch.

Dept of Anat.

DUNCAN, D. Dir.

\* SINCLAIR, J. G. Prof.

\* BLOUNT, R. Prof.

**Houston 5**, 1200 M. D. Anderson

Bldv, Texas Med. Center, Baylor

Univ., Coll. of Med.,

Dept of Anat.

\* ROBERTSON, G. G. Assoc.

Prof.

\* PERRY, J. H. Assoc. Prof.

\* HETTIG, R. A. Assoc. Prof.

Dept of Pathol.

\* NEWTON, B. L. Asst Prof.

\* GALINSKY, I.

## VERMONT (Vt)

**Burlington**, Univ. of Vermont, Coll.  
of Med., Dept of Anat., Lab. of  
Histol. and Embryol.

NEWHALL, C. Chairman,

Assoc. Prof.

JORDAN, H. Prof.

DUNIHUE, F. Assoc. Prof.

STULTZ, W. Assoc. Prof.

NOVIKOFF, A. B.

(no data received over this year)

## VIRGINIA (Va)

**Charlottesville**, The Univ. of Vir-  
ginia,

Miller School of Biol.

\* DENT, J. N. Assoc. Prof.

**Morgantown**, West Virginia Univ.,  
School of Med.

DODDS, G. S. Dir.

CHANDLER, S. B. Prof.

WILLIAMS, T. W. Prof.

(no data received over this year)

## WASHINGTON (Wash.)

**Seattle 5**, Univ. of Washington,  
Dept of Zool.

MARTIN, A. W. Dir.

FERNALD, R. L.  
 \* WHITELEY, A. H.  
 Spokane 11, Gonzaga Univ.,  
 Dept of Biol.  
 FOUBERT Jr, E. L. Dir.  
 \* GUBBINS, J. F. (S.J.) Asst  
 Prof.  
 Washington 7, Georgetown Univ.,  
 School of Med.  
 \* KARCZMAR, A. G.

**WISCONSIN (Wis.)**

Madison, Univ. of Wisconsin,  
 Dept of Anat.  
 MORTENSEN, O. A.  
 Chairman  
 \* BAST, T. H. Prof.

\* MOSSMANN, H. W. Assoc.  
 Prof.  
 \* ORSINI, Mrs M. W. U.S. Pu-  
 blic Health Fellow, Nat. Cancer  
 Inst.  
 Milwaukee 3, 1131, West Wiscon-  
 sin Ave, Marquette Univ.,  
 Dept of Biol.  
 \* REIS, R. H. Head of Dept,  
 Assoc. Prof.  
 STEIL, W. N. Prof.  
 McDONOUGH, E. S. Assoc.  
 Prof.  
 PERRY, J. C. Assoc. Prof.  
 BROWN, V. E. Asst Prof.  
 \* O'BRIEN, J. P. Asst Prof.  
 \* SAUNDERS, J. W. Asst Prof.

**S. A M E R I C A****ARGENTINA**

Tucumán, Miguel Lillo 205, Univ.  
 Nac. de Tucumán, Fac. de Ci. Biol.,  
 Inst. de Zool.  
 \* CEI, J. M. Dir.  
 \* PISANO, A. Prof. Embr.  
 BARBIERI, F. Ayudante Inv.

**CHILE**

Santiago, Av. Irarrázaval 849, Dept  
 de Med. Exper. del Servicio Nacio-  
 nal de Salubridad  
 \* LIPSCHUTZ, A. Dir.  
 \* IGLESIAS, R. Exp. Res.

\* BRUZZONE, S. Exp. Res.  
 FUENZALIDA, F. Biochemist  
 \* MARDONES, Miss E.  
 \* BARAKONA, Miss M.

**URUGUAY**

Montevideo, Fac. de Med., Dept de  
 Histol. y Embriol.  
 \* BUNO, W. Dir.  
 \* FERREIRA, W. A. Asst  
 \* FRANCHI, C. M. Asst  
 \* ALVAREZ GUTTIÉRREZ,  
 Miss J. Asst  
 \* GONZALEZ MARINO, P. Asst

**A S I A****CHINA**

Hangchow, Nat. Univ. of Chekiang,  
 Dept of Biol.  
 PAI, S. Prof., Dir.  
 \* KIANG, H. M. Prof.  
 \* YAO, T. Prof.  
 \* CHU, J. Lect.  
 \* CHOW, P. S. Lect.  
 \* TSAI Miss N. Asst  
 Peiping, Ching Shan Tung Chieh,  
 Nat. Univ. of Peking, Coll. of Sci.,  
 Dept of Zool.  
 \* CHUANG, H. H. Dir.  
 LI, J. C. Prof.

\* TSENG, Miss M. P. Asst  
 \* WANG, Y. T. Asst  
 \* LIAO, Y. K. Asst  
 \* LI, Miss S. C. Asst

**INDIA**

Behar, Patna, Prince of Wales Med.  
 Coll.,  
 Dept of Anat.  
 \* SINHA, T. P. Prof.  
 Colombo 8, Ceylon, Kynsey Rd,  
 Univ. of Ceylon, Fac. of Med., Dept  
 of Anat.  
 \* CHANMUGAM, P. K. Dir.



## INDONESIA

**Bogor**, Taman Kentjana 1, Balai Perguruan Tinggi R.I.S., Fak. Kedokteran Hawan.

- \* SLIJPER, E. J. Prof. Anat.,  
Histol. and Embryol.

## ISRAËL

**Jerusalem**, The Hebrew Univ.,  
Dept of Zool.

- \* FELDMAN, M.
- \* EYAL-GILADI, Mrs H.
- \* SHULOW, A.

## JAPAN

**Kyoto**, Kyoto Univ., Dept of Sci.,  
Zool. Inst., Lab. of Embryol. and  
Exp. Morphol.

- \* ICHIKAWA, M. Dir.
- TAKAYA, H. Asst Prof.
- \* IKUSHIMA, N. Res. Stud.
- \* MASUDA, H. Res. Stud.
- \* OKADA, D. Res. Stud.
- ASAYAMA, S. Guest-worker
- AMANO, H. Guest-worker
- KAJI, S. Guest-worker

**Mie-Ken**, Shima-gun, Sugashima-  
mura, Nagoya Univ., the Sugashi-  
ma Marine Biol. Stat.

- \* SUGIYAMA, M. Dir.
- \* ISHIKAWA, M. Asst

**Nagoya**, Tashiro-Cho, Chigusa-Ku,  
Nagoya Univ., Biol. Inst.

- \* SATO, T. Prof., Dir.
- \* YAMAMOTO, T. Prof.
- \* YAMADA, T. Asst Prof.
- \* NAKANE, T. Lect.
- \* NAKANO, E. Lect.
- \* HASEGAWA, M. Asst
- \* TAKADA, K. Asst
- \* NAGATSU, R. Asst
- \* OSAWA, S.
- \* KUNO, M.
- \* HORI, R.

**Sendai**, Tohoku (Imperial) Univ.,  
Inst. of Biol., Lab. of Embryol.

- \* MOTOMURA, I. Dir., Prof.

**Tokyo**, Meguro-ku, Tokyo Metro-  
politan Univ., Fac. of Sci., Dept of  
Biol., Embryol. Section

- \* DAN, K. Head of Sect.
- \* OKAZAKI, Miss K. Res. Asst
- \* ENDO, Y. Res. Assoc.
- \* DAN, Mrs J. C. Res. Assoc.

**Yokohama**, Kohoku, Hiyoshi, Keio  
Univ. Japan, Biol. Inst.

- \* MORI, Y. Prof. Head of the  
Biol. Inst.

- \* MORI, H. Asst Prof.
- \* HAMA, T. Lect.
- \* GOTO, T. Lect.
- \* KATAKURA, Y. Lect.

## A U S T R A L I A

**Brisbane**, George Str., Univ. of  
Queensland,  
Dept of Zool.

- STEPHENSON, W. Prof.
  - \* BLEAKLY, M. C. Lect.
  - \* MATHER, W. B. Lect.
- Glebe**, N.S.W., Parramatta Rd,  
Commonwealth Sci. and Industr.  
Res. Org., F.D. McMaster Anim.  
Health Lab.

- GILL, D. A. Officer-in-Charge
- \* AUSTIN, C. R. Res. Officer
- \* BRADEN, A. W. H. Res.  
Officer
- \* HARDY, Miss M. H. Res.  
Officer<sup>1</sup>
- \* DAVIDSON, Miss P. Res.  
Officer<sup>1</sup>

**New Zealand**, Auckland Univ. Coll.  
STEPHENSON, N. G.

(no data received over this year)

**Sydney**, N.S.W.

Commonwealth Sci. and Industr.  
Res. Org., Wool Biol. Lab.

- \* CARTER, H. B. Dir.
- \* HARDY, Miss M. H. Res.  
Officer
- \* DAVIDSON, Miss P. Res.  
Officer

**Sydney**, N.S.W., Univ. of Sydney,  
Dept of Zool.

- \* MURRAY, P. D. F. Dir.

<sup>1</sup> (Guest-workers from C.S.I.R.O.,  
Wool Biol. Lab., 17 Randle St.  
Sydney, N.S.W.)

## EUROPE

## AUSTRIA

Innsbrück, Tyrol, Histol.-Embryol.  
Inst. der Univ.

- \* SAUSER, G. Vorstand
- OLBRICH, E. Asst

Wien IX, Währingerstr. 13, Anat.  
Inst. der Univ. Wien.

- \* KRAUSE, W. Priv. docent

## BELGIUM

Bruxelles, 50, Av. F. D. Roosevelt,  
Univ. libre de Bruxelles, Fac. des  
Sci., Inst. de Zool. Torley-Rousseau,  
Lab. de Zool.

- \* BRIEN, P. Dir.
- \* HERLANT-MEEWIS, Mme H.  
Chef de travaux
- \* MARLIER, G. Asst

Bruxelles, 97, Rue aux Laines, Fac.  
de Méd. de l'Univ.,  
Lab. d'Anat. et d'Embryol.

- \* DALCQ, A. M. Head of Dept
- \* PASTEELS, J. Prof.
- \* MULNARD, J. Asst
- \* WITTEK, Mlle M.

Lab. d'Histol.

- GÉRARD, P. Head of Dept
- \* CORDIER, J. Prof.
- \* LISON, L.

Bruxelles-Auderghem, 1850, Chaus-  
sée de Wavre, (Univ. libre de  
Bruxelles), Lab. de Morphol. anim.

- \* BRACHET, J. L. A. Dir.
- \* STEINERT, M. Asst
- \* THOMAS, R. post grad. stud.  
Foreign guest-workers
- \* THOMASON, D. (Oxford)
- \* NACE, G. W. (Los Angeles)
- \* LALLIER, R. (Paris)

Gent, Bylokekaai 1, Univ. of Gent,  
Fac. of Med., Lab. of Anat.

- \* FAUTREZ, J. C. Dir.
- \* FAUTREZ-FIRLEFYN,  
Mrs N. J.

- \* ANNEZ, Ch.
- \* VAKAET, L. C.

Liège, Quai Van Beneden 22, Inst.  
Zool. Ed. Van Beneden, Dept de  
Morph. des Chordés

- \* DAMAS, H. F. C. chargé de cours

Louvain, 38, Rue des Récollets,  
Univ. de Louvain, Inst. d'Anat.

- \* CAMPENHOUT, E. van Dir.
- \* MASY, S.
- \* MEYER, R. de

Louvain, 71, Rue de Namur, Univ.  
de Louvain, Inst. de Zool., Lab.  
d'Embryol.

- \* VANDEBROEK, G. Dir.
- \* JANSSENS, J.
- \* CLAES, M. T.
- \* BONÉ, E.

## CZECHO-SLOWAKIA

(No data received over this year)

## DENMARK

Copenhagen Ø, Juliane Mariesvej  
32, Univ. of Copenhagen, Nat. Sci.  
Fac., Lab. of Zoophysiol.

- BRANDT REHBERG, P. Head
- \* ZEUTHEN, E. Lect.

Copenhagen Ø, Universitetsparken  
3, Inst. for Alm. Zool.

- \* BRØNDSTED, H. V. Dir.
- \* HOLST CHRISTENSEN, P.

Amanuensis

OVERGAARD, C. Asst  
Copenhagen, Valby, 8 Gl. Carls-  
bergvej, Carlsberg Lab., Cytochem.  
Dept

- \* HOLTER, H. Head of Dept
- \* LØVTRUP, S. Asst

## ENGLAND

Ashford, Kent, Univ. of London,  
Wye Coll.

- FROUD, M. D.
- (no data received over this year)

Bangor, Caernavonshire, Univ. Coll.  
of N. Wales, Dept of Zool.

- \* BRAMBELL, F. W. R. Dir.,  
Prof.

- \* HEMMINGS, W. A. Res.
- \* HENDERSON, Miss M. Lect.
- \* BURDON-JONES, C. Lect.

Birmingham 15, Edgbaston, Bir-  
mingham Univ., The Med. School,  
Dept of Anat.

- \* ZUCKERMAN, S. Dir.

- \* BRANDT, W. Lect.
- \* GREEN, S. H. Lect.
- \* MANDL, Miss A. M. Asst
- \* EAYRS, J. T.
- Bristol**, Univ. of Bristol,  
Dept of Zool.
- \* SINGER, Miss J.
- Cambridge**, Downing St.,  
Dept of Zool.
- \* GOODHART, C. B.
- Cambridge**, Gonville and Cains  
NEEDHAM, J. Coll.  
(no data received)
- Cambridge**, Strangeways Res. Lab.  
FELL, Miss H.  
(no data received)
- London E. 1**, Mile End Road, Queen  
Mary Coll.
- SMITH, J. E. Prof., Dir.
- \* NEWELL, G. E. Reader
- FORREST, J. E. Sen. Lect.
- CHAPMAN, G. Lect.
- DIXEY, L. R. Asst Lect.
- CARTHY, J. Asst Lect.
- \* SANTLER, J. E. Demonstr.
- \* DALES, R. P.
- \* HEAYSMAN, Miss J. E. M.
- London E. 1**, Turner Str., Univ. of  
London, London Hosp. Med. Coll.,  
Anat. Dept
- \* BOYD, J. D. Dir.
- \* BELLAIRS, A. d'A. Lect.
- \* PEACOCK, A. Lect.
- London S.E. 1**, Guy's Hosp., Med.  
School, Biol. Dept
- \* BAXTER, E. W.
- London W. 1**, Middlesex Hosp.,  
Med. School
- WOODGER, J. H. Dir.  
(no embryol. work in progress)
- London W. 2**, Norfolk Place,  
Paddington, St Mary's Hosp., Med.  
School
- \* FISK, A.
- London S.W. 1**, Horsferry Rd,  
Westminster Med. School
- \* O'CONNOR, R. J.
- London W.C. 1**, Gower Str., Univ.  
Coll. London,  
Dept of Embryol.
- \* HILL, J. P. Prof. (Emer.)

- \* ABERCROMBIE, M. Lect.
- \* BELLAIRS (-MORGAN),  
Mrs M. R. Asst Lect.
- \* ELWOOD, M. A.
- \* CARR, Miss E. B.
- \* SINGER, Miss J. (moving to  
Dept of Genetics **Bristol**)
- \* GRUENEBERG, H.  
Dept of Zool. and comp. Anat.
- WATSON, D. M. S. Jodrell  
Prof., Dir.
- \* NEWTH, D. R. Lect.
- \* FRASER, Miss E. A. Hon. Res.  
Assoc.
- \* TRUSLOVE, G. M.
- London W.C. 2**, 62—65, Chandos  
Place, Univ. of London, Charing  
Cross Hospital, Med. School,  
Dept of Anat.
- \* HAMILTON, W. J. Dir.
- \* HARRISON, R. J. Sr Lect.
- \* BOYD, J. D.
- London W.C. 2**, Strand, King's  
Coll.
- \* MANTON, S. M.
- \* TRIBE, Miss M.  
Med. Res. Council, Biophysics Res.  
Unit
- RANDALL, J. J. Hon. Dir.
- \* HANSON, Miss E. J. Member  
M.R.C. staff
- \* MARTIN, Miss A. V. W.  
Member M.R.C. staff
- \* WALKER, P. M. B. Member  
M.R.C. staff
- \* DAVIES, H. G. Member  
M.R.C. staff
- \* BOVEY, R. Member Agricul-  
tural Res. Council
- \* BAYLEY, S. T.  
Dept of Zool.
- \* ALLANSON(-BAXTER), M.  
**London**, Regents Park, Bedford  
Coll.,  
Dept of Zool.
- INCE, Miss F. E.  
(no data received)
- Oxford**, The Univ. Museum, Dept  
of Zool. and comp. Anat.
- NEEDHAM, A. E.  
(no data received)

Reading, Berkshire, Univ.,  
Dept of Zool.

EALLES, Miss N. B.

(no data received over this year)

Sheffield, Univ. of Sheffield,  
Fac. of Med., Dept of Anat.

\* DAVIES, F. Prof.

\* KING, T. S. Lect.

\* JOHNS, B. A. E. Asst Lect.

Dept of Zool.

EASTHAM, L. E. S. Prof.

\* FRANCIS, E. T. B. Sr Lect.

\* EASSA, Y. E. Guest-worker

St Andrews, The Univ.,

Dept of Zool.

\* CALLAN, H. G.

## FINLAND

Helsinki, Univ. of Helsinki, Fac. of  
Med.,

Dept of Anat.

PESONEN, N. Head of Dept

\* HJELMMAN, G. Prof.

\* MUSTAKALLIO, M. Prosector

Helsinki, P. Rautatiekatu 13, Univ.  
of Helsinki, Fac. of Mathem. and  
Nat. Sci., Zool. Lab.,

Dept of Physiol.

SUOMALAINEN, P. Dir. of  
Lab., Head of Dept

\* TOIVONEN, S. Docent, Asst

\* SUOMALAINEN, H. Asst

\* KUUSI, Miss T.

Turku, Univ. of Turku, Zool. Lab.

\* PESONEN, S. Docent, Asst

\* MARJANEN, P.

## FRANCE

Clermont-Ferrant, 1, Ave Vercingé-  
torix, Lab. de Zool.

HOVASSE, R. Dir.

\* LUTZ, H. Maître de Conf.

\* REYROLLE, Mlle J. Chercheur  
libre

Marseille, Place Victor Hugo, Lab.  
de Zool. gén. de la Fac. des Sci. et  
Stat. de marine d'Endoume (Mar-  
seille)

ABELOOS, M. Dir.

(no data received over this year)

Nancy, (Meurthe & Moselle), 31,  
Rue Lionnois, Lab. d'Histol. de  
l'Inst. Anat. de la Fac. de Méd. de  
Nancy.

\* BEAU, A. A. Prof. Chaire  
d'Anat. norm. et d'Organog.

COLLIN, R. Prof. Chaire  
d'Histol. et d'Embryol.

\* DOLLANDER, A. Dél. Agr.  
Chargé d'enseignement

d'Embryol.

DEBRY, G. Préparateur des  
cours au Lab. d'Histol. et

d'Embryol.

LAURENT, M. Asst libre

\* GRIGNON, G. Asst de travaux  
prat. d'Histol.

Paris Ve, Place Marcelin Berthelot,  
Coll. de France, Lab. de Morphol.  
expérim. et Endocrinol.

\* COURRIER, R.

Lab. d'Embryogénie comp.

FAURÉ FRÉMIET, E.

(no data received)

\* DEVILLERS, Ch. Sous-Dir.

\* SKREB, N.

Paris Ve, 61, Rue de Buffon, Lab.  
de Zool. du Muséum Nat. de Paris

FAGE, L. Dir.

\* VACHON, M. Asst

Paris Ve, 13, Rue Pierre Curie, Inst.  
de Biol. Physicochimique

\* LALLIER, R. A.

Paris Ve, 7, Rue Cuvier, Univ. de  
Paris, Fac. des Sci., Lab. de Biol.  
anim. du P.C.B.

\* JOST, A. D. Maître de Confér.

\* BOZIC, B. Travailleur libre

Paris Ve, 12, Rue Cuvier, Univ. de  
Paris, Fac. des Sci., Lab. de Biol.  
anim. (P.C.B. section II)

\* GALLIEN, L. Dir. du serv.

\* DELSOL, M. Asst

\* GODET, R.

Paris Ve, 26, Rue d'Ulm, Inst. du  
Radium, Lab. d'Embryol. du Lab.  
Pasteur

\* RAYNAUD, A. Chef du Lab.

\* FRILLEY, M. Chercheur et  
Physicien

**Paris VIe, 15, Rue Ecole de Médecine.** Fac. de Méd., Lab. d'Embryol.

- \* GIROUD, A. Dir.
- \* DESCLAUX, P. Prof. agr.
- LEFEBRE, Mme J. Lic. ès Sci.
- \* LELIÈVRE, A. Anc. Chef de Trav.

- \* TEYSSEYRE, J.
- \* MORLON, C.
- \* BLOOMINGDALE, Mme B.

**Paris VIe, 105, Boulevard Raspail.** Fac. des Sci. de Paris, Lab. d'évolution des êtres organisés

- GRASSÉ, P. P. Dir.
- \* MIALHE, P. Asst
- \* GONTCHAROFF, Mlle M.

**Paris XIIIe, III Rue L. M. Nordmann.** Univ. Hôpit. Broca, Ecole des Hautes Etudes, Lab. d'Hormonol. et Cytol. expér.

- \* MORICARD, R. Dir.
- \* GOTHIE, Mlle S.
- \* CHIH, C. S.
- \* GUILLON, G.

**Poitiers, Vienne, Fac. des Sci., Lab. de Zool.**

- \* LARAMBERGUE, M. de
- Strasbourg (Bas-Rhin), 1, Place de l'Hôpital.** Fac. de Méd., Inst. d'Embryol. et de Morphol. expér.
- \* BENOIT, J. Dir.
  - \* CLAVERT, J. Prof. agrégé
  - \* VINTEMBERGER, P. Chef de Trav.

- \* ASSENMACHER, I. Asst
  - \* STOLL, R. Asst
- Strasbourg, 12, Rue de l'Univ., Inst. de Zool., Fac. des Sci., Lab. de Biol. Génér.**

- \* BOUNOURE, L. Dir.
  - \* SIGOT, A. Chef de travaux
- Strasbourg, 12, Rue de l'Université.** Inst. de Zool. et de Biol. gén., Lab. de Zool. de la Fac. des Sci., et Lab. d'Embryol. et Tératol. expér. du C.N.R.S.

- \* WOLFF, Et. C. Prof., Dir.
- \* DUBOIS, Mlle Fr. Chef de Trav.
- \* HUBER, W. Asst
- \* STEPHAN, Fr. Asst

- \* HAY, Mlle D. Asste
- \* SALZGEBER, Mlle B. Atach. de Rech.
- \* OSTERTAG, Mlle Y. Atach. de Rech.
- \* PFLEGER, Mlle D. Atach. de Rech.
- \* SCHUË, Mlle M. Atach. de Rech.
- \* HAFFEN, Mlle K. Atach. de Rech.
- \* WOLFF, Mme Em. Cherch. libre

- \* LENDER, Th. Cherch. libre
- \* STRUDEL, G. Cherch. libre
- \* REINBOLD, A. Cherch. libre
- \* HAMPÉ, A. Cherch. libre

**Talence, (Gironde), 40, Rue Lamar-tine.** Fac. des Sci. de l'Univ. de Bor-deaux, Lab. de Zool. et Physiol. anim.

- AVEL, M. Prof., Dir.
- \* CAMBAR, R. Maître de Con-fér. de Biol. Génér.
- \* HAGET, A. Chef de travaux de Biol. anim.

**Toulouse, Ecole Nat. Vétér.**

- \* BENOIT, J. A. A.
- Ville d'Avray (Seine et Oise), 29, Rue Pradier.**
- \* ROSTAND, J.

## GERMANY

**Frankfurt Main Süd, Ludwig Rehn-str. 14, Dr. Senckenbergisches Anat. Inst. d. Univ. Frankfurt Main, Med. Fak.**

- \* STARCK, D. Prof., Dir.
  - \* FRICK, H. Asst
  - SCHNEIDER, R. Asst
- Göttingen, Burgstr. 51, Med. Fak., Anat. Inst. der Univ.**

- \* BLECHSCHMIDT, E. Dir.
  - BACHMANN, R. Prosektor
  - \* GRAUMANN, W. Asst
- Göttingen, Nikolausbergerweg 75, Mathem.-Naturw. Fak., Zool. Inst. der Univ. Göttingen.**
- \* HENKE, K. Dir.
  - \* PIEPHO, H. Ob. Asst
  - \* ULRICH, H. Wiss. Asst

Greifswald, Langefahrstr. 32b,  
Anat. Inst.

WEGNER, Prof., Dir.

PETER, K. Ordentl. Prof.

Hamburg 20, Schottmüllerstr. 1,  
Med. Fak., Anat. Inst. der Univ.  
Hamburg.

ZEIGER, K. Dir.

\* BAUTZMANN, H. 1 Prosektor  
Heiligenberg (17b), Kreis Oberlin-  
gen/Bodensee, Heiligenberg Inst.

\* MANGOLD, O. Abt.leiter

\* WOELLWARTH, C. von Asst

\* WAECHTER, Fr. H. Asst

\* STÄRCK, O.

Köln-Lindenthal, Kerpenerstr. 13,

† \* ROTMANN, E. Dir.

\* HARTWIG, H. Asst

\* ENGLÄNDER, H. Asst

Marburg a. d. Lahn, Robert Koch  
Str. 6, Anat. Inst. der Univ.

BENNINGHOFF, A. Dir.

\* ROLLHÄUSER, H. Asst

(Dozent)

\* WENDT, G. G. Asst

\* OKSCHE, A. Guest-worker

\* HORST ROLLHÄUSER,

Mrs J. ter Guest-worker

Marburg a. d. Lahn, Zool. Inst. der  
Univ.

\* LUTHER, W. Dir.

Mariensee über Neustadt am Rü-  
benberge (20a), Brit. Zone, Max  
Planck-Inst. f. Tierzucht und Tier-  
ernährung, Abt. f. Entw. Physiol.

\* SEIDEL, F. Abt.leiter

Münster, Westf., Robert Koch Str.  
31, Zool. Inst. der Westf. Landes-  
Univ.

HARDE, Asst

(no data received over this year)

Neustadt, Schwarzwald, Hirnfor-  
schungs-inst.

VOGT, Fr. M.

(new address for two years:

Pasadena 4, Calif., California  
Inst. of Technology, Dept of  
Biol.)

Stuttgart-Hohenheim, Zool. Inst. der  
Landwirtschaftl. Hochschule.

\* PFLUGFELDER, O. Prof., Dir.

DAUR, M. Asst

Tübingen, Württemberg, Hölderlin-  
str. 12, Mathem.-Naturw. Fak.,  
Zool. Inst. der Univ. Tübingen.

Hechingen, Zollerstr. 1,  
Max-Planck-Inst. für Biol.

\* KUEHN, A. Dir.

HARTMANN, M. Dir.

\* RISLER, H. Asst

\* REHM, Fr. M.

\* SCHWINCK, Fr. I.

Wilhelmshaven, Max Planck Inst.  
STICH, H.

(no data received over this year)

Würzburg, Röntgenring 10, Univ.  
Würzburg, Naturwiss. Fak., Zool.  
Inst.

\* PENNERS, A. Inst. vorstand

\* GOESZWALD, K. Abt.leiter

\* KLOFT, W. Asst

\* HUBL, H. Asst

\* SCHMIRLER, H. (im Lehrfach)

## HUNGARY

(no data received over this year)

## ITALY

Bologna (103), Via Belmeloro 8,  
Fac. di Sci., Ist. di Anat. comp.

\* PASQUINI, P. Dir.

\* RAUNICH, L. Asst

\* LEGHISSA, S. Asst

RINALDI, G. Techn.

ROSSI, B. Guest-Asst

\* ALOISI, Miss G. Guest-Asst  
Fac. di Med., Ist. di Istol. e Fisiol.  
gen.

OLIVO, O. M. Dir.

RIZZOLI, C. Asst

(no data received over this year)

Cagliari, Viale S. Bartolomeo 1,  
Fac. di Sci., Ist. di Anat. comp.

\* STEFANELLI, A. Dir.

\* THERMES, G. Asst

\* BAFFONI, G. Asst

Catania (208), Via Androne 25, Ist.  
di Zool. e Anat. comp. dell'Univ.,

\* MONTEROSSO, B. Prof. ord.,  
Dir.

PATANE', L. Aiuto

RONDISVALLE, C. Asst ord.

TENERELLI, V. Asst vol.

**Genova**, Univ. di Genova, Ist. di Anat. e Fisiol. comp.

\* REMOTTI, E. Prof., Dir.

**Milano**, Via Celoria 10, Univ. di Milano, Fac. di Sci., Ist. di Genet.

\* BARIGOZZI, C. Dir.

\* CASTIGLIONI, M. C. Asst

Ist. di Zool. e Anat. comp.

\* RANZI, S. Dir.

\* SCHREIBER, B. Asst

\* ORLANDI, Miss A. Asst

\* CIGADA, Miss M. Asst

\* AROSIO, R. Asst

\* TOSI, Miss L. Asst

\* CITTERIO, P. Grad. stud.

\* LEONE, V. Guest-worker

**Milano**, Via Mangiagalli 31, Fac. di Med. e Chir. dell'Univ. di Milano, Ist. d. Anat. umana norm.

BRUNI, A. C. Dir.

\* PRETO PARVIS, V. Asst

FUMAGALLI, Z. Asst

**Napoli**, Via Mezzocannone 8, Fac. di Sci., Univ. di Napoli, Ist. di Genet.

\* MONTALENTI, G. Dir.

\* VITAGLIANO, G. Asst

\* DE NICOLA, M. Res. Asst

\* BATTAGLIA, B. Res. Asst

\* CHIEFFI, G. Res. Asst

**Napoli**, Zool. Stat.

DOHRN, R. Dir.

BACCI, G.

GHIRETTI, F.

(no data received over this year)

\* MONROY, A.<sup>1</sup>

\* MONROY-ODDO, Mrs A.<sup>1</sup>

<sup>1</sup> (At Rockefeller Inst.,  
New York, U.S.A.)

**Padova**, Via Loredan 6, Fac. di Sci., Ist. di Zool. e Anat. comp.

\* D'ANCONA, U. Dir.

\* VANNINI, E. Chief Asst

\* COLOMBO, G. Asst

\* SABBADIN, A. Asst

**Palermo**, Via Archirafi 18, Ist. di

\* REVERBERI, G. Dir. Zool.

\* MINGANTI, A. Asst

\* ORTOLANI, G. Asst

\* ESPOSITO SEU MARGHERITA, Miss M. Guest-worker

\* FARINELLA-FERRUZZA,

Mrs N. Guest-worker

\* PASSALACQUA, Miss A.

Guest-worker

**Perugia**, S. Pietro, Fac. d. Med., Ist. di Biol. gen.

\* SPIRITO, A. Dir.

\* PITOTTI, M. C. Aiuto

BONDI, C. Asst F.F.

BONDI, D. Asst V.

\* NICOLETTI, B. Allievo interno

**Pisa**, Via A. Volta 4, Fac. di Sci., Ist. di Zool. e Anat. comp. dell'Univ.

\* BENAZZI, M. Dir.

\* PARDI, L. Asst

\* LEPORI, N. G. Asst

\* PAPI, F. Asst

\* BENAZZI-LENTATI, Mrs G.

**Roma**, Via Borelli 50, Fac. di Sci., Ist. di Anat. comp. dell'Univ. di Roma

\* COTRONEI, G. Dir.

\* PERRI, T. Asst

\* URBANI, E. Asst

\* URBANI-MISTRUZZI,

Signora L. Asst

**Siena**, Piazza S. Agostino 4, Fac. di Med., Ist. di Biol. e Zool. gen.

\* PADOA, E. Prof., Dir.

\* OMODEO, P. Asst

**Torino**, Corso Massimo d'Azeglio 52, Inst. of human Anat., Fac. of Med.

LORETI, F. Director

\* AMPRINO, R. M. Aiuto

\* FILOGAMO, G. Asst

\* VIGLIANI, F. Asst

\* FRANCESCHINI, M. Asst

\* LEVI, G. Prof. (Emer.), Anc. Dir.

\* GODINA, G. Guest-worker

**Torino**, Via Giovanni Giolitti 34, Inst. of Comp. Anat.

CORTI, A. Dir.

\* GUARDABASSI, Miss A.

\* SACERDOTE, Miss M.

## NETHERLANDS (Holland)

**Amsterdam**, Free Calvinistic Univ., Zool. Inst.

\* LEVER, J. Doc.

**Amsterdam** (O). 61, Mauritskade,  
Univ. of Amsterdam, Fac. of Med.,  
Anat.-Embryol. Inst.

- \* WOERDEMAN, M. W. Prof.,  
Dir.
- \* TRAMPUSCH, H. A. L. Chief  
Asst Lect.
- \* CATE, G. ten Chief Asst
- \* HUYBERS, Miss M. M. Asst
- \* LANGMAN, J. 2nd Asst

**Amsterdam**, 44, Plantage Doklaan,  
Univ. of Amsterdam, Zool. Lab.

- \* SLIJPER, E. J. Dir., Prof.
  - \* STELT, A. v. d.
- Groningen**, Oostersingel 69, Univ.  
of Groningen, Fac. of Med., Dept  
of Anat. and Embryol.
- \* ARIËNS KAPPERS, J. Dir.
  - \* BIJTEL, Miss J. H. Lect.
  - \* MOLL, J. Prosector
  - \* LANGEVOORT, H. L. Chief  
Asst

- \* WESTRA, S. Asst
  - \* JAGER, K. W. Asst
- Groningen**, Reitmakersrijge, Zool.  
Lab. of the Univ. of Groningen.
- BAERENDS, G. P. Dir.
  - BAERENDS-van ROON,  
Mrs J. M.

(no embryological work in progress)

**Leiden**, Wassenaarseweg, Boerhaa-  
vekwartier, Univ. of Leyden, Fac.  
of Med., Anat.-Embryol. Lab.

- \* DANKMEIJER, J. Dir.
  - \* ODE, Miss E. Prosect.
  - \* DEKKER, Miss A. Asst
  - \* WEL, W. H. v. d. Asst
  - \* COLLISTER, Miss R. M. Asst
  - \* KERKHOF, Miss A. M. Oud  
Prosect.
  - \* BOUR, J. W. H. Oud Asst
  - \* LUYENDIJK, W. Oud Asst
  - \* BAX, W. A. Oud Asst
  - \* HEYN, C. B. Oud Asst
  - \* ELSHOUT, Miss A. M. Oud  
Asst
  - \* SNELLEN, H. A. Asst
- Lab. for Exper. Histol.
- \* GAILLARD, P. J. Dir.
  - \* ZAAIJER, Miss J. J. P.  
Conservator
  - \* HOGEWONING, C. H. Asst
  - \* OORT, J. Asst

**Utrecht**, Biltstr. 172, State Univ. of  
Utrecht, Vet. Fac., Vet.-Anat. Inst.

- \* KREDIET, G. Dir.
  - \* BRUINS, J.
- Utrecht**, Janskerkhof 2, Hubrecht  
Lab., Internat. Embryol. Inst.
- \* RAVEN, Chr. P. Prof., Dir.
  - \* NIEUWKOOP, P. D. Adj. Dir.
  - \* PLANQUE, B. de Asst
  - \* FABER, J. Asst
  - \* EYAL—GILADI, Mrs H.  
(Jeruzalem) Guest-worker
  - \* GYLLENSTEN, L. (Stockholm)  
Guest-worker
  - \* LOMBARD, G. L. (Pretoria)  
Guest-worker
  - \* STEYN, W. (Bloemfontein)  
Guest-worker
  - \* VANNINI, E. (Padua)  
Guest-worker

Guest-workers, Stud.

- \* BOTERENBROOD, Miss E. C.
- \* EGMOND, Miss M. T. C. van
- \* HAIJE, Miss S. C. A.
- \* KREMER, Miss A.
- \* KUIPER, J. W.

**Utrecht**, Janskerkhof 3, State Univ.  
of Utrecht, Fac. of Sci., Zool. Lab.

- \* RAVEN, Chr. P. Dir.
- \* BRETSCHEIDER, L. H.  
Lect.
- \* KAMER, J. C. v. d. Asst in  
Chief

- \* BEZEM, J. J. Asst
  - \* SOBELS, F. H. Asst
- Guest-workers, Stud.
- \* ARKEL, G. A. van
  - \* BERGE, T. H. ten
  - \* BOTERENBROOD, Miss E. C.
  - \* BROEK, Miss E. v. d.
  - \* BRUNNEKREEFT, F.
  - \* DUYKER—DE BEER,  
Mrs A. S.

- \* EGMOND, Miss M. T. C. van
- \* HEESCH, Miss W. H. T. van
- \* KOK, J. C. N.
- \* KUIPER, J. W.
- \* LEE, H. J. v. d.
- \* LOO, Miss R. P. van
- \* NIJENHUIS, E. D.
- \* NIJENHUIS, L. E.
- \* OPPENOORTH, F. J.



- \* SMIT, Miss E. J. H.
  - \* SPRONK, N.
  - \* STALFOORT, Miss T. G. J.
  - \* UTRECHT, W. L. van
  - \* VEEN, H. W. v. d.
  - \* VERHEYEN, F. J.
- Utrecht**, Janskerkhof 3, State Univ. of Utrecht, Med. Fac., Anat.-Embryol. Lab.
- MIJSBERG, W. A. Dir.
  - \* DETH, J. H. M. G. van  
Prosector
  - \* BROERS, C. J. Asst
  - \* EDGAR, G. W. F. Asst

**NORWAY**

**Oslo**, Univ. of Oslo, Anat. Inst.

- \* JANSEN, J. Dir.
- \* HARMARK, W. Asst

**Paradis**,

- \* UBISCH, L. von Prof. (Emer.)

**POLAND (Polska)**

**Gdańsk**, Med. Acad., Inst. of Histol. and Embryol.

- \* HILLER, S. Dir.
- \* WSZELACZYŃSKA, M.  
Assoc. Asst
- \* GODLEWSKI, H. Assoc. Asst
- KRAHELSKA, J. Asst
- \* KROTKIEWICZ, T.
- \* PIOTROWSKA, J.
- \* WISKONT, H.

**Kraków**, św. Anny 6, Zakład Anat. Porównawczej U.J. im H. Hoyer

- \* GRODZIŃSKI, Z. Head of Inst.
- \* MARCHLEWSKI, J. Asst
- \* DATKOWNA, H. Asst
- \* GAZDA, A.
- \* SOLEWSKI, W.
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(no data received over this year)

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\* HALL, P. Guest-w.  
\* KALLEN, B. Guest-w.  
\* BERQUIST, H. Guest-w.  
WEDIN, B. Guest-w.

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\* MONNÉ, L. M. W. A. Asst Prof.

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\* BÄCKSTRÖM, S. Asst

\* GUSTAFSON, U. T. Asst

\* HULTIN, J. M. T. Asst

\* LINDVALL, S. Asst

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Uppsala, Uppsala Univ., Zool. Inst.

\* HÖRSTADIUS, S. Prof., Dir.

\* JÄGERSTEN, G. Prof.

KULLENBERG, B. Laborator  
(Assoc. Prof. of Entomol.)

\* HOLM, K. A. Docent  
(Curator of the Museum)

\* NYHOLM, K. G. Docent  
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STEIGER, H.

LÜSCHER, M.  
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 \* STRAUSS, F. Pros.  
 \* MOSSMANN, H. W.  
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 \* ROSIN, S. Asst  
 \* TSCHUMI, P. Asst  
 CHEN, P. Sh. (temporarily)  
 Abt. für Zoophysiol.  
 \* LEHMANN, F. E. Dir.  
 \* BRETSCHER, A. Asst  
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 DETTELBACH, H. R.  
 \* TARDENT, P.  
 \* TSCHUMI, P.  
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 Fac.  
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 \* FEREMUTSCH, K. Asst  
 \* HEIMANN, H. Asst  
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 BAUMANN, J. A. Dir.  
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 \* STEINER, H. Prof.  
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 \* ANDERS, G.  
 \* BUCHER, N.  
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 Res. Asst, Ph. D. stud.  
 \* DEUCHAR, Miss E. M.  
 Ph. D. stud.  
 \* MOOKERJEE, S. Ph. D. stud.  
 \* ROBERTSON, Mrs F. M.

Ph. D. stud.  
 b) Genet. Lab., Anim. Breeding and  
 Genet. Res. Org.

\* BEATTY, R. A. Sr Sci. Officer  
 FALCONER, D. S. Sr Sci.  
 Officer  
 \* FISCHBERG, M. Res. Grantee  
 \* FRASER, A. S. Res. Grantee  
 \* REEVE, E. C. R. Sr Sci.  
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c) Med. Res. Council

\* CARTER, T. C. M.R.C. Sci.  
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 \* JONES, B. M. Lect.  
 \* TUFT, P. H. Lect.  
 \* HALE, L. J. Lect.  
 \* KILLE, R. A. Asst  
 \* DOUGLAS, R. I. Asst  
 \* CLEAT, N. D. Res. stud.  
 \* WALLACE, D. R. J. Res. stud.  
 STEVEN, D. M.

### U.S.S.R.

(No data received)

# LIST OF SUBJECTS

## with Names of Investigators

(arranged according to organ systems and systematic groups)

### GENERAL DIVISION

#### *CLASSIFICATION INTO GENERAL RUBRICS*

- I Descriptive and comparative embryology
- II Experimental developmental morphology
- III Developmental physiology
- IV Development and genetics
- V Development and pathology
- VI Regeneration
- VII Metamorphosis

#### *CLASSIFICATION OF SYSTEMATIC GROUPS AND SPECIAL ORGAN-SYSTEMS (to be used for all rubrics)*

##### *Systematical subdivision*

#### **EV Evertebrata**

- A Porifera
- B Coelenterata
- C Vermes and Onychophora, Tardigrada and Linguatulida
- D Arthropoda
- E Mollusca
- F Bryozoa, Entoprocta, Brachiopoda and Hemichordata
- G Echinodermata
- H Urochordata

#### **V Vertebrata**

#### **LV Lower Vertebrates**

- I Pisces
- J Amphibia

#### **HV Higher Vertebrates**

- K Reptilia
- L Aves
- M Mammalia

##### *Subdivision of special organ systems*

#### **1 Skin**

- a general subjects
- b exo-skeleton
- c teeth
- d hair
- e feathers
- f sense organs
- g glands
- h mammae
- i pigment patterns

#### **2 Nervous system**

- a general subjects

## b central nervous system

- 1 brain
- 2 spinal cord

## c accessory organs

- 1 paraphysis
- 2 pariental organ
- 3 pineal body
- 4 hypophysis

## d ganglia

- 1 cephalic ganglia
- 2 spinal ganglia

## e nerves

- 1 cephalic nerves
- 2 spinal nerves

## f para- and sympathetic and intramural nervous system

- 1 para- and sympathetic nervous system
- 2 intramural nervous system

## g meninges

**3 Special sense organs**

## a nasal organ

## b eye

- 1 eye
- 2 lens

## c ear

**4 Skeleton**

## a general subjects

## b embryonic temporary endo-skeleton

## c skull

## d truncal skeleton

## e limbs and wings

## f joints

**5 Muscular system**

## a general subjects

## b skeletal muscles (head, trunk and tail)

## c visceral muscles (head and trunk)

## d muscles of limbs and wings

**6 Alimentary tract**

## a general subjects

## b mouth- and pharyngeal cavities

## c intestinal tract

## d proctodaeum

## e salivary glands

## f liver

## g pancreas

**7 Respiratory organs**

## a general subjects

## b external gills

## c internal gills

## d lungs and larynx

## e air-bladder

- 8 Heart, vascular system and blood**
  - a general subjects
  - b heart
  - c/d arterial and venous system
  - e capillary system
  - f blood
- 9 Coelomic cavity and endothelia, lymphatic system and connective tissue**
  - a/b coelomic cavities and endothelia
  - c lymphatic system
  - d connective tissue
- 10 Urogenital system and sex determination**
  - a general subjects
  - b/c kidney and urinary ducts
  - d/e/f gonads (ovary and testis), genital tracts and accessory glands
  - g sex determination
- 11 Endocrine glands**
  - a general subjects
  - b hypophysis
  - c thymus
  - d thyroid gland
  - e gonads
  - f adrenals
  - g pancreas

## I. DESCRIPTIVE AND COMPARATIVE EMBRYOLOGY SUBDIVISION

- 1 Theoretical problems*
- 2 Methods and technics*
- 3 General subjects*
- 4 Initial development*
  - a Primordial germ cells
  - b Gameto-, ovo- and spermato-genesis
  - c Maturation
  - d Ovulation and oviposition
  - e Activation and fertilization
  - f Parthenogenesis
  - g General subjects
- 5 Cleavage and mitosis*
  - a Cleavage
  - b Mitosis
- 6 Further development of Invertebrates*  
(including complete and partial (e.g. early) development)
  - EV Evertebrata
    - A Porifera
    - B Coelenterata
    - C Vermes and Onychophora, Tardigrada and Linguatulida
    - D Arthropoda
    - E Mollusca
    - F Bryozoa, Entoprocta, Brachiopoda and Hemichordata

G Echinodermata

H Urochordata

7 *Further development of Vertebrates*

(including complete and partial (e.g. early) development)

a General investigations

1 Partial development

2 Complete development

3 Implantation and placentation

b Early development, gastrulation, etc.

1 Early development

2 Gastrulation and formation of germ layers

3 Development of foetal membranes

c Neurulation, etc.

1 Neurulation

2 Development of neural crest

3 First larval development

d Development of part of the organism

1 Head

2 Limb and wings

3 Tail

e Development of special organ-systems

(Cf. general subdivision p. 120—122)

f Histo- and cytogenesis

8 *Growth and differentiation*

a Growth

b Growth and differentiation

c Differentiation

1 *Theoretical problems*

Ubisch, L. v. — a EV + V

Steiner, H. — b V

Ubisch, L. v. — f I

Bounoure, L. — a J

Töndury, G. — c M

b *Gameto-, ovo- and spermatogenesis*

Gontcharoff, Miss M. — b C

Lepori, N. G. — a C

Omodeo, P. — b C

Baffoni, G. — c D

Larambergue, M. de — b E

Lehmann, F. E. — d EV

Biss, Frau R. — a C

Mulnard, J. — a D

Bovey, R. — b D

Vannini, E. — a LV

Bovey, R. and Callan, H. G. — c J

Callan, H. G. — b J

Wittek, Miss M. — a J

Wittek, Miss M. — b K

Clavert, J. — a L

Bayley, S. T.; Hanson, E. J. and

Randall, J. T. — a E

2 *Methods and technics*

Vandebroek, G. — i EV

Wenger, B. S. — c EV + V

Sausser, G. — c M

3 *General subjects*

Dales, R. P. — a C

Newell, G. E. — a C

Jones, B. M. — a D

Shulow, A. — a D

Elshout, Miss A. M. — a V

Rostand, J. — c J

Moore, J. A. — c J

Lewis, F. Th. — a HV

Hamilton, H. L. — a L

Horst, C. J. v. d. — a M

4 *Initial development*a *Primordial germ cells*

Austin, C. R. and  
 Braden, A. W. H. — a  
 Bovey, R. — a  
 Stoch, Miss Z. — a

### c Maturation

Poulson, D. F. — a  
 Chih, C. S. and  
 Moricard, R. — a

### d Ovulation and oviposition

Gontcharoff, Miss M. — b  
 Pardi, L. — a

### e Activation and fertilization

Benazzi, M. — a  
 Benazzi-Lentati, Mrs G. — a  
 Davies, D. H. — a  
 Austin, C. R. and  
 Braden, A. W. H. — a  
 Mossman, H. W. and  
 Strauss, F. — c

### f Parthenogenesis

Benazzi, M. — a  
 Lepori, N. G. — a  
 Göszwald, K. — c  
 Monterosso, B. — a  
 Pardi, L. — a

### g General subjects

Papi, F. — a  
 Weglarska, Miss B. — a  
 Bretschneider, L. H. — a  
 Vakaet, L. C. — a  
 Cei, J. M. — a

## 5 Cleavage and mitosis

### a Cleavage

Kühn, A. — d  
 Colombo, G. — a  
 Gothie, Miss S. and  
 Moricard, R. — b  
 Rosenbaum, R. M. — b

### b Mitosis

## 6 Further development of Invertebrates

(including complete and partial  
 (e.g. early) development)

### EV Evertabrata

Vandebroek, G. — h

### A Porifera

### B Coelenterata

Kühn, A. — d  
 Leghissa, S. — b

### C Vermes and Onychophora, Tardigrada and Linguatulida

Annez, Ch. — a  
 Bookhout, C. G. — a  
 Bookhout, C. G. — b  
 Chapman, G. — a  
 Chapman, G. — b  
 Dales, R. P. — a  
 Jägersten, K. G. M. — a  
 Manton, S. M. — a  
 Newell, G. E. — a  
 Nyholm, K. G. — a  
 Omodeo, P. with students — a  
 Papi, F. — a  
 Paschma, M. — a  
 Radecka, E. — a

### D Arthropoda

Caspari, E. — a  
 Castiglioni, M. C. — a  
 Cleat, N. D. — a  
 Czapik, Miss A. — a  
 Eassa, Y. E. — a  
 Fautrez-Firlefyn, Mrs. N. J. — a  
 Henke, K. mit Mitarbeitern — a  
 Holst Christensen, P. J. — a  
 Jones, B. M. — b  
 Jones, B. M. — c  
 Kloft, W. — a  
 Kugler, O. E. — a  
 Kugler, O. E. — b  
 Monterosso, B. — a  
 Mulnard, J. — a  
 Mulnard, J. — b  
 Pardi, L. — a  
 Poulson, D. F. — a  
 Rehm, Miss M. — a  
 Sandison, Miss E. E. — a  
 Santler, Miss J. E. — a  
 Silberbauer, Mrs B. I. — a  
 Ulrich, H. — b  
 Vachon, M. — a  
 Zacwilichowska, Miss K. — a

### E Mollusca

Heaysman, Miss J. E. M. — a  
 Larambergue, M. de — a  
 Raven, Chr. P. — e



**F Bryozoa, Entoprocta,  
Brachiopoda and  
Hemichordata**

- Burdon-Jones, C. — a  
Colwin, A. L. and  
Colwin, Mrs L. H. — b  
Diding, S. — a  
Janssens, J. and  
Vandebroek, G. — a

**G. Echinodermata**

- Colwin, Mrs L. H. — c  
Nyholm, K. G. — b  
Ubisch, L. V. — c

**H Urochordata**

- Boeke, J. — c

**7 Further development of  
Vertebrates**

(including complete and partial  
(e.g. early) development)

**a General investigations**

*Partial development*

- Battle, Miss H. I. — b I  
Peers, Miss D. J. — a I  
Cei, J. M. — a J  
Nieuwkoop, P. D. — a J  
Hamilton, W. J. — c M  
Hertig, A. T. and Rock, J. — a M  
Hertig, A. T. and Rock, J. — b M  
Heuser, C. H. — a M  
Sinclair, J. G. — a M

*Complete development*

- Bailey, J. R. and  
Horn, E. C. — a I  
Damas, H. F. C. — a I  
Davies, D. H. — a I  
Lever, J. — a I  
Ubisch, L. v. — f I  
Buno, W. — a J  
Faber, J. — a J  
Pisano, A. — b J  
Rostand, J. — c J  
Sedra, Shokralla, N. — b J  
Pasteels, J. J. — b K  
Hamburger, V. — c L  
Hamilton, H. L. — a L  
Chanmugam, P. K. — a M  
Gillman, J. — a M  
Orsini, Mrs M. W. — a M

*Implantation and placentation*

- Boyd, J. D. and  
Hamilton, W. J. — a M  
Frick, H. — a M  
Hill, J. P. — a M  
Hillemann, H. H. — c M  
Howorka, E. J. — b M  
Howorka, E. J. — c M  
Ramsey, Mrs E. M. — a M  
Sinclair, J. G. — a M  
Sinclair, J. G. — b M  
Wislocki, G. B. — a M

**b Early development, gastru-  
lation, etc.**

- Battle, Miss H. I. — c I  
Peers, Miss D. J. — a I  
Steyn, W. J. — b J  
Gilbert, Miss C. — a M  
Krause, J. W. — a M  
Sinclair, J. G. — a M  
Strauss, F. — a M

*Early development*

- Ortolani, Miss G. — a I  
Stockard, A. H. — a I  
Colombo, G. — a J  
Rosenbaum, R. M. — b J  
Harrison, R. J. — a M  
Radkowa, M. and  
Sembratowa, Z. — a M  
Sembrat, K. — d M

*Gastrulation and formation of  
germ layers*

- Vandebroek, G. — h LV  
Trinkaus, J. P. — a I  
Bonin, W. — b M

*Development of foetal membranes*

- Bonin, W. — b M  
Kropp, B. N. — b M  
Mossman, H. W. — b M

**c Neurulation, etc.**

- Elwood, M. A. — a J  
Wilens, Miss S. — a J  
*Neurulation (s.s.)*  
Ubisch, L. v. — f I  
*Development of neural crest*  
Algard, F. T. — a J  
Niu, M. C. and  
Twitty, V. C. — b J  
Raven, Chr. P. — d J

*First larval development*

Pasteels, J. J. — e J

**d Development of part of the organism***Head*

Bleakly, M. C. — a I

Heesch, Miss W. H. T. van — a I

Kamer, J. C. v. d. — b I

Bellairs, A. d'A. — a HV

Crompton, A. W. — a L

Malan, Miss M. E. — a L

Broers, C. J. — a M

King, T. S. — a M

Töndury, G. — b M

*Limbs and wings*

Steiner, H. — a V

Blechs Schmidt, E. — b M

*Tail*

Newth, D. R. — e J

Caspari, E. — b M

**e Development of special organ-systems***Skin**General subjects*

Cordier, J. — a J

Alexandrowicz, St. — a M

Blechs Schmidt, E. — a M

Carter, H. B. — a M

*Teeth*

Bélangier, L. F.; Greulich, R. and Leblond, C. P. — a V

Kindahl, Miss M. E. — a M

Williams, S. C. — b M

Zaaijer, Miss J. J. P. — b M

*Hair*

Davidson, Miss P. and

Hardy, Miss M. H. — a M

*Feathers*

Steiner, H. — d L

*Sense organs*

Kille, R. A. — a I

Pehrson, G. T. — a I

*Glands*

Glimstedt, G. and Hall, P. — a L

*Pigment cells and patterns*

Faber, J. — c J

*Nervous system**General subjects*

Boeke, J. — a V

Hoadley, L. — b V

Leghissa, S. — c V

Dreyer, Miss M. V. — a L

Hoadley, L. — a L

Boyd, J. D. — b M

King, T. S. — a M

Latimer, H. B. — c M

Patten, B. M. — b M

Perry, J. H. — b M

Preto Parvis, Mrs V. — b M

*Central nervous system**Brain*

Heimann, H. — a I

Kuiper, J. W. — b I

Olsson, R. — a I

Ariëns Kappers, J. — c J

Ariëns Kappers, J. — e J

Piatt, J. — b J

Berquist, H. — a HV

Grünthal, E. — a HV

Assenmacher, I. and

Benoit, J. — a L

Grignon, G. — a L

Krabbe, K. H. — a L

Blechs Schmidt, E. — c M

Bour, J. W. H.; Dankmeijer, J. and Luyendijk, W. — a M

Desclaux, P. — a M

Feremutsch, K. — a M

Giroud, A. — a M

Godina, G. — a M

Godina, G. — b M

Humphrey, Miss T. — a M

Jansen, J. — a M

Jansen, J. — b M

Källén, B. — a M

Lavelle, A. and

Windle, W. F. — a M

Luyendijk, W. — b M

Moll, J. — b M

Preto Parvis, Mrs V. — c M

Teyseyre, Miss J. — a M

Westra, S. — a M

Windle, W. F. — a M

*Spinal cord*

Kollros, J. J. — a J

Lumb, Miss E. S. — a L

Watterson, R. L. — a L

*Accessory organs**Paraphysis*

Ariëns Kappers, J. — b K

Langevoort, H. L. — a L

<i>Pariental organ</i>		Anderson, Miss I. L. — a	J
<i>Pineal body</i>		Martin, Miss A. V. W. — a	HV
Kamer, J. C. v. d. — a	V	Martin, Miss A. V. W. — b	HV
Kamer, J. C. v. d. — b	I	Graumann, W. — a	M
Kuiper, J. W. — b	J	Robertson, G. G. — a	M
Haije, Miss S. C. A. — a	L	<b>Skull</b>	
<i>Hypophysis</i>		Fisk, A. and	
Oort, J. — a	L	Tribe, Miss M. — b	I
Bour, J. W. H.; Dankmeijer, J. and Luyendijk, W. — a	M	Johnels, A. G. — a	I
<b>Ganglia</b>		Pehrson, G. T. — a	I
<i>Cephalic ganglia</i>		Kille, R. A. — a	I
Bonin, W. — a	I	Eeden, J. A. van — a	J
Raven, Chr. P. — d	J	Eeden, J. A. van — b	J
<i>Spinal ganglia</i>		Feldman, M. — a	J
Kollros, J. J. — a	J	Pentz, Miss K. — a	J
<b>Nerves</b>		Sedra, Shokralla N. — a	J
<i>Cephalic nerves</i>		Westhuizen, C. M. v. d. — a	J
Raven, Chr. P. — d	J	Bellairs, A. d'A. — a	HV
<i>Spinal nerves</i>		Malan, Miss M. E. — a	L
Kollros, J. J. — a	J	Starck, D. — b	L
<b>Para- and sympathetic and intramural nervous system</b>		Broers, C. J. — a	M
Boeke, J. — b	V	Eloff, F. C. — b	M
Levi-Montalcini, Miss R. — b	HV	Hillemann, H. H. — b	M
Campenhout, E. van — a	L	Johns, B. A. E. — a	M
Kramer, T. C. — a	L	Starck, D. — a	M
Filogamo, G. — b	M	<b>Truncal skeleton</b>	
<b>Meninges</b>		Buchtowna, Miss A. — a	LV
Ariëns Kappers, J. — d	J	Orska, Miss J. — a	I
<i>Special sense organs</i>		Newth, D. R. — e	J
<b>Nasal organ</b>		Pletzen, R. van — a	J
Eloff, F. C. — a	M	Ryke, P. A. J. and	
Ślotwiński, J. — a	M	Smit, A. L. — b	J
<b>Eye</b>		Smit, A. L. — a	J
Bijtel, Miss J. H. — a	J	Peacock, A. — a	M
Newth, D. R. — a	J	<b>Limbs and wings</b>	
Rogers, K. T. — b	L	Bretscher, A. — d	J
Brandt, W. — c	M	Pletzen, R. van — b	J
<b>Ear</b>		Franceschini, M. — a	M
Fisk, A. — a	I	<b>Joints</b>	
Bijtel, Miss J. H. — c	J	Moll, J. — c	M
Kamer, J. C. v. d. — c	J	<i>Muscular system</i>	
Glimstedt, G. and Hall, P. — a	L	<b>General subjects</b>	
Bast, T. H. — a	M	Bayley, S. T.; Hanson, E. J. and	
Broers, C. J. — a	M	Randall, J. T. — b	V
Hillemann, H. H. — b	M	Herrmann, H.; Neukom, B. J. and	
<i>Skeleton</i>		Schneider, M. J. — d	L
<b>General subjects</b>		Jager, K. W. — a	M
Bélanger, L. F.; Greulich, R. and		Rollhäuser, H. — b	M
Leblond, C. P. — a	V	<b>Skeletal muscles</b>	
Murray, P. D. F. — a	V	(head, trunk and tail)	
		Newth, D. R. — e	J

Ryke, P. A. J. — a	J	Slijper, E. J. — a	M
Ryke, P. A. J. and Smit, A. L. — b	J	Wel. W. H. v. d. — a	M
<b>Visceral muscles</b>		<b>Heart</b>	
Eeden, J. A. van — b	J	Barry, A. — a	HV
Feldman, M. — a	J	Patten, B. M. — a	HV
Gyllensten, L. J. W. — a	M	Kramer, T. C. — a	L
<b>Muscles of limbs and wings</b>		Meyer, R. de — a	L
Bretscher, A. — d	J	Davies, F. and Francis, E. T. B. — a	M
<i>Alimentary tract</i>		Latimer, H. B. — e	M
<b>General subjects</b>		Orts Llorca, F. — a	M
Faber, J. — d	J	Windle, W. F. — e	M
<b>Mouth- and pharyngeal cavities</b>		<b>Vascular system</b>	
Toivonen, S. — d	J	Millard, Mrs N. A. H. — a	J
<b>Intestinal tract</b>		Strawiński, S. — a	J
Moog, F. and		Stelt, A. v. d. — a	K
Wenger, Mrs E. L. — d	L	Wingstrand, K. G. — a	L
Filogamo, G. — b	M	Godina, G. — c	M
Johns, B. A. E. — b	M	Kropp, B. N. — a	M
Lewis, F. Th. — b	M	Ramsey, Mrs E. M. — a	M
<b>Proctodaeum</b>		Vermaak, D. — a	M
<b>Salivary glands</b>		<b>Blood</b>	
Orts Llorca, F. — b	M	<i>Coelomic cavities and endothelia, lymphatic system and connective tissue</i>	
<b>Liver</b>		<b>Coelomic cavities and endothelia</b>	
Hjelmman, G. — a	M	<b>Lymphatic system</b>	
<b>Pancreas</b>		Bautzmann, H. — b	V
Donaldson, J. C. — a	M	Snook, T. — a	M
Humphrey, Miss T. — b	M	<b>Connective tissue</b>	
<i>Respiratory organs</i>		Johnels, A. G. — b	I
<b>General subjects</b>		Bax, W. A. — a	M
Gazda, A. — a	I	Rollhäuser, H. — a	M
Solewski, W. — a	I	<i>Urogenital system and sex determination</i>	
<b>Lungs and larynx</b>		<b>General subjects</b>	
Wallmann, Miss S. — a	J	Kugler, O. E. — a	I
Bagiński, S. and coworkers — a	M	Steyn, W. J. — d	J
Beau, A. A. and Dollander, A. — a	M	Allanson, Mrs M. — a	M
Holst Christensen, P. J. — b	M	Carr, Miss E. B. — a	M
Lewis, F. Th. — b	M	Hamilton, W. J. and Harrison, R. J. — b	M
Walander, A. — a	M	Latimer, H. B. — d	M
<i>Heart, vascular system and blood</i>		Mossman, H. W. — b	M
<b>General subjects</b>		Orsini, Mrs M. W. — a	M
Gazda, A. — a	I	Raynaud, A. — a	M
Raunich, L. — a	I	<b>Kidney and urinary ducts</b>	
Solewski, W. — a	I	Fisk, A. and Tribe, Miss M. — c	V
Mustakallio, M. — a	M	Szarski, K. W. — a	LV
Odé, Miss E. — a	M		
Perry, J. H. — b	M		

Holmgren, N. F. — a	I	<b>Pancreas</b>	
Cambar, R. — b	J	Mialhe, P. — a	HV
Fraser, Miss E. A. — b	M		
Gyllensten, L. J. W. — a	M	<b>f Histo- and cytogenesis</b>	
<b>Gonads, genital tracts and accessory glands</b>		Bayley, S. T.; Hanson, E. J. and Randall, J. T. — b	V
Vannini, E. — b	V	Davies, H. G. and Walker, P. M. B. — a	HV
Chieffi, G. — a	I	Martin, Miss A. V. W. — a	HV
Bounoure, L. — a	J	Martin, Miss A. V. W. — b	HV
Steyn, W. J. — a	J	Filogamo, G. — b	M
Bruins, G. and Krediet, G. — a	HV	Preto Parvis, Mrs V. — a	M
Assenmacher, I. and Benoit, J. — a	L	Preto Parvis, Mrs V. — b	M
Campenhout, E. van — a	L		
Austoker, Mrs J. — a	M	<b>g Growth and differentiation</b>	
Corner, G. W. — a	M	<b>a Growth</b>	
Dankmeijer, J. and Dekker, Miss A. — b	M	Ubisch, L. v. — b	EV + V
Hamilton, W. J. and Harrison, R. J. — b	M	Cleat, N. D. — a	D
Harrison, R. J. — b	M	Risler, H. — a	D
Töndury, G. — c	M	Ubisch, L. v. — c	G
<b>Sex determination</b>		Balinsky, B. I. — a	J
Hampé, A.; Ostertag, Miss Y.; Pfleger, Miss D.; Salzgeber, Miss B.; Strudel, G.; Wolff, Mrs Em. and Wolff, Et. C. — b	L	Lehmann, F. E. und Mitarbeitern — a	J
Hay, Miss D. — a	M	Wallmann, Miss S. — a	J
		Balinsky, B. I. — a	M
<b>Endocrine glands</b>		Blehschmidt, E. — a	M
<b>General subjects</b>		Franceschini, M. — a	M
Latimer, H. B. — c	M	Latimer, H. B. — a	M
<b>Hypophysis</b>		Latimer, H. B. — b	M
Assenmacher, I. and Benoit, J. — a	L	Latimer, H. B. — c	M
Grignon, G. — a	L	Latimer, H. B. — d	M
Oort, J. — a	L	Latimer, H. B. — e	M
Wingstrand, K. G. — a	L		
<b>Thymus</b>		<b>b Growth and differentiation</b>	
<b>Thyroid gland</b>		Wallace, D. R. J. — a	D
Leblond, C. P. — a	V	Moog, F. and Wenger, Mrs E. L. — d	L
<b>Gonads</b>		Blehschmidt, E. — b	M
<b>Adrenals</b>		Blehschmidt, E. — c	M
Preto Parvis, Mrs V. — a	M	Boyd, J. D. and Hamilton, W. J. — a	M
		Hamilton, W. J. and Harrison, R. J. — b	M
		Rollhäuser, H. — a	M
		<b>c Differentiation</b>	
		Godina, G. — a	M

## II. EXPERIMENTAL DEVELOPMENTAL MORPHOLOGY SUBDIVISION

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  - c Maturation
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  - e Activation and fertilization
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    - 1 Induction
    - 2 Determination
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  - e Development of special organ systems  
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- 8 *Growth and differentiation*
  - a Growth

a/b Growth and differentiation

b Differentiation

## CHARACTER OF INVESTIGATION

(4) Physical treatment

(5) Chemical treatment

(6) Influence of hormones and vitamins

*1 Theoretical problems*

Ubisch, L. v. — b EV + V

Ubisch, L. v. — c G

Yamada, T. — c V

*2 Methods and technics*

Wenger, B. S. — d EV + V

Lindahl, P. E. — a G

Beatty, R. A. and

Fischberg, M. — b M

Beatty, R. A. — c M

*3 General subjects (asexual development, etc.)*

Wetmore, R. H. — a Plants

Wetmore, R. H. — b Plants

Brien, P. et

Herlant, Mme H. — a EV

Herlant-Meewis, Mme H. — f A

Brien, P. — c B

Herlant-Meewis, Mme H. — a C

Vannini, E. — d C

Shulow, A. — a D

Dollander, A. — a J

Tseng, Miss M. P. — a J

Deth, J. H. M. G. van — b L

*4 Initial development***a Primordial germ cells**

Vannini, E. — d C

Mangold, O. and

Stärk, O. — a J

Sembrat, K. — b J

Steyn, W. J. — c J

Wang, Y. T. — a J

Wang, Y. T. — b J

**b Oogenesis and spermatogenesis**

Lehmann, F. E. — d EV

Vannini, E. — d C

Bucher, N. — a (4/5)D

Godlewski, H. G. — a (4)J

Green, S. H. — a M

Mandl, Miss A. M. — a M

Zuckerman, S. — a M

**c Maturation****d Ovulation and oviposition****e Activation and fertilization**

Pisano, A. — d J

Austin, C. R. and

Braden, A. W. H. — b M

**f Parthenogenesis**

Monterosso, B. — a D

Harvey, Mrs E. B. — a (4)G

Fankhauser, G. — a (4)J

Fischberg, M. — a J

Rostand, J. — a (4)J

Marjanen, P. — a (5)M

Pesonen, S. — a (5)M

Pesonen, S. — c (5)M

**g General subjects**

Brien, P. et

Herlant, Mme H. — a EV

Brien, P. — b B

Brien, P. — c B

Leghissa, S. — a H

Vandebroek, G. — c H

Piotrowska, J. — a (4)J

Vintemberger, P. — a J

McCafferty, R. E. — a (6)M

*5 Cleavage and mitosis***a Cleavage**

Costello, D. P. and

Henley, Miss C. — a (4)C

Robertson, Mrs F. M. — a E

Motomura, I. — b G

Colombo, G. — b (6)J

Fankhauser, G. — a J

**b Mitosis**

Luther, W. — b (4)V

Battle, Miss H. I. — a I

Costello, D. P. and

Henley, Miss C. — b (5)J

Hintzsche, E. — b HV

6 Further development of Invertebrates

a General subjects (complete development)

Brien, P. et	
Herlant, Mme H. — a	EV
Ubisch, L. v. — b	EV
Brien, P. — b	B
Goto, T. — a	(5)D
Monterosso, B. — a	D
Seidel, F. — b	D
Vachon, M. — a	D
Colwin, A. L. and	
Colwin, Mrs L. H. — b	F
Ubisch, L. v. — c	G

b Topogenesis

Sembrat, K. — a	B
Gloor, H. — a	(5)D
Hadorn, E. — c	D
Holm, K. Å. — a	D
Poulson, D. F. — b	D
Bäckström, S. A. A. — a	(5)G
Dan, K. — a	G
Lindahl, P. E. — a	G
Moore, A. R. — b	G
Leghissa, S. — a	H
Vandebroek, G. — a	H
Vandebroek, G. — b	H
Vandebroek, G. — f	(5)H

c Determination of primitive development

Haget, A. — a	D
Holm, K. Å. — a	D
Poulson, D. F. — b	D
Smreczyński, S. — a	D
Urbani, E. — d	D
Brunnekreeft, F. — a	(4)E
Edmond, Miss M. T. C. van	
and Verheyen, F. J. — a	(4)E
Raven, Chr. P. — a	E
Raven, Chr. P. — c	E
Vandebroek, G. — m	F
Hörstadius, S. — a	G
Leghissa, S. — a	H
Urbani, E. — c	H
Vandebroek, G. — d	(4)H
Vandebroek, G. — e	H

d Development of part of organism (head)

Raven, Chr. P. — e (5)E

e Development of special organ systems

<i>Skin</i>	
Vandebroek, G. — m	F
<i>Nervous system</i>	
Boeke, J. — c	H
<i>Skeleton</i>	
Moore, A. R. — a	G
<i>Urogenital system</i>	
Bucher, N. — a	(4/5)D

f Histo- and cytogenesis

7 Further development of Vertebrates

a General investigations

<i>General subjects</i>	
Goodhart, C. B. — b	J
Krauss, M. — b	J
Waddington, C. H. — c	J

*Complete development*

Sembrat, K. — c	(6)V
Ubisch, L. v. — b	V
Goto, T. — a	(5)J
Holtfreter, J. K. F. — a	(5)J
Perri, T. — d	(4)J
Pisano, A. — a	J
Urbani-Mistruzzi, Mrs L. — b	(4)J

Bellairs, A. d'A. and	
Bellairs, Mrs M. R. — b	K
Orsini, Mrs M. W. — a	M
Seidel, F. — a	M

*Partial development*

Holmdahl, D. E. — a	V
Fautrez, J. C. — b	(5)J

*Implantation and Placentation*

Howorka, E. J. — a	M
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b Topogenesis

Leone, V. — a	(5)V
Waddington, C. H. — b	V
Battle, Miss H. I. — a	(5)I
Rogers, K. T. — a	I
Chuang, H. H. — a	J
Lehmann, F. E. und	
Nieuwkoop, P. D. — b	(5)J



Lombard, G. L. — a	(5)J	Boterenbrood, Miss E.:	
Lombard, G. L. — b	(5)J	Kremer, Miss A. and	
Mookerjee, S. — c	J	Nieuwkoop, P. D. — a	J
Okada, T. — b	J	Deuchar, Miss E. M. — a	J
Townes, Ph. L. — a	J	Engländer, H. — a	J
Buno, W. and		Gallera, J. — a	J
Franchi, C. M. — c	HV	Gallera, J. — c	J
Abercrombie, M. and		Gallera, J. — d	J
Bellairs, Mrs M. R. — a	L	Goodhart, C. B. — a	J
Hunt, E. L. — a	(5)L	Hama, T. — a	
Lutz, H. — a	L	Harrison, R. G. — a	J
Wolff, Et. C. — a	L	Harrison, R. G. — b	J
<i>Early development</i>		Horst-Rollhäuser, Mrs J. ter — a	J
Dollander, A. — a	J	Horst-Rollhäuser, Mrs J. ter — b	J
Pasquini, P. — a	(5)J	Nicholas, J. S. — d	J
Pesonen, S. — b	(5)J	Reyer, R. W. — b	J
Adamstone, F. B. — a	L	Rhodes, S. — a	J
Reyrolle, Miss J. — a	L	† Rotmann, E. — a	J
Nicholas, J. S. — a	M	Schenk, R. — b	J
<i>Gastrulation and formation of</i>		Schreiber, B. — a	J
<i>germ layers</i>		Spofford, W. R. — b	J
Devillers, Ch. — a	I	Spofford, W. R. — c	J
Trinkaus, J. P. — a	I	Töndury, G. — f	J
Nieuwkoop, P. D. — e	J	Trampusch, H. A. L. — a	(4)J
<i>Neurulation</i>		Trampusch, H. A. L. — b	J
Egmond, Miss M. T. C. van		Waddington, C. H. — a	J
and Nieuwkoop, P. D. — b	J	Yamada, T. — d	J
Ferreira, W. A. — a	J	Yntema, C. L. — a	J
Raunich, L. — c	J	Woerdeman, M. W. — b	HV
Wilens, Miss S. — a	J	Buno, W. — b	L
Woellwarth, C. v. — a	J	McKeehan, M.; Petzold, R. and	
<i>Formation of neural crest</i>		Weiss, P. A. — a	L
Newth, D. R. — c	I	Töndury, G. — g	L
Algard, F. T. — a	J	<i>Determination</i>	
Bodenstein, D. H. F. A. — a	J	Stefanelli, A. — a	V
Niu, M. C. and		Boné, E. and	
Twitty, V. C. — b	J	Vandebroek, G. — a	(5)J
Niu, M. C. and		Eyal-Giladi, Mrs H. — a	J
Twitty, V. C. — f	J	Hörstadius, S. — b	J
Stevens, L. C. — a	J	Mangold, O. and	
Saunders, J. W. — a	L	Waechter, Miss H. — b	J
<i>First larval development</i>		Moore, J. A. — a	J
<b>c Induction, determination, etc.</b>		Moore, J. A. — b	J
<i>Induction</i>		Pasteels, J. J. — a	J
Woerdeman, M. W. — c	V	Pisano, A. — c	J
Balinsky, B. I. — b	J	Raunich, L. — c	J
Balinsky, B. I. — c	J	Spofford, W. R. — a	J
Bodenstein, D. H. F. A. — a	J	Wang, Y. T. — b	J
		Woellwarth, C. v. — a	J
		Abercrombie, M. — b	L

*Regulation and organization*

Oppenheimer, Miss J. M. — a I

Benoit, J. A. A. — a J

Benoit, J. A. A. — b J

Cotronei, G.; Perri, T. and Urbani-Mistruzzi, Mrs L. — a J

Dalcq, A. M. with coworkers — b J

Devillers, Ch. — d J

Lombard, G. L. — a (5)J

Lombard, G. L. — b (5)J

Motomura, I. — a J

Nieuwkoop, P. D. and Toivonen, S. — c J

Planque, B. de — a J

Tseng, Miss M. P. — c J

Yamada, T. — b J

Abercrombie, M. and Bellairs, Mrs M. R. — a L

Amprino, R. M. — c L

Lutz, H. — b L

Boterenbrood, Miss E.; Kremer, Miss A. and Nieuwkoop, P. D. — a J

Deuchar, Miss E. M. — a J

Rose, S. M. — b (5)J

**d Development of parts of the organism**

*Head*

Hörstadius, S. — a J

Li, Miss S. C. — a J

Huber, W. and Wolff, Et. — a L

*Limb and wing*

Harrison, R. G. — a J

Ichikawa, M. — b J

Moulton, J. M. and Romer, A. S. — a J

O'Brien, J. P. — d J

Perri, T. — a J

Tschumi, P. — a (5)J

Bretscher, A. — b (5)L

Bretscher, A. — c L

Cairns, J. M. — c L

Saunders, J. W. — c L

Schué, Miss M. — b (4)L

Vigliani, F. — a M

*Tail*

Bijtel, Miss J. H. — a J

Farinella-Ferruzza, Mrs N. — a J

Passalacqua, Miss A. — a J

Sembratowa, Z. — a J

Sembratowa, Z. — b J

Spofford, W. R. — b J

Craig, Miss M. M. and Zwilling, E. — a L

*Branchial region*

Balinsky, B. I. — b J

**e Development of special organ systems**

*Skin*

**General subjects**

Niu, M. C. and Twitty, V. C. — e J

Pisano, A. — c J

Davidson, Miss P. and Hardy, Miss M. H. — b M

**Exo-skeleton**

Devillers, Ch. — c I

Newth, D. R. — b J

**Teeth**

Deth, J. H. M. G. van — d M

**Hair**

Chase, H. B. — b M

Davidson, Miss P. and Hardy, Miss M. H. — b M

Rawles, Miss E. — b M

**Feathers**

Cairns, J. M. — a L

Cairns, J. M. — b L

Davidson, Miss P. — c L

Rawles, Miss E. — a L

Steiner, H. — c L

**Pigment cells and patterns**

Dalton, H. C. — a J

Lehman, H. E. — a J

Niu, M. C. and Twitty, V. C. — a J

Niu, M. C. and Twitty, V. C. — d J

Rawles, Miss E. — a L

Saunders, J. W. — a L

Trinkaus, J. P. — b L

Willier, B. H. — b L

Chase, H. B. — b M

Rawles, Miss E. — b M

*Nervous system*

**General subjects**

Boeke, J. — a V

Hoadley, L. — b V

Stefanelli, A. — a V  
 Baffoni, G. — a J  
 Ferreira, W. A. — a J  
 Perry, J. H. — a J  
 Spofford, W. R. — d J  
 Hamburger, V. and  
     Levi-Montalcini, R. — a L  
 Hammond, W. S. — b L  
 Hoadley, L. — a L  
**Central nervous system**  
 Oppenheim, Miss J. M. — b I  
 Egmond, Miss M. T. C. van  
     and Nieuwkoop, P. D. — b J  
 Gyllensten, L. J. W. — c J  
 Lehmann, F. E. und  
     Nieuwkoop, P. D. — b (5)J  
 Hamburger, V. and  
     Levi-Montalcini, Miss R. — b L  
 Edgar, G. W. F. — a M  
*Brain*  
 Pflugfelder, O. — c V  
 Eakin, R. M.; Eaton, Miss N.;  
     Oldenborg, Miss E. and  
     Thurmond, W. — a J  
 Woellwarth, C. v. — a J  
 Filogamo, G. — a L  
 Harmark, W. — a L  
*Spinal cord*  
 Piatt, J. — a J  
 Hogue, Miss M. J. and  
     Williams, S. C. — a HV  
 Watterson, R. L. — b L  
 Watterson, R. L. — c L  
 Watterson, R. L. — e L  
 Wenger, B. S. — a L  
 Wenger, Mrs E. L. — a L  
**Accessory organs**  
**Ganglia**  
*Cephalic ganglia*  
 Fautrez, J. C. — a J  
*Spinal ganglia*  
 Guardabassi, A. and  
     Sacerdote, Miss M. — a J  
**Nerves**  
*Cephalic nerves*  
 Guardabassi, A. — b J  
 Guardabassi, A. — c J  
**Para- and sympathetic and intramural  
 nervous system**  
 Hammond, W. S. and  
     Yntema, C. L. — a L

*Special sense organs*  
**General subjects**  
 Trampusch, H. A. L. — b J  
**Nasal organ**  
*Eye and lens*  
 Balinsky, B. I. — c J  
 Guardabassi, A. — b J  
 Guardabassi, A. — c J  
 Reyer, R. W. — b J  
 Stone, L. S. — a J  
 Amprino, R. M. — b L  
 McKeehan, M.; Petzold, R. and  
     Weiss, P. A. — a L  
**Ear**  
 Bijtel, Miss J. H. — c J  
 Fautrez, J. C. — a J  
 Guardabassi, A. and  
     Sacerdote, Miss M. — a J  
 Harrison, R. G. — b J  
 Newth, D. R. — b J  
 Yntema, C. L. — a J  
**Skeleton**  
**General subjects**  
 Schreiber, B. — a J  
 Hale, L. J. — a L  
**Embryonic temporary skeleton**  
 Mookerjee, S. — a J  
 Töndury, G. — g L  
**Skull**  
 Claes, M. T. and  
     Vandebroek, G. — a (5)I  
 Devillers, Ch. — c I  
 Vandebroek, G. — j I  
 Li, Miss S. C. — a J  
 Gubbins, J. F. — a M  
**Truncal skeleton**  
 Masy, S. — a L  
**Muscular system**  
 Moulton, J. M. and  
     Romer, A. S. — a J  
 Amprino, R. M. — a L  
 Nicholas, J. S. — b M  
**Alimentary tract**  
**General subjects**  
 Okada, T. — a J  
 Tseng, Miss M. P. — b J  
 Tseng, Miss M. P. — c J  
**Mouth- and pharyngeal cavities**  
 Bellairs, Mrs M. R. — c L

Hamilton, H. L. and Schrier, Miss J. — b	L	Reinbold, R. — a	L
<b>Intestinal tract</b>		Stoll, R. C. — b	L
Tseng, Miss M. P. — a	J	Gaillard, P. J. — a	M
<i>Respiratory organs</i>		Hummel, Miss K. P. and Little, C. C. — a	M
<b>Lungs and larynx</b>		Orsini, Mrs M. W. — a	M
Wallmann, Miss S. — a	J	<b>Sex determination</b>	
<b>Air-bladder</b>		Vannini, E. — c	V
Winowska, Mrs J. — a	I	D'Ancona, U. — a	I
<i>Heart, vascular system and blood</i>		Yamamoto, T. — b	I
<b>General subjects</b>		Bruner, Miss J. A. — b	(6)J
Ferreira, W. A. and Gonzalez Marino, R. E. — b	J	Chang, C. Y. — a	(6)J
Stephan, Fr. — a	L	Fischberg, M. — a	J
<b>Heart</b>		Sabbadin, A. — a	J
Gallera, J. — e	L	Hampé, A.; Ostertag, Miss Y.; Pfleger, Miss D.; Salzgeber, Miss B.; Strudel, G.; Wolff, Mrs Em. and Wolff, Et. C.	— b L
<b>Vascular system</b>		Ostertag, Miss Y. and Wolff, Et. — a	(6)L
Sausser, G. — a	M	Pfleger, Miss D. and Wolff, Et. — a	(6)L
<b>Blood</b>		Reinbold, R. — a	L
Rhines, R. and Williams, R. G. — a	M	Strudel, G.; Wolff, Mme Em. and Wolff, Et. — b	(6)L
<i>Coelomic cavities and endothelia, lymphatic system and connective tissue</i>		Burns, R. K. — a	(6)M
<b>Coelomic cavities and endothelia</b>		<i>Endocrine glands</i>	
Kemp, N. E. — b	J	<b>General subjects</b>	
<b>Lymphatic system</b>		Blount, R. F. — c	M
Gyllensten, L. J. W. — b	M	<b>Hypophysis</b>	
<b>Connective tissue</b>		Blount, R. F. — a	J
Bodenstein, D. H. F. A. — a	J	Eakin, R. M.; Eaton, Miss N.; Oldenborg, Miss E. and Thurmond, W. — a	J
<i>Urogenital system and sex determination</i>		Eakin, R. M. and Harris, M. — b	J
<b>General subjects</b>		<b>Thymus</b>	
Steyn, W. J. — c	J	Hammond, W. S. — c	L
Frilley, M. and Raynaud, A. — a	(4/6)M	<b>Thyroid gland</b>	
Kerkhof, Miss A. M. — a	(6)M	Gaillard, P. J. — b	L
<b>Kidney and urinary ducts</b>		<b>Adrenals</b>	
Fraser, Miss E. A. — a	I	Dawson, A. B. — a	L
Bijtel, Miss J. H. — b	J	Kurkiewicz, T. — a	M
Cambar, R. — a	J	<b>f Histo- and cytogenesis</b>	
Haffen, Miss K. and Wolff, Et. — a	L	Bayley, S. T.; Hanson, E. J. and Randall, J. T. — b	V
Washington, Miss D. — a	L	Stefanelli, A. — a	V
<b>Gonads and genital tracts</b>		Lehman, H. E. — b	J
Fankhauser, G. — b	J	Muchmore, W. B. — a	J
Mangold, O. and Stärk, O. — a	J		
Sabbadin, A. — a	J		
Vannini, E. — e	J		

Niu, M. C. and  
 Twitty, V. C. — a, and c J  
 Niu, M. C. and  
 Twitty, V. C. — d and e J  
 Raunich, L. — d J  
 Schenk, R. — a (6)J  
 Töndury, G. — e J  
 Wszelaczyńska, Miss M. — a J  
 Hogue, Miss M. J. and  
 Williams, S. C. — a HV  
 Levi, G. L. — a HV  
 Levi, G. L. — b HV  
 Martin, Miss A. V. W. — a HV  
 Abercrombie, M. — b L  
 Abercrombie, M. — c L  
 Garber, Mrs B. and  
 Weiss, P. A. — a L  
 Rudnick, Miss D. — a L  
 Edgar, G. W. F. — a M  
 Howorka, E. J. — a M

8 *Growth and differentiation*

a **Growth**

Brien, P. — b B

Brien, P. — c B  
 Bodenstein, D. H. F. A. — b (6)D  
 Luther, W. — b (4)V  
 Goodhart, C. B. — c J  
 Wallmann, Miss S. — a J  
 Levi, G. L. — a HV  
 Clark, E. R. and  
 Williams, R. G. — a M  
 Vigliani, F. — a M

a/b **Growth and differentiation**

Bonner, J. T. — b Plants  
 Fankhauser, G. — c (6)J  
 Fankhauser, G. — d (6)J  
 Töndury, G. — e J

b **Differentiation**

Weisz, P. B. — a Protozoa  
 Cotronei, G.; Perri, T. and  
 Urbani-Mistruzzi, Mrs L. — a J  
 Okada, T. — a J  
 Waddington, C. H. — c J  
 Andres, G. and  
 Weiss, P. A. — a L  
 Hale, L. J. — a L

III. DEVELOPMENTAL PHYSIOLOGY  
 SUBDIVISION

- 1 *Theoretical problems*
- 2 *Methods and technics*
- 3 *General subjects (asexual development, etc.)*
- 4 *Initial development*
  - a Primordial germ cells
  - b Gameto-, ovo- and spermatogenesis
  - c Maturation
  - d Ovulation and oviposition
  - e Activation and fertilization
  - f Parthenogenesis
  - g General subjects
- 5 *Cleavage and mitosis*
  - a Cleavage
  - b Mitosis
- 6 *Further development of Invertebrates*
  - a General subjects, (complete development)
  - b Primitive development (including early development)
  - c Induction and determination
  - d Development of part of the organism
  - e Development of special organ systems  
 (Cf. general subdivision p. 120—122)

- f Histo- and cytochemistry
- g Serological studies
- 7 *Further development of Vertebrates*
  - a General investigations
    - 1 General subjects
    - 2 Complete development
    - 3 Later development
    - 4 Implantation and placentation
  - b Primitive development
    - 1 Early development
    - 2 Gastrulation
    - 2/3 Gastrulation and neurulation
    - 3 Neurulation
    - 4 Development of neural crest
  - c Induction and determination, etc.
    - 1 Induction
    - 2 Determination
    - 3 Regulation and organisation
  - d Development of parts of the organism
    - 1 Head
    - 2 Limb
  - e Development of special organ systems  
(Cf. general subdivision p. 120—122)
  - f Histo- and cytochemistry
  - g Immunological studies
- 8 *Growth and differentiation*
  - a Growth
    - a/b Growth and differentiation
    - b Differentiation
- 9 *Nutrition of embryo*

### CHARACTER OF INVESTIGATION

- (1) Metabolism and respiration
- (2) Cytochemistry
- (3) Physical properties
- (4) Physical treatment
- (5) Chemical treatment
- (6) Influence of hormones and vitamins

#### 1 *Theoretical problems*

Yamada, T. — c V  
 Woerdeman, M. W. — b HV

#### 2 *Methods and technics*

Johnson, M. W. and  
 Manhoff, L. J. — b I  
 Ubisch, L. v. — f J  
 Waechter, Miss H. — b J  
 Andres, G. and  
 Weiss, P. A. — a L

Johnson, M. W. and  
 Manhoff, L. J. — a L

#### 3 *General subjects* *(asexual development, etc.)*

Bonner, J. T. — a Plants  
 Wetmore, R. H. — a Plants  
 Wetmore, R. H. — b Plants  
 Sauser, G. — b EV + V  
 Herlant—Meewis, Mme H. — b C  
 Göszwald, K. — b D

Harvey, Mrs E. B. — b	G
Tracy, H. C. — b	I
Esposito Seu Margherita, Miss M. — a	J
Nicoletti, B. — a	J

#### 4 Initial development

##### a Primordial germ cells

Katakura, Y. — a	D
Vitaigliano, G. — a	D

##### b Gameto-, ovo- and spermatogenesis

Omodeo, P. — b	(2)C
Penners, A. — b	(2)C
Mulnard, J. — a	D
Urbani, E. — e	EV + V
Lison, L. and Pasteels, J. J. — a	(2)V
Roetheli, A. — a	I
Guillon, G. and Moricard, R. — a	J

##### c Maturation

Scott, A. C. — a	(5)C
Montalenti, G. — a	D
Vitaigliano, G. — a	D
Atlas, M. — a	J
Chih, C. S. and Moricard, R. — a	(6)M
Moricard, R. — b	(6)M

##### d Ovulation and oviposition

Atlas, M. — a	J
Smith, Miss F. W. — a	M

##### e Activation and fertilization

Metz, C. B. — a	(2)Protozoa
Metz, C. B. — c	(2)EV
Göszwald, K. — d	D
Colwin, A. L. and Colwin, Mrs L. H. — a	F
Dan, Mrs J. C. — a	G
Endo, Y. — a	G
Fleming, W. R. — a	(2)G
Holter, H. — b	(1)G
Immers, J. — a	(2)G
Immers, J. — b	(1)G
Ishikawa, M. and Sugiyama, M. — a	G
Lillie, R. S. — a	G

Lindhahl, P. E. — b	G
Lindvall, S. — a	(2)G
Metz, C. B. — b	(2)G
Monroy, A. and Monroy-Oddo, Mrs A. — a	(2)G

Monroy, A. and Runnström, J. A. M. — b	(2)G
Motomura, I. — c	G
Nakano, E. — c	(5)G
Runnström, J. A. M. — a	G
Tyler, A. — a	G
Vasseur, E. J. E. — a	(2)G
Whiteley, A. H. — a	(2)G
Wicklund, Miss E. — a	G
Yamamoto, T. — a	I
Austin, C. R. and Braden, A. W. H. — c	M
Chang, M. C. — a	M
Moricard, R. — c	M
Mossman, H. W. and Strauss, F. — c	M

##### f Parthenogenesis

Monterosso, B. — a	D
Ishikawa, M. and Sugiyama, M. — a	G
Shaver, J. R. — a	J
Shaver, J. R. — e	(2)J
Austin, C. R. and Braden, A. W. H. — c	M

##### g General subjects

Anders, G. — a	D
Stalfoort, Miss T. G. J. — a	(5)E
Gustafson, T. — b	(2)G
Lindhahl, P. E. — c	G
Lindhahl, P. E. — d	(5)G
Lindberg, N. O. H. — a	(1)G
Vakaet, L. C. — a	I
Briggs, R. W. — b	(5)J
Marchlewski, J. H. — a	L
Brøndsted, H. V. — b	M

#### 5 Cleavage and mitosis

##### a Cleavage

Zeuthen, E. — a	EV + V
Penners, A. — d	(4/5)D
Dan, K. — b	G
Kuno, M. — a	G
Scott, A. C. — c	(4)G

Gothie, Miss S. and  
Moricard, R. — b J  
Shaver, J. R. — a J  
Austin, C. R. and  
Braden, A. W. H. — c M  
Brøndsted, H. V. — b M  
Chang, M. C. — a M

**b Mitosis**

Zeuthen, E. — a EV + V  
O'Connor, R. J. — a (1)V  
Lison, L. and  
Pasteels, J. J. — a (2)V  
Overton, Miss J. and  
Weiss, P. A. — a J

**6 Further development of  
Invertebrates****a General subjects, complete  
development**

Cigada, Miss M. — a EV  
Holtfreter, J. K. F. — b EV  
Ranzi, S. — a (2)EV  
Tosi, Miss L. — a EV  
Trampusch, H. A. L. — c EV  
Vandebroek, G.  
and coworkers — n (2)EV  
Annez, Ch. — a C  
Bodenstein, D. H. F. A. — c (1)D  
Fautrez-Firlefyn Mrs N. J. — a D  
Fitzgerald, L. R. — a (1)D  
Hama, T. — b (2)D  
Henke, K. mit Mitarbeitern — a D  
Monterosso, B. — a D  
Mori, H. — a (5)D  
Mulnard, J. — a D  
Seidel, F. — b D  
Tuft, P. H. — a (1)D  
Ulrich, H. — b D  
Yao, T. — a (2)D  
Borei, H. — a (1)G  
Harvey, Mrs E. B. — b G  
Monné, L. — a G  
Perlmann, H. P. — a (2)G  
Runnström, J. A. M. — a G  
Colwin, A. L. — c (5)H

**b Primitive development (in-  
cluding early development)**

Scott, A. C. — b (5)EV  
Tyler, A. — b EV  
Kraïnska, Mrs M. K. — a (2)D

Nakane, T. — a (2)D  
De Nicola, M. — b D  
Ulrich, H. — a D  
Arkel, G. A. v.; Broek, Miss  
E. v. d.; Duyker-de Beer, Mrs  
A. S.; Heesch, Miss W. H. T.  
v.; Kok, J. C. N.; Kuiper,  
J. W.; Loo, Miss R. P. v.;  
Nijenhuis, E. D.; Smit, Miss  
J. E. H. and Utrecht, W. L. v..  
— a (5)E

Clement, A. C. — a (5)E  
Raven, Chr. P. — b (5)E  
Spronk, N. — a (5)E  
Stalfoort, Miss T. G. J. — a (5)E  
Veen, H. G. v. d. — a (5)E  
Gustafson, T. — a (5)G  
Hultin, J. M. T. — a (1)G  
Jaffe, L. F. — a (2)G  
De Nicola, M. — a G  
Ycas, M. — a (1)G

**c Induction and determination**

Citterio, P. — a EV  
Ulrich, H. — a D  
Holter, H. — a G  
Hörstadius, S. — a G  
Lindahl, P. E. — c G  
Lindahl, P. E. — d (5)G

**e Development of special organ  
systems**

*Skin*  
Rosin, S. — a D  
*Sense organs*  
Minganti, A. — c H  
*Alimentary tract*  
Leshner, S. — a (2)D  
*Genital system*  
Kugler, O. E. — a (2)D  
Kugler, O. E. — b (2)D  
*Endocrine glands*  
Chow, P. S.; Chu, J.; Kiang,  
H. M. and Tsai, Miss N. — a D

**f Histo- and cytochemistry**

Tosi, Miss L. — a EV  
Urbani, E. — f EV  
Vandebroek, G.  
and coworkers — n EV  
Kraïnska, Mrs M. K. — a D  
Nakane, T. — a D



- Lee, H. J. v. d. — a E  
 Gustafson, T. — a (5)G  
 Monné, L. — a G  
 De Nicola, M. — b G  
 Swedmark, B. G. — a (1)G  
 Minganti, A. — c H
- g Serological studies**  
 Perlmann, H. P. — a (2)G
- 7 Further development of Vertebrates**
- a General investigations**
- General subjects*  
 Batty, Th.; Tracy, C. H. and Winblad, J. — a I  
 Baxter, E. W. — a I  
 Datkowna, H. — a (4)I  
 Briggs, R. W.; Green, E. U. and King, T. — a (2)J  
 Faber, J. — b J  
 Gregg, J. R. — a (1)J  
 Mookerjee, S. — b (5)J  
 Eayrs, J. T. — b (6)M  
 Reynolds, S. R. M. — a M  
 Sinclair, J. G. — c (5)M
- Complete development*  
 Cigada, Miss M. — a (1)V  
 Goodhart, C. B. — d V  
 Holtfreter, J. K. F. — b (2)V  
 Lison, L. and Pasteels, J. J. — a (2)V  
 Ranzi, S. — a (2)V  
 Stefanelli, A. — d (1)V  
 Tosi, Miss L. — a (1)V  
 Konopacka, Mrs B. — a (2)I  
 Stefanelli, A. — e (2)I  
 Tracy, H. C. — c I  
 Urbani, E. — a (1)I  
 Winblad, J. — b (5)I  
 Battaglia, B. — a J  
 Berg, W. E.; Eakin, R. M. and Kutsky, P. B. — a (1)J  
 Chuang, H. H. — b (5)J  
 Gennaro Jr, J. F. and Ridley, Miss E. J. — a J  
 Hall, T. S. — a (5)J  
 Krugelis, Miss E. J. — a (3)J  
 Kutsky, P. B. — a (1)J  
 Løvtrup, S. — a J
- Moog, F. and Wenger, Mrs E. L. — c (1)J  
 Moore, Mrs B. C. — a J  
 Thomason, Miss D. — b (1)J  
 Urbani, E. — b (1)J  
 Urbani-Mistruzzi, Mrs L. — c (2)J  
 Zeuthen, E. — b (2)J  
 Alvarez Gutiérrez, Miss J.; Buno, W. and Gonzalez Marino, R. E. — d (1)HV  
 Fitzgerald, L. R. — b (1)HV  
 Henke, K. mit Mitarbeitern — a L  
 Zwilling, E. — b (1)L  
 Csapó, A. — a M  
 Hammond, W. S. and Yntema, C. L. — d (5)M  
 Hillemann, H. H. — a (2)M  
 Seidel, F. — a M
- Later development*  
 Moog, F. — a (1)V  
 Castigli-Pitotti, Mrs M. — c (1)I  
 Karczmar, A. G. — c (5)J  
 Hooker, D. — a M  
 Pesonen, S. — c (5)M  
 Snyder, F. F. — a (1)M
- Implantation and placentation*  
 Dankmeijer, J. and Heyn, C. B. — a M  
 Flexner, L. B. — b M  
 Mather, W. B. — a M  
 Sinclair, J. C. — c M
- b Primitive development**  
 Leone, V. — a (5)V  
 Hori, R. — a (1)I  
 Nakano, E. — b (5)I  
 Bautzmann, H. — a J  
 Krugelis, Miss E. J. — b (3)J  
 Lallier, R. A. — a (5)J  
 Mookerjee, S. — c J  
 Reverberi, G. — a J  
 Shaver, J. R. — c J  
 Steinert, M. — a (1)J  
 Townes, Ph. L. — a J  
 Shaver, J. R. — d L  
 Božić, B. — a M
- Early development*  
 Nakano, E. — a (1)I  
 Brachet, J. L. A. and Pasteels, J. J. — d (2)J

Ikushima, N. — a	(3)J
Ikushima, N. — b	(1)J
Masuda, H. — a	(2)J
Osawa, S. — a	(2)J
Osawa, S. and Yamada, T. — b	(2)J
Rosenbaum, R. M. — a	(2)J
Rostand, J. — d	(4)J
Takata, K. — a	(2)J
Takata, K. and Yamada, T. — b	J
Remotti, E. — a	L
Alden, R. H. — a	M
Austin, C. R. and Braden, A. W. H. — c	M
Dalcq, A. M. with coworkers — a	M

*Gastrulation*

Castigli Pitotti, Mrs M. — a	I
Berge, J. H. ten and Bezem, J. J. — a	(5)J
Fitzgerald, L. R. — b	(1)HV
Mossman, H. W. — b	M

*Gastrulation and neurulation*

Brachet, J. L. A. — a	J
Brachet, J. L. A. — b	(5)J
Steinert, M. and Thomas, R. — b	(5)J

*Neurulation*

Newth, D. R. — d	(3)J
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*Development of neural crest*

Niu, M. C. and Twitty, V. C. — f	J
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**c Induction and determination, etc.**

Lallier, R. A. — b	J
Liao, Y. K. — a	J
Moog, F. and Wenger, Mrs E. L. — b	J
Reverberi, G. — a	J
Thomason, Miss D. — a	J

*Induction*

Hama, T. — a	(2)J
Kuusi, Miss T. — a	J
Nicholas, J. S. — d	J
Niu, M. C. and Twitty, V. C. — e	J
† Rotmann, E. — a	J
Toivonen, S. — a	J

Trampusch, H. A. L. — a	(4)J
Yamada, T. — a	J
Yamada, T. — d	J
Deth, J. H. M. G. van — c	L
McKeehan, M., Petzold, R. and Weiss, P. A. — a	L
Gothie, Miss S. and Morocard, R. — a	(2)M

*Determination*

Citterio, P. — a	V
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*Regulation and organisation*

Yamada, T. — b	J
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**d Development of parts of the organism***Head*

Blumer, Miss C. and Weiss, P. A. — a	J
Rossetti, F. and P. A. Weiss — a	J

*Limb*

O'Brien, J. P. — d	J
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**e Development of special organ systems***Skin*

<b>General subjects</b>	
Remotti, E. — b	V
Eayrs, J. T. — a	M

**Teeth**

Zaaijer, Miss J. J. P. — a	M
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**Hair**

Hardy, Miss M. H. — c	M
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**Feathers**

Saunders, J. W. — b	L
Willier, B. H. — a	(2)L

**Mammae**

Frilley, M. and Raynaud, A. — b	M
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**Pigment cells and patterns**

Mori, Y. — a	I
Nagatsu, R. — a	I
Baker, Mrs A. S. — c	J
King, R. — a	(5)J
Lehman, H. E. — a	J
Niu, M. C. and Twitty, V. C. — a, c and f	J
Markert, C. L. — a	(5)L

Saunders, J. W. — b	L	<i>Skeleton</i>	
Saunders, J. W. — d	L	<b>General subjects</b>	
Trinkaus, J. P. — b	L	Batty, Th. — c	I
Willier, B. H. — a	(2)L	Hale, L. J. — b	L
Willier, B. H. — b	L	Hogewoning, C. H. — a and b	(6)L
Willier, B. H. — c	(6)L	<b>Notochord</b>	
		Mookerjee, S. — b	(5)J
<i>Nervous system</i>		<i>Muscular system</i>	
<b>General subjects</b>		<b>General subjects</b>	
Tracy, H. C. — b	I	Arosio, G. — a	V
Lee, G. M. and		Orlandi, Miss A. — a	V
Roofe, P. G. — a	J	Batty, Th. — c	I
Leshner, S. — b	(1)J	Herrmann, H.; Neukom, B. J. — a	
Hoadley, L. — a	L	Schneider, M. J. — a, b and c	L
Strudel, G. — a	L	Herrmann, H.; Lubchenco, L., McKenzie, J., Rothfels, U.	— e and f L
<b>Central nervous system</b>		Boell, E. J. and	
Boell, E. J. and		Shen, S. C. — c	(1)M
Shen, S. C. — a	J	Nicholas, J. S. — c	M
Boell, E. J. and		Rollhäuser, H. — b	M
Shen, S. C. — b	(1)J	Villafranca, G. W. — a	(2)M
<i>Brain</i>		Wendt, G. G. — a	M
Pflugfelder, O. — c	V	<i>Alimentary tract</i>	
Blumer, Miss C. and		<b>General subjects</b>	
Weiss, P. A. — a	J	Batty, Th. — b	I
Rossetti, F. and		<b>Intestinal tract</b>	
P. A. Weiss — a	J	Wierda, J. L. — a	M
Flexner, L. B. — a and b	M	<b>Liver</b>	
<i>Spinal cord</i>		Armstrong, P. B. — a	J
Holtzer, H. and		Hultin, J. M. T. — b	L
Weiss, P. A. — a	J	Cohen, S. and	
Watterson, R. L. — d	L	DeMetry, J. — a	M
Watterson, R. L. — f	(6)L	Flexner, L. B. — a	M
Wenger, B. S. — b	L	Flexner, L. B. — b	M
<b>Accessory organs</b>		<i>Heart, vascular system and blood</i>	
<i>Paraphysis</i>		<b>General subjects</b>	
Ariëns Kappers, J. — a	J	Remotti, E. — b	V
<i>Parietal organ</i>		Remotti, E. — c	V
Oksche, A. A. — b	J	Batty, Th. — c	I
<b>Para- and sympathetic nervous system</b>		Reynolds, S. R. M. — b	M
Kramer, T. C. — a	L	<b>Heart</b>	
<i>Special sense organs</i>		Grodzinski, Z. — b	I
<b>Eye and lens</b>		Sippel, T. O. — a	J
Cate, G. ten — a	(2)V	Barry, A. — a	HV
Cate, G. ten — b	(1)V	Patten, B. M. — a	HV
Stone, L. S. — a	J	Kramer, T. C. — a	L
Deith, J. H. M. G. van — c	L	<b>Blood</b>	
Herrmann, H.; Lubchenco, L.; McKenzie, J., Rothfels, U.	— f L	Sinha, T. P. and	
McKeehan, M.; Petzold, R. and		Windle, W. F. — a	M
Weiss, P. A. — a	L		
Eayrs, J. T. — a	M		

*Coelomic cavities and endothelia, lymphatic system and connective tissue***Connective tissue**

Rollhäuser, H. — a M

*Urogenital system and sex determination***General subjects**

Kugler, O. E. — a (2)I

Bruner, Miss J. A. — a M

Courrier, R. — a M

Frappier, J. — a (6)M

Frilley, M. and

Raynaud, A. — a (4/6)M

Jost, A. D. — a M

Mossman, H. W. — b M

Sinclair, J. G. — c (5)M

Young, W. C. — a (6)M

Young, W. C. — b M

**Kidney and urinary ducts**

Bijtel, Miss J. H. — b J

Washington, Miss D. — a L

**Gonads and genital tracts and accessory glands**

Hampé, A. and

Wolff, Et. — a (6)L

Huijbers, Miss M. M. — a L

Barakona, Miss M.; Bruzzone, S.;

Iglesias, R.; Lipschutz, A. and

Mardones, Miss E. — a and b

(6)M

Corner, G. W. — c M

Csapó, A. — a M

Godet, R. — a (6)M

Hummel, Miss K. P. and

Little, C. C. — a M

Raynaud, A. — b M

Reynolds, S. R. M. — c M

**Sex determination**

Gallien, L. — a (6)J

Padoa, E. — a J

Deth, J. H. M. G. van — a HV

Hampé, A.; Ostertag, Miss Y.;

Pfleger, Miss D.; Salzgeber,

Miss B.; Strudel, G.; Wolff,

Mrs Em. et Wolff, Et. C. — b L

Hampé, A. and

Wolff, Et. — a (6)L

Pfleger, Miss D. and

Wolff, Et. — a L

Salzgeber, Miss B. and

Wolff, Et. — a (4)L

Strudel, G.; Wolff, Mme Em.

and Wolff, Et. — b (6)L

Wolff, Mrs Em. and

Wolff, Et. C. — a (6)L

Burns, R. K. — a (6)M

*Endocrine glands***General subjects**

Langman, J. — a V

Blount, R. F. — c M

Jost, A. D. — a M

**Hypophysis**

Blount, R. F. — a J

Barakona, Miss M.; Bruzzone, S.;

Iglesias, R.; Lipschutz, A. and

Mardones, Miss E.

— a and b (6)M

**Thyroid gland**

Gaillard, P. J. — b L

**Adrenals**

Dawson, A. B. — a L

**Pancreas**

Miahle, P. — a HV

**f Histo- and cytochemistry**

Cate, G. ten — b V

O'Connor, R. J. — a V

Orlandi, Miss A. — a V

Tosi, Miss L. — a V

Urbani, E. — f V

Woerdeman, M. W. — c V

Castigli Pitotti, Mrs M. — c I

Konopacka, Mrs B. — a I

Brachet, J. L. A. — b J

Gennaro, Jr, J. F. and

Ridley, Miss E. J. — a J

King, R. — a (5)J

Lehman, H. E. — a and b J

Løvtrup, S. — a J

Osawa, S. and Yamada, T. — b J

Steinert, M. and

Thomas, R. — a J

Steinert, M. and

Thomas, R. — b J

Takata, K. — a J

Takata, K. and Yamada, T. — b J

Thomason, Miss D. — b J

Alvarez Gutiérrez, Miss J.;

Buno, W. and Gonzalez

Marino, R. E. — d HV

- Davies, H. G. and Walker, P. M. B. — a HV
- Herrmann, H.; Neukom, B. J. and Schneider, M. J. — a L
- Herrmann, H.; Neukom, B. J. and Schneider, M. J. — b L
- Herrmann, H.; Neukom, B. J. and Schneider, M. J. — c L
- Herrmann, H.; Lubchenco, L.; McKenzie, J.; Rothfels, U. — e L
- Markert, C. L. — a L
- Shaver, J. R. — d L
- Glimstedt, G. and Håkansson, R. — b M
- Grobstein, C. — a M
- Hintzsche, E. — a M
- g Immunological studies**
- Cate, G. ten — a V
- Brachet, J. L. A. — a J
- Clayton, Mrs R. M. — a J
- Krauss, M. — b J
- Shaver, J. R. — b J
- Ebert, J. D. — a L
- Hoffman, H. — a L
- Johnson, I. S. — a and b L
- Nace, G. W. and Schechtman, A. M. — a L
- Petzold, R. and Weiss, P. A. — b L
- Schechtman, A. M. and Schjeide, O. A. — b L
- Shaver, J. R. — f L
- Brambell, F. W. R. — a M
- Hemmings, W. A. — a M
- Henderson, Miss M. — a M
- Windle, W. F. — f M
- 8 Growth and differentiation**
- a Growth**
- Oksche, A. A. — a J
- Krauss, M. — a L
- Zwilling, E. — c (5/6)L
- McCafferty, R. E. — b (5)M
- Moll, J. — a M
- Wierda, J. L. — a M
- a/b Growth and differentiation**
- Holtzer, H. and Weiss, P. A. — b V
- Pflugfelder, O. — c V
- Devillers, Ch. and Skreb, N. — b I
- Trinkaus, J. P. — c I
- Chiakulas, J. — a J
- Faber, J. — b J
- Overton, Miss J. and Weiss, P. A. — a J
- Rappaport, R. — a J
- Fischer, Miss I. and Weiss, P. A. — a L
- Petzold, R. and Weiss, P. A. — b L
- Newton, B. L. — a M
- Smith, Miss F. W. — b (6)M
- Wendt, G. G. — a M
- b Differentiation**
- Cate, G. ten — b (1)V
- Moog, F. — a V
- Batty, Th.; Tracy, C. H. and Winblad, J. — a I
- Batty, Th. — b and c I
- Mori, Y. — a I
- Tracy, H. C. — b I
- Tracy, H. C. — c I
- Clayton, Mrs R. M. — a J
- Krugelis, Miss E. J. — a J
- Krugelis, Miss E. J. — b J
- Lee, G. M. and Roofe, P. G. — a J
- Wenger, B. S. — b L
- Boell, E. J. and Shen, S. C. — c (1)M
- 9 Nutrition of embryo**
- Vachon, M. — a D
- Devillers, Ch. and Skreb, N. — b I
- Trinkaus, J. P. — c I
- Brachet, J. L. A. — b J
- Faber, J. — b J
- Kemp, N. E. — a J
- Reverberi, G. — a J
- Steinert, M. and Thomas, R. — b J
- Grodzinski, Z. — a HV
- Atlas, M. — b L
- Ebert, J. D. — b L
- Herrmann, H.; Lubchenco, L.; McKenzie, J.; Rothfels, U. — f (5)L
- Spratt Jr, N. T. — a L
- Witschi, E. — c L

## IV. DEVELOPMENT AND GENETICS

### SUBDIVISION

- 1 *Theoretical problems and general questions*
  - a Theoretical problems
  - b General questions
- 2 *General genetical studies*
  - a General studies
  - b Heteroploidy
  - c Hybridization
  - d Chimaera
  - e Merogony
- 3 *Analysis of influence of special genes and mutants*
  - a Special genes and mutants
  - b Lethal factors

### CHARACTER OF INVESTIGATION

- (1) Metabolism and respiration
- (2) Cytochemistry
- (4) Physical treatment
- (6) Influence of hormones and vitamins

1 <i>Theoretical problems and general questions</i>		Fankhauser, G. — c	(6)J
		Fankhauser, G. — d	J
		Fankhauser, G. and	
		Humphrey, R. R. — e	J
a <b>Theoretical problems</b>		Fischberg, M. — a	J
Henke, K. mit		Humphrey, R. R. — a	J
Mitarbeitern — a	EV + V	Humphrey, R. R. — b	J
Ubisch, L. v. — d	EV + V	Moore, Mrs B. C. — a	J
b <b>General questions</b>		Wszelaczyńska, Miss M. — a	J
		Beatty, R. A. and	
		Fischberg, M. — a	M
2 <i>General genetical studies</i>			
a <b>General studies</b>		c <b>Hybridization</b>	
Weisz, P. B. — b	Protozoa	Moore, A. R. — a	G
Hama, T. — b	D	Minganti, A. — a	H
Katakura, Y. — b	D	Minganti, A. — b	H
Reeve, E. C. R. and		Ubisch, L. v. — f	I
Robertson, F. W. — a	D	Brachet, J. L. A. — c	J
Sigot, A. — a	D	Callan, H. G. — a	J
Cei, J. M. — a	J	Gregg, J. R. — a	(1)J
Grüneberg, H. — a	M	Moore, J. A. — a	J
Sinclair, J. G. — b	M	Moore, J. A. — b	J
b <b>Heteroploidy</b>		Perri, T. — c	J
Lepori, N. G. — a	C	Pisano, A. — a	J
Häggqvist, G. — a	V	Pisano, A. — d	J
Briggs, R. W. — c	J		
Douglas, R. I. — a	J	d <b>Chimaera</b>	
Fankhauser, G. — a	(4)J	Baltzer, F. — a	J
Fankhauser, G. — b	J	Fraser, A. S. — b	M

**e Merogony**

Harvey, Mrs E. B. — a

Hadorn, E. — b

**3 Analysis of influence of special genes and mutants****a Special genes and mutants**

Anders, G. — a

Boterenbrood, Miss E.;

Nijenhuis, L. E.; Oppenoorth,

F. J. and Spronk, N. — b

Caspari, E. — a

Castiglioni, M. C. — a

Hartung, E. W. — a

Henke, K. mit Mitarbeitern — a

Kühn, A. — b

Kühn, A. — c

Rosin, S. — a

Sobels, F. H. — a

Waddington, C. H. — d

Larambergue, M. de — c

G

J

D

D

D

D

D

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E

Baker, Mrs A. S. — a

Dalton, H. C. — a

Rostand, J. — b

Cairns, J. M. — b

Henke, K. mit Mitarbeitern — a

Landauer, W. — a

Carter, T. C. — a

Caspari, E. — b

Chase, H. B. — a

Clayton, Mrs R. M. — b

Fraser, A. S. — a

Fraser, A. S. — c

Grüneberg, H. — a

Grüneberg, H. — b

Phillips, R. J. S. — a

Truslove, Miss G. M. — a

**b Lethal factors**

Hadorn, E. — d

Poulson, D. F. — c

Sobels, F. H. — b

Sobels, F. H. — c

(2)J

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D

**V. DEVELOPMENT AND PATHOLOGY****SUBDIVISION****1 Theoretical problems and general questions****2 General investigations in pathological development****a General subjects****b Relation between host and graft****c/d Pathological influences of chemical and physical treatment****e Teratology****3 Development of special malformations and pathological development of special organs****a Development of special malformations****b Pathological development of special organs**

(Cf. general subdivision p. 120—122)

**4 Tumours****1 Theoretical problems and general questions****2 General investigations in pathological development****a General subjects**

Geigy, R. — c

Jones, B. M. — a

Brandt, W. — b

Rose, S. M. — b

Witschi, E. — a

D

D

J

J

J

Fischer, Miss I. and

Weiss, P. A. — a

Gruenwald, P. — b

Hertig, A. T. and Rock, J. — a

Latimer, H. B. — a

Töndury, G. — d

L

M

M

M

M

**b Relation between host and graft**

Eakin, R. M. and

Harris, M. — b

Waechter, Miss H. — b

Fraser, A. S. — b

J

J

M

**c/d Pathological influences of  
chemical and physical  
treatment**

Hubl, H. — b	C
Mori, H. — a	D
Luther, W. — b	V
Battle, Miss H. I. — a	I
Green, Mrs E. U. — b	J
Holtfreter, J. K. F. — a	J
McCallion, D. J. — a	J
Bagiński, S. and coworkers — b	L
Gallera, J. — b	L
Gruenwald, P. — a	L
Herrmann, H.; Lubchenco, L.; McKenzie, J.; Rothfels, U.	— f
Hunt, E. L. — a	L
Zwilling, E. — a	L
Carter, T. C. and Waddington, C. H. — b	M
Hammond, W. S. and Yntema, C. L. — d	M
Hettig, R. A. — a	M
McCafferty, R. E. — b	M
Robertson, G. G. — b	M
Sinclair, J. G. — c	M
Windle, W. F. — f	M

**e Teratology**

Omodeo, P. with students — a	C
Stoll, R. C. — a	V
Lehmann, F. E. — f	J
Landauer, W. — b	L
Wolff, Et. C. — a	L
Bloomingle, Mme B. — a	M
Desclaux, P. — b	M
Giroud, A. — b	M
Giroud, A. — c	M
Morlon, Miss C. — a	M

**3 Development of special  
malformations and patho-  
logical development of  
special organs**

**a Development of special  
malformations**

Brandt, W. — a	J
Bretscher, A. — a	L
Caspari, E. — b	M
Corner, G. W. — b	M

Lelièvre, A. — a	M
Lewis, F. Th. — b	M
Shaner, R. F. — c	M
Theiler, K. — a	M
Töndury, G. — a	M

**b Pathological development of  
special organs**

Geigy, R. — b	D
Kloft, W. — b	D
<i>Nervous system</i>	
Patten, B. M. — b	M
<i>Skeleton</i>	
Theiler, K. — b	V
<i>Heart and vascular system</i>	
Barry, A. — a	HV
Patten, B. M. — a	HV
Horn, E. C. — d	L
Johnson, M. W. — c	L
Stephan, Fr. — b	L
Collister, Miss R. M.;	
Dankmeijer, J. and	
Snellen, H. A. — a	M
Reis, R. H. — a	M
Shaner, R. F. — a	M
Shaner, R. F. — b	M
<i>Genital system</i>	
Hummel, Miss K. P. and	
Little, C. C. — a	M
<i>Hypophysis</i>	
Blount, R. F. — b	J
<b>4 Tumours</b>	
Pflugfelder, O. — b	EV + V
Hubl, H. — a	C
Barigozzi, C. — b	D
Hartung, E. W. — a	D
Luther, W. — b	V
Aloisi, Miss G. — a	J
Goodhart, C. B. — c	J
O'Brien, J. P. — a	J
O'Brien, J. P. — b	J
Spirito, A. — a	J
Tweedell, K. S. — a	J
Hamburger, V. and	
Levi-Montalcini, Miss R. — b	L
Barigozzi, C. — a	M
Galinski, I. and	
Newton, B. L. — a	M
Giroud, A. — d	M
Newton, B. L. — b	M



## VI. REGENERATION

### SUBDIVISION

- 1 *Theoretical problems and general questions*
  - a Theoretical problems
  - b General questions
- 2 *General investigations, including total regeneration*
- 3 *Partial regeneration*
  - a General subjects
  - b Tail regeneration
  - c Limb regeneration
  - d Regeneration of special organ systems  
(Cf. general subdivision p. 120—122)

### CHARACTER OF INVESTIGATION

- (4) Physical treatment
- (5) Chemical treatment

#### 1 *Theoretical problems and general questions*

##### a *Theoretical problems*

Brøndsted, H. V. — a EV  
Perry, J. H. — c M

##### b *General questions*

Herlant-Meewis, Mme H. — d C  
Chiakulas, J. — a J  
Goodhart, C. B. — c J  
Heath, H. D. — a J  
Masuda, H. — b J  
Rose, S. M. — a J  
Trampusch, H. A. L. — e J

#### 2 *General investigations, including total regeneration*

Brien, P. et  
Herlant, Mme H. — a EV  
Trampusch, H. A. L. — c EV  
Herlant-Meewis, Mme H. — f A  
Lehmann, F. E. und  
Tardent, P. — e B  
Singer, Miss J. — a B  
Dubois, Miss F. and  
Wolff, Et. C. — a C  
Dubois, Miss F.; Lender, Th.  
and Wolff, Et. C. — c C  
Herlant-Meewis, Mme H. — d C  
Hubl, H. — b (5)C  
Penners, A. — a C  
Penners, A. — c (5)C

Vannini, E. — d C  
Butler, E. G. — c H  
Woerdeman, M. W. — c V  
Hiller, S.; Krotkiewicz, T. and  
Wiskont, E. H. — a J  
Luther, W. — a J  
McCallion, D. J. — a J  
Raunich, L. — b J  
Schué, Miss M. — a J  
Trampusch, H. A. L. — d J  
Brøndsted, H. V. — a A + C  
Schmirler, H. — a C  
Herlant-Meewis, Mme H. — a C  
Herlant-Meewis, Mme H. — b C  
Herlant-Meewis, Mme H. — c C

#### 3 *Partial regeneration*

##### a *General subjectes*

Gontcharoff, Miss M. — a C  
Vachon, M. — a D

##### b *Tail regeneration*

Lehmann, F. E. und  
Mitarbeitern — c (5)J  
Raunich, L. — b J  
Russo, Miss E. and  
Weiss, P. A. — a J

##### c *Limb regeneration*

Butler, E. G. — a J  
Butler, E. G. — b J  
Dent, J. N. — a J  
Hay, E. D. — a J

Heath, H. D. — a	J	Edds Jr, M. V. — b	V
Karczmar, A. G., — a	J	Leghissa, S. and	
Karczmar, A. G. — b	(5)J	Pasquini, P. — d	(5)J
O'Brien, J. P. — c	J	Singer, M. — b	J
Rose, S. M. — a	J	Leghissa, S. — e	M
Rose, S. M. — c	J	<i>Eye and lens</i>	
† Rotmann, E. — b	J	Lender, Th. and	
Singer, M. — a	J	Wolff, Et. C. — a	C
Singer, M. — b	J	Hasegawa, M. — a	I
Yntema, C. L. — b	J	Hasegawa, M. and Sato, T. — c	I
<b>d Regeneration of special   organs</b>		Sato, T. — a	J
<i>Skin</i>		Stone, L. S. — a	J
Kühn, A. — a	D	Amprino, R. M. — c	L
Hunt, E. L. — b	(4/5)J	Hasegawa, M. and Sato, T. — b	J
<i>Nervous system (general sub-   jects, central nervous system and   nerves)</i>		Horn, E. C. — a	J
Stefanelli, A. — c	V	Ichikawa, M. — c	J
Boeke, J. — a	V	Pasquini, P. — a	J
Thermes, G. — a	V	Reyer, R. W. — a	J
Baffoni, G. — b	K	Stone, L. S. — a	J
Campenhout, E. van — b	L	Woerdeman, M. W. — a	HV
Chambers, W. W. and		<i>Skeleton</i>	
Windle, W. F. — a	M	Hadorn, E. — a	J
Liu, J. C.; Windle, W. F.		Kocher, W. — a	J
and coworkers — a	M	Mapp, F. E. — a	J
Perry, J. H. — c	M	<i>Liver</i>	
Edds Jr, M. V. — a	V	Wilson, J. W. — a	V
		<i>Gonad</i>	
		Herlant-Meewis, Mme H. — e	C
		Mossman, H. W. — a	M

## VII. METAMORPHOSIS

## SUBDIVISION

- 1 *Theoretical problems and general questions*
- 2 *General investigations*
  - a General subjects
  - b Hormones and metamorphosis
  - c Metamorphosis of part of the organism
  - d Metamorphosis of special organ systems  
(Cf. general subdivision p. 120—122)

## CHARACTER OF INVESTIGATION

- (5) Chemical treatment

*1 Theoretical problems and  
general questions*

- Risler, H. — a D  
Castigli Pitotti, Mrs M. — b J  
Cei, J. M. — a J

*2 General investigations*

**a General subjects**

- Herlant-Meewis, Mme H. — c C  
Bonde, C. von — a D  
Göszwald, K. — a D  
Henke, K. mit Mitarbeitern — a D  
Kloft, W. — a D  
Marlier, G. — a D  
Monterosso, B. — a D  
Piepho, H. — a D  
Yao, T. — a D  
Okazaki, Miss K. — a G  
Bailey, J. R. and  
Horn, E. C. — a I  
Baxter, E. W. — a I  
Ubisch, L. v., — e I  
Dent, J. N. — b J  
Gennaro Jr, J. F. and  
Ridley, Miss E. J. — b J  
Gennaro Jr, J. F.; Goodman, D. B.  
and Wirth, Miss P. — c J  
Gennaro Jr, J. F. and  
Goodman, D. B. — e J  
Leghissa, S. and  
Pasquini, P. — d (5)J  
Stuchly, Z. — a J

**b Hormones and metamorphosis**

- Bodenstein, D. H. F. A. — b D  
Geigy, R. — a D  
Ichikawa, M.  
with co-workers — a D  
Pflugfelder, O. — a D  
Hartwig, H. — a V  
Ber, A. and Orłowski, A. — a J  
Delsol, M. — a J  
Fankhauser, G. — d J

- Leghissa, S. — f J  
Padoa, E. — b J  
Suomalainen, H. and  
Toivonen, S. — a J

**c Metamorphosis of part of the  
organism**

- Gennaro Jr, J. F. and  
Wirth, Miss P. — d J  
Newth, D. R. — e J

**d Metamorphosis of special  
organ systems**

*Skin (general subjects and  
pigment pattern)*

- Schwinck, Miss I. — a D  
Baker, Mrs A. S. — b J  
Cordier, J. — a J  
Faber, J. — c J

*Nervous system*

- Rossetti, F. and  
Weiss, P. A. — a J  
Stefanelli, A. — b J

*Sense organs (ear)*

- Newth, D. R. — b J  
Witschi, E. — b J

*Skeleton (general subjects and  
skull)*

- Anderson, Miss I. L. — a J  
Horn, E. C. — c J  
Sedra, Shokralla, N. — c J  
Sedra, Shokralla N. — d J

*Muscular system  
(visceral muscles)*

- Sedra, Shokralla N. — c J  
Sedra, Shokralla N. — d J

*Intestinal tract*

- Faber, J. — d J

*Vascular system*

- Millard, Mrs N. A. H. — a J

*Endocrine glands*

- Rehm, Miss M. — a D  
Schwinck, Miss I. — a D

## Short notes and references to new technical methods

### ELEVAGE DU DISCOGLOSSE AU LABORATOIRE

par M. le Prof. Dr L. Gallien — Lab. de Biol. anim. du P.C.B., Rue Cuvier 12, Paris Ve.

Il est possible de conserver au Laboratoire, en bon état physiologique, le Discoglosse, pendant des mois et même des années, afin d'obtenir des pontes à peu près à volonté. Voici les éléments essentiels de l'élevage tels que nous les utilisons avec succès.

L'unité de l'élevage est constitué par une douzaine de couples. Nous séparons les mâles des femelles, et chaque lot est conservé dans un aquaterarium très simple. Celui-ci comprend deux éléments.

— Un aquarium vitré d'un type standard mesurant: Lg. 35 cm., Larg. 23 cm., Haut. 25 cm. dans lequel on met de l'eau sur une hauteur de 3 à 5 cm.

— Une cage en bois qui s'adapte à l'aquarium. Cette cage montée sur 4 pieds s'encastre sur l'aquarium et mesure 30 cm. de profondeur et 18 cm. de hauteur. Les cadres en bois sont recouverts d'un fin grillage métallique. Un panneau mobile grillagé couvre la cage, et un panneau de bois contre-plaqué, mobile également, constitue le plancher. On dispose à l'intérieur de la cage des niches en briques creuses ou en bois dans lesquelles les animaux aiment se cacher. Une boîte de Pétri reçoit les rations de larves de *Tenebrio* destinées à la nourriture. Enfin un plan incliné, pourvu de petites barres transversales, permet aux animaux de remonter de l'aquarium dans leur cage.

#### Nourriture:

Elle est constituée par des larves de *Tenebrio molitor*. La ration est calculée sur la base de 10 larves par semaine et par animal. On la distribue en deux rations hebdomadaires. 24 heures après les repas l'eau de l'aquarium est changée et la cage nettoyée à l'eau et à la brosse.

L'élevage des *Tenebrio* est fait dans de grandes lessiveuses en zinc, pourvues d'un couvercle. On remplit celles-ci de son, on ajoute de temps en temps quelques carottes et on „ensemence” avec des *Tenebrio* adultes. En pratique, on dispose d'un jeu de 6 lessiveuses pour une trentaine de Discoglosses. Chaque lessiveuse est exploitée pendant environ deux mois, à partir du moment où elle apparait abondamment pourvue en grosses larves. Ensuite on la vide et on renouvelle la culture. En opérant ainsi par roulement, on a pendant toute l'année une bonne réserve de nourriture.

Il y a intérêt en hiver à entretenir des souches de *Tenebrio* adultes qui pondent. Il suffit d'en réserver un certain nombre que l'on place dans des cristallisoirs remplis de son à l'étuve réglée à 25°. Dans ces conditions, la reproduction continue, et on utilise ces réserves pour les ensemencements d'hiver.

#### La ponte provoquée, son déclenchement au Laboratoire:

Quand on désire des oeufs de Discoglosse, on choisit une ou deux femelles mûres n'ayant pas pondu depuis 2 ou 3 mois et deux ou trois mâles. Si on désire une ponte d'un couple donné, on isole le couple dans un aquaterarium.

Le choix des mâles est important. On prend des animaux en bon état physiologique; on choisit ceux dont la callosité est bien noire et qui montrent l'ébauche de la „peau sexuelle”. Ceci est indiqué par le noircissement du menton résultant du développement des papilles kératinisées de la peau. Le

menton doit être gris. Si le mâle a une peau sexuelle bien nette la ponte est à peu près assurée en 48 à 72 heures. Sinon le délai de ponte est plus long. Il faut éliminer du choix, les mâles ayant une callosité blanche ou simplement grise, ils ne sont pas „mûrs”.

Le choix des progéniteurs étant fait, le ou les couples, sont mis dans un aquaterrarium isolé, dans lequel le niveau d'eau est porté à 15/18 cm. On dispose quelques pierres ou briques creuses sur le fond et à l'aide d'une résistance électrique plongeant dans l'eau, on élève la température jusqu'à 25°/26°. Si l'opération est bien conduite, on entend assez rapidement le chant des mâles, caractérisé par une série de *Rhâ-Rhâ-Rhâ* rapprochés. Entre 48 et 72 heures l'accouplement se produit et les femelles pondent. Les oeufs isolés sont retrouvés au fond de l'aquarium. Il suffit de les recueillir, de les laver par passage dans deux ou trois bains d'eau, de manière à éliminer les traces de mues, de fèces. La ponte s'effectue souvent la nuit.

#### *Elevage des têtards:*

Le développement embryonnaire du Discoglosse est très rapide et sa vie larvaire courte: de l'ordre de 30 à 35 jours pour une température de 23°. Jusque'ici je n'ai observé que des races différenciées quant au sexe (Banyuls, Alger, Tozeur, Tunis), c'est à dire qu'on observe d'emblée à la métamorphose 50 % de mâles et 50 % de femelles.

L'élevage des têtards est facile. La nourriture est constituée par des épinards cuits ou de la salade de laitue, dont on cuit les feuilles vertes. Deux fois par semaine on donne aux animaux un petit fragment de rate, que l'on enlève au bout de 3 à 4 heures. On maintient l'eau des élevages très claire en ajoutant quelques Daphnies qui ne tardent pas à palluler.

## ELEVAGE DES LARVES ET DES PETITES GRENOUILLES DE DISCOGLOSSUS PICTUS

par M. le Dr P. D. Nieuwkoop, Hubrecht Laboratorium, Utrecht, Holland.

Nous n'avons que peu de détails à ajouter à la méthode d'élevage des larves, décrite par M. le Professeur L. Gallien. Nous avons cultivé les larves dans un petit aquarium bien équilibre (30 × 30 × 40 cm.). Comme nourriture nous avons donné régulièrement des feuilles de salade, sans renouveler toutefois l'eau pendant toute la période de cultivation. Il se forme ainsi une couche de détritrus au fond de l'aquarium et l'eau prend peu à peu une couleur verdâtre. Bientôt on voit apparaître des colonies de Daphnides se développant rapidement. La température peut varier entre 18 et 25° C sans aucun désavantage.

Toutes les larves parviennent au stade de la métamorphose au bout de 4 à 8 semaines. Le processus de la métamorphose s'accomplit avec une vitesse relativement grande. La réduction de la queue ne prend qu'une semaine, tandis que la transformation de la tête et celle du tronc se réalisent même en quelques jours. Si les larves sont bien nourries, la métamorphose s'accomplit sans difficultés et les larves se transforment en petites grenouilles d'une longueur de 5 à 8 mm. Au moment où une larve commence à faire des efforts pour quitter l'eau, il est bien nécessaire de la placer dans un aqua-terrarium, dans lequel elle peut sortir de l'eau d'une manière plus facile.

Dès ce moment la phase la plus difficile de l'élevage fait son début. Le changement de l'animal aquatique en animal terrestre donne de grandes difficultés quant à la nourriture. Il est indispensable de leur donner une nourriture animale tout à fait menue et variée. Les larves, nymphes et adultes des

Drosophiles ne satisfont pas. Cette nourriture n'est pas appréciée et les petites grenouilles meurent après une ou deux semaines.

Nous avons offert de petits morceaux d'Enchytrés, qui remuent pendant une période assez longue. Les petites grenouilles aiment beaucoup cette nourriture et commencent à croître de façon extraordinaire. Pour que cette nourriture elle aussi ne soit pas trop homogène, nous l'avons alternée avec un menu composé de petits crustacés, arachnides, collemboles et de larves d'insectes, etc., recueillis de la manière suivante: après avoir rassemblé une quantité de feuilles diverses, humides et déjà à moitié pourries, nous les avons déposées sur un tamis en métal d'un diamètre de 60 cm., qui à son tour se trouve placé sur un entonnoir de même taille. Une lampe de  $\pm 100$  watt est suspendue au dessus de ce tamis pour chauffer et sécher très lentement cette couche de feuilles. Les petits animaux s'enfoncent peu à peu et finissent par tomber dans l'entonnoir, se débouchant dans une petite cuvette où les animaux s'accumulent sur quelques feuilles humides. Il suffit de verser le contenu de la cuvette dans l'aqua-terrarium. Dès que les petites grenouilles ont atteint une longueur de 15 mm. ou davantage, on peut leur donner à manger des tout petits vers, une nourriture excellente pour les amphibiens. Cette méthode d'élevage nous a fourni des résultats bien satisfaisants.

## General questions and announcements

### I. The Central Embryological Library

The foundation of a central embryological library has met great enthusiasm among the embryologists all over the world. We already received an important number of reprints for the central library, for which we wish to thank the sponsors very cordially.

Most embryologists have sent us not only their recent but also their older publications, which greatly contributes to the completeness of the central collection.

We are cataloguing our collection and have finished our alphabetical card-index, so that we can already fulfil demands for special publications, when title, name of author, year of appearance and name of periodical are mentioned. They can be borrowed from the institute under certain conditions<sup>1)</sup>. Next year we hope to be able to give more complete information, as e.g., survey of literature on special subjects, etc.

For those embryologists, who have not yet realized the use and significance of this Central Embryological Library we are repeating its aims.

- a) Every embryologist can ask for information about literature on special subjects or of certain authors, about newly published literature, etc., etc.
- b) Every embryologist can ask for special papers which are not available in his own country. The Hubrecht Laboratory will lend them — under certain conditions<sup>1)</sup> — to every embryologist.

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<sup>1)</sup> Reprints

a) can be borrowed for one month at the utmost, time for shipment not included.

b) The receipt, added to the consignment, must be returned by return of postage after being controlled and signed.

c) In case of high forwarding-charges they have to be partly carried by the applicant.

- c) Every embryologist can personally consult the Library of the Hubrecht Laboratory at all times.
- d) The central library will be at the disposal of every embryologist, who is carrying out scientific work at the Hubrecht Laboratory.

Since a part of this central collection will be regularly lent out, a single collection cannot fulfil all requirements. For providing information about literature and for the scientific work of the staff of the Hubrecht Laboratory and of visiting embryologists we need a collection which is complete and which is at their disposal at all times. We therefore ask every embryologist to send us two copies of his/her papers, one under the name of the „Central Embryological Library of the Hubrecht Laboratory” and one under that of Dr P. D. Nieuwkoop, whose collection will form the special collection for internal use.

In case of private collections, which are not in use any more and which may otherwise get lost, it will be highly appreciated if they could be added to the Central Embryological Library of the Hubrecht Laboratory.

## II. The Central Embryological Collection of slides and material

The extensive embryological material, collected by Prof. Dr A. A. W. Hubrecht during his life, is present at the Hubrecht Laboratory in the form of an enormous number of slides and an extensive material kept in alcohol. This collection, containing complete embryological material of many very interesting and rare animals, is in very good condition.

Dr D. de Lange, Director of the Hubrecht Laboratory from 1916 up till 1947, has extended this material in several aspects, while a number of embryologists have donated their private collections to the central collection of the Hubrecht Laboratory.

At the present moment the Hubrecht Laboratory possesses the complete collections of slides of the late Prof. Dr Anton Dohrn, former Director of the Zoological Station in Napels, a part of the collection of the late Prof. Dr E. Selenka, the experimental-embryological collection of slides of the late Prof. Dr H. Spemann, etc., while recently Prof. Dr F. Hochstetter from Vienna promised to leave his very important and extensive collection of slides and material to the „Institut International d'Embryologie” to be placed in the Hubrecht Laboratory too.

The central collection will be at the disposal of every embryologist, as they can study the material at the Hubrecht Laboratory, and parts of the collection may be borrowed under special conditions<sup>1)</sup>.

We hope to compose a general catalogue of the whole collection in the

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<sup>1)</sup> Slides,

- a) if they do not consist of very important and rare material, can be borrowed for half a year at the utmost, time for shipment not included.
- b) The receipt, added to the consignment, must be returned by return of postage after being controlled and signed.
- c) The slides have to be packed safely on returning.
- d) In case of high forwarding-charges they have to be partly carried by the applicant.

### Material

can be borrowed and studied under the same conditions, but have to be returned as such or in form of slides, which become part of the central collection.

near future. This catalogue will then be sent to all embryological institutes in order to make the collection more easily accessible.

As a central embryological collection, brought together centrally, where embryologists can find accomodation for studying it, has a much higher value for the Embryological Science than individual small collections, distributed all over the world, we like to interest you in this Central Collection of the International Embryological Institute in Utrecht.

### III. The Normal Table of *Xenopus laevis*

In addition to what has been mentioned in the first issue of the G.E.I.S., we can now state that an extensive material of the normal development of *Xenopus laevis* has been collected in Stellenbosch, South Africa, by Mr J. Faber, assistant at the Hubrecht Laboratory. We want to thank the Directors of the Zoological Institute and the Inland Fisheries Department in Stellenbosch for their lively interest and direct assistance to the scientific work of Mr Faber.

We have prepared a continuous series of about 70 developmental stages from the very first beginning of development up till the end of metamorphosis. This material has been distributed among the collaborators in order to be investigated in the course of about one year, so that we hope to be able to publish this normal table in the course of the year 1952.

At the present moment the following embryologists have promised their collaboration to this international team-work:

Prof. Dr J. Ariëns Kappers (Groningen, Holland), Miss Dr J. H. Bijtel (Groningen, Holland), Dr A. Bretscher (Bern, Switzerland), Prof. Dr J. Cordier (Brussels, Belgium), Mr G. A. van Eeden (Potchefstroom, South Africa), Mr J. Faber (Utrecht, Holland), Dr J. C. v. d. Kamer (Utrecht, Holland), Dr J. J. Kollros (Iowa City, U.S.A.), Mrs Dr N. Millard (Cape Town, South Africa), Dr D. R. Newth (London, England), Dr P. D. Nieuwkoop (Utrecht, Holland), Prof. Dr J. Pasteels (Brussels, Belgium), Mr R. van Pletzen (Bloemfontein, South Africa), Prof. Dr Chr. P. Raven (Utrecht, Holland), Mr P. A. J. Rijke (Potchefstroom, South Africa), Dr Shokraïla N. Sedra (Alexandria, Egypt), Mr A. L. Smit (Stellenbosch, South Africa), Mr W. Steyn (Bloemfontein, South Africa; now Utrecht, Holland) and Dr S. Toivonen (Helsinki, Finland).

The subjects which the individual collaborators will study, can be found in chapter *b* of this issue.

## Communications of the „Institut International d'Embryologie”

The I.I.E. has to announce with regret the loss of two of its members by death: Prof. Dr Hans de WINIWARTER, who died July 13th, 1949, at the age of 74 years; and Prof. Dr Eckhard ROTMANN, who died September 2nd, 1950, 43 years old.

Prof. Dr S. R. DETWILER, New York, and Prof. Dr A. T. HERTIG, Boston, resigned their membership.

The Symposium, which was to be held under the sponsorship of the I.I.E., through the International Union of Biological Sciences, in the summer of 1951, has been postponed until 1952. Therefore, the next general assembly of the I.I.E. will be postponed too, in order that it may be combined with this Symposium.



## Review of recently published textbooks on Embryology

We will open this new chapter of the G.E.I.S., as we feel the desirability of an annual survey of the recently published text books. We could suffice by giving only a list of titles, but we feel that a serious review of contents and practicability will be of much greater value.

We therefore ask every author of embryological text books to send us one presentation copy. We will bind ourselves to review it in the next issue of the General Embryological Information Service. The text book will be added to the Central Embryological Library, to which it will form a valuable acquisition.

The fact that the G.E.I.S. is read by almost all embryologists over the whole world may justify sufficiently the form of organisation we choose for this chapter.

### *Review of textbooks.*

J. BOEKE. Leerboek der ontwikkelingsgeschiedenis van den mensch (en de hogere gewervelde dieren). N.V. A. Oosthoek's Uitgevers-Maatschappij, Utrecht, 1949. 676 pag., 413 fig. f 37,50.

With the appearance of this „textbook of embryology of man and the higher vertebrates“, by the well-known Utrecht histologist and embryologist, Prof. J. Boeke, a great work has been completed. Up till now, no textbook of embryology in dutch language existed. As the author indicates in his preface, the book is destined for biology students wishing to get acquainted with the development in various groups of the Vertebrates, for medical students, who, in their study of the structure of the adult human body, highly need a detailed knowledge of the development of this structure, and for the medical practitioner, who finds himself often placed, in his profession, before questions which can only be answered by embryology. Therefore, besides a detailed description of normal development in man and the higher Vertebrates, the most common types of congenital malformations are shortly discussed. Furthermore, the physiology of the placenta and of the embryo are treated in some detail.

It is a special feature of the book that the results of experimental embryology are extensively taken into account. For the difficulties, arising from the combination of descriptive and experimental data in one text, a solution has been found by a treatment of the most fundamental problems of experimental embryology in one of the first chapters; more detailed information on special developmental processes is given in later chapters in combination with the descriptive data.

It is to be expected in a text of this size to find some error or omission of data. It is also not surprising that at many places, especially in the parts devoted to experimental embryology, the most recent publications have not been mentioned. But this cannot diminish our admiration for the way in which the author has carried out the task that he had set himself.

The book is richly illustrated; the illustrations are, in general, very good. There is a list of literature of 8 pages and an index of 12 pages.

CHR. P. RAVEN.

KARL PETER. „Grundlagen einer funktionellen Embryologie, eine biologische Studie“, Johann Ambrosius Barth/Verlag/Leipzig. 170 Seiten.

In this book the author treats a rather neglected aspect of embryological development, viz., the problem of the functional unity, which a developing organism forms at every moment of its life history. The author divides the problem into two main questions, viz., the factors which enable the development of the form, and those which guarantee the maintenance of life.

After a separate treatment of both questions, their interrelations are analysed, while in a next chapter the factors, which guarantee the maintenance of life, are studied in the various groups of Vertebrates.

Then the plasticity of the developing organism is discussed, a plasticity which enables the embryo to adapt itself to the gradually changing external and internal conditions. Here the author mentions the power of regulation, the resistance against poisons, the power of regeneration, the dependent and independent development of parts of the organism at successive stages of development, etc.

A special chapter has been devoted to a comparison between larval and adult life, in order to show the special demands which the embryological development makes for the maintenance of life.

In his book „Die Zweckmässigkeit in der Entwicklungsgeschichte“, which appeared in 1920, the author already drew the attention to the efficiency of all embryological processes, which are aimed at the requirements of the adult state. This „final“ view forms a very valuable complement to the commonly studied causal and genetical aspects of development, as here we approach the problem from a quite different point of view. Although these various points of view are complementary fields of science, they really support our general understanding of the problems of development and life. We will, therefore, express our gratitude to the author having given a more systematical consideration of the whole development seen in the light of efficiency in this book. This book will certainly stimulate the interest in this branch of science. We are already looking forward with interest to the second part of this study, which will deal with the relations between the various embryological processes and the functions of the various organ systems.

This book is rather simply executed as direct consequence of the great difficulties which had to be overcome in these years in Germany so shortly after the second world war. We hope that the second part will be printed on better paper and will be more richly illustrated. The illustrations themselves are good, but do not always show to full advantage on this paper.

The book contains an extensive list of literature, which gives mainly somewhat older literature.

P. D. NIEUWKOOP.

## Annual survey of embryological literature

### INTRODUCTION.

From several sides we received the request whether the Hubrecht Laboratory should be willing to publish an annual survey of the „complete“ embryological literature of the preceding year. After we had gathered information concerning the desirability and about the possibility of getting enough cooperation for realizing this project, we can announce that the Hubrecht Laboratory is willing to organise such a service in the near future.

We therefore propose to split the G.E.I.S. into two sections — one giving a survey of the current scientific work in the year in question and the other giving the literature published in the preceding year.

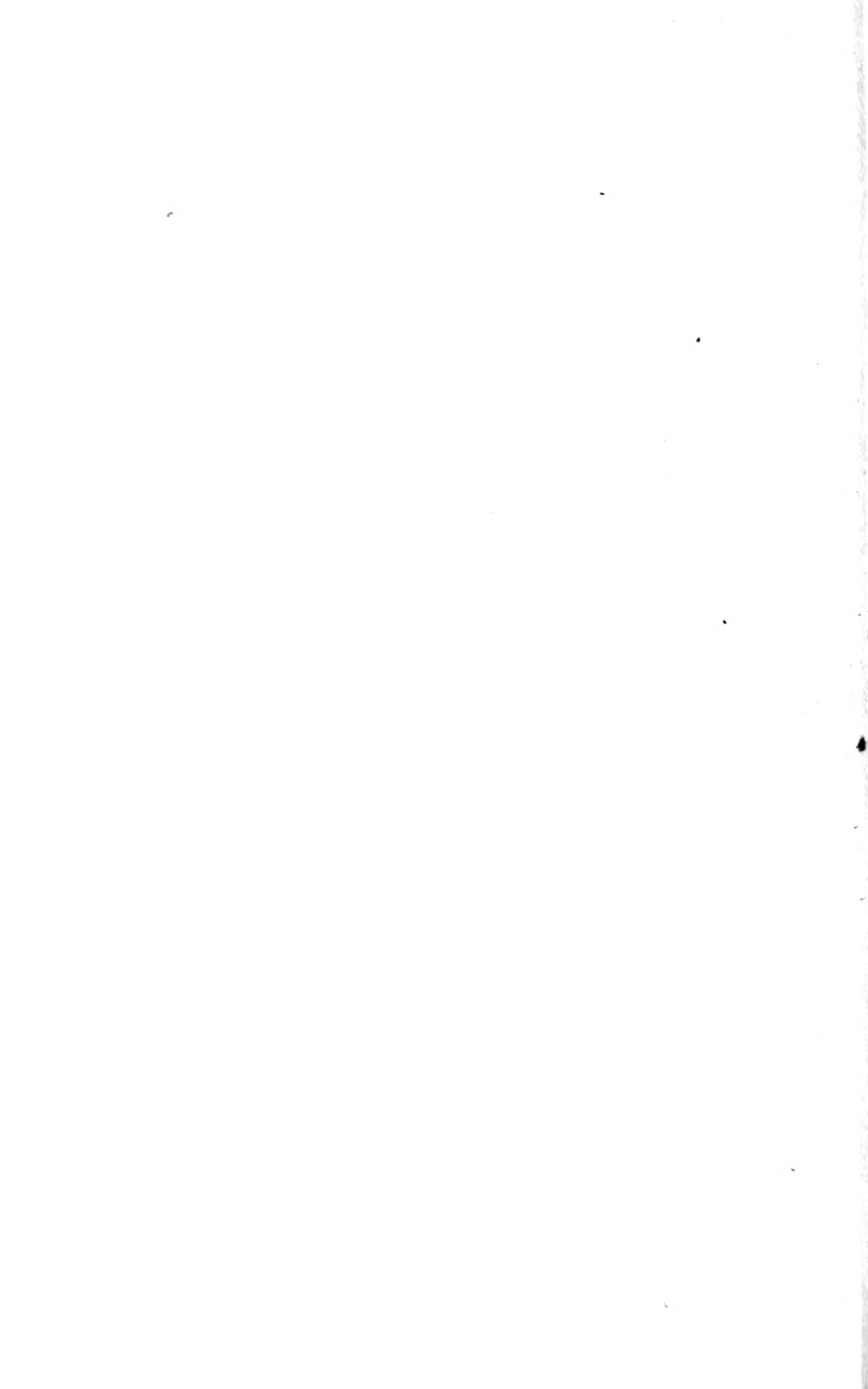
In order to avoid confusion, we draw your attention to the different aims of both sections. a) The survey of the current scientific work will simplify correspondence among workers on related subjects and will stimulate international cooperation and team work. b) The survey of the literature published in the preceding year will make the extensive modern literature more easily accessible to every embryologist.

We propose the following organisation.

Every embryologist will be asked to send to the Hubrecht Laboratory all his/her publications dealing with embryology in its widest sense, so that we can compose a general list from our own collection. In this manner we need only the promise of every embryologist to send us all his/her publications. This form of organisation includes a great saving of time and work to every collaborator and guarantees, moreover, that all publications listed in the G.E.I.S. are present and available at the Hubrecht Laboratory. In this way, the central library will be of direct use to every embryologist. Once a year we will send a request to every embryologist for the latest literature. This year this request will be included in this issue of the G.E.I.S.

As at the present moment the central embryological library has not yet reached such a degree of completeness that it can already give a more or less complete survey of all embryological literature published over the whole world, and Mr P. D. Nieuwkoop will probably leave the laboratory for one year, we believe that it will be better to start such a service not before next year.

We, however, ask every embryologist to send all his/her recent and older publications so that we will be able to publish a more or less complete survey of the embryological literature in the course of the year 1952.



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