

REVIEWS OF BOOKS : BOEKRESENSIES

RUDOLF STEINER EDUCATION

Rudolf Steiner Education. A brief exposition. By L. Francis Edmunds. Pp. 65. 3s. 6d. Sussex: New Knowledge Books. 1956.

Contents: Foreword—by the Editor, "Child and Man". Introduction. The Kindergarten and Pre-School Years. The Years with the Class Teacher. Adolescence. Questions—general and particular. The Form and Organization of a Rudolf Steiner School. The Range of Rudolf Steiner's Work for Children. The Rudolf Steiner School Movement.

Man, according to the recapitulation theory accepted by the anthroposophicals, re-lives the history (ages) of human society ('each human life is the revelation of an immortal spirit that was before birth and that will be after death'). The aim of Steiner's anthroposophical education is to help the child to move and live in intimate harmony with this 'spirit'.

The child passes through 3 clearly marked phases in its growth. During the first 6 or 7 years of human life, all forces are directed towards building up the *physical* organism. In the Nursery and Transition classes therefore, as was the spirit in primitive society, the stress is on activity, the children learning through imitation and example. With the *change of teeth* a certain stage of completion is reached, and this is accompanied by a definite change in mental outlook.

From 7 to 14—a period only given to man—children live in the world of their *feelings* and in this realm *art* makes a direct appeal and all subjects, even mathematics are presented in an artistic and symbolic way. During these critical years each class is entrusted to a class teacher who remains with it for the whole 8 years, teaching all the main subjects etc.

After 14 the *intellect* is ready to function, because children now experience the world through the power of thought and have a natural desire to submit everything to reason. Periods in these co-educational schools are blocked and subjects are taught in block periods of some 4 weeks each. (Co-education does not necessarily mean boys and girls educated together, but science and art being rightly related.)

It is also claimed that many non-normal or handicapped children have received great benefit from this system, partly because they are looked upon as presenting a constant moral challenge to modern society.

Mr. Edmunds' book could have given the layman more information on organization and administration. On the other hand, it serves as a good introduction to the Steiner system, and a challenge for teachers, parents, mental-health specialists, and those who are looking for some new philosophy of education. For those, however, with a convinced religious philosophy, the information would have to be presented much more inspiringly.

S.P.O.

ELEMENTARY ANATOMY AND PHYSIOLOGY

Whillis's Elementary Anatomy and Physiology: Fourth Edition. By Roger Warwick, B.Sc., Ph.D., M.D. Pp. vii + 274. With 107 Illustrations. London: J. & A. Churchill, Limited. 1957.

Contents: I. The Human Body. II. Osteology. III. The Joints or Articulations. IV. Muscles and Fasciae. V. The Alimentary System. VI. Digestion. VII. The Blood. VIII. The Circulatory System. IX. The Principal Blood-Vessels of the Body. X. The Lymphatic System. XI. The Respiratory System. XII. The Fate of Absorbed Foodstuffs, Metabolism. XIII. The Urinary System. XIV. The Nervous System. XV. The Special Senses. XVI. The Genital System. XVII. The Skin. XVIII. The Ductless Glands. XIX. The Spleen and the Liver. Appendix on Nomenclature. Index.

This book was written so as to link elementary human anatomy with some simple physiology for the first-year medical student, and it will also be of value to trainee nurses, physiotherapists and radiographers.

Although Professor Warwick claims in his preface that this 4th edition has been brought up to date from the point of view of recent contributions in anatomy and physiology and of terminology, there are still a number of antiquated descriptions and terms included. The most glaring example is the text dealing with the structure of the lung and Fig. 80 which illustrates it. Only

3 components (and these excluding B 12) of the vitamin-B complex are mentioned. A further example is the method indicated for compression of the axillary artery (p. 136), viz., placing a pad in the armpit and bringing the arm closely to the side, which can only result in a bloody disaster.

In general the illustrations are large and clear but rather 'flat'. The chapters dealing with the locomotor apparatus are good. This book is recommended as a reference book to the above-mentioned trainees. It may also be of use to a good medical student who wishes to do a rapid revision of basic elementary anatomy and physiology just before entering his clinical years.

R.S.

STATISTICS

Mathematics and Statistics for Use in Pharmacy, Biology and Chemistry. By L. Saunders and R. Fleming. Pp. x + 257. 27s. 6d. (postage 1s.). London: The Pharmaceutical Press. 1957.

Contents: Introduction. Preface. 1. Arithmetic. 2. Algebra. 3. Graphs. 4. Series, e and natural logarithms. 5. Differential calculus. 6. Higher derivatives and partial differentiation. 7. Integration. 8. Trigonometry. 9. Differential equations. 10. Equations and series for describing experimental measurements. 11. Probability. 12. Statistical analysis of repeated measurements. 13. Comparison of data by statistical methods. Tests of significance. 14. Some applications of statistics to biological assay and bacteriology. 15. Some applications of statistics in pharmacy. *Appendix I.* Fundamental constants, approximations and conversion factors. *Appendix II.* Triangles, lengths, areas, volumes and analytical geometry. *Appendix III.* Standard integrals. *Appendix IV.* Stirling's approximation. *Appendix V.* Mean and variance of the binomial and Poisson distributions. *Appendix VI.* The normal distribution. *Appendix VII.* Variance of a function of variates. *Appendix VIII.* Some theorems in statistics. *Appendix IX.* Regression variance. *Appendix X.* Determinants. *Appendix XI.* Solution of the diffusion equation. *Appendix XII.* Binomial theorem for any index. *Appendix XIII.* Statistical tables. Four-figure Logarithms. Four-figure Antilogarithms. Answers to Problems. Index.

This is a text-book written for the reader who feels a positive need for a knowledge of mathematical theory and its application to biology. It is by no means light entertainment for the occasional consumer of popular science. The author presumes no previous knowledge of the subject, but they do expect concentration, a modicum of common sense and a measure of diligent application. For those who fall within the circle of readers intended by the authors the reading of this work will be well rewarded effort.

The book starts with a definition of the 'alphabet' of arithmetic and in the first 100 pages deals minutely with the theory of algebra, logarithmic mathematics, trigonometry, differential calculus, and the solution of partial differential equations. The authors could not have covered so vast a territory without loss of detail, sequence or clarity had they not abandoned the literary style of 'easy narrative'. The fact that they have done so adds immeasurably to the value of the book and makes their introductory apology unnecessary.

It is doubtful if the section on statistics will replace other standard works on the subject or consultation with the professional statistician. It will, however, place either course of action on a sound theoretical basis and facilitate the evaluation of published results which embody statistical argument.

This is a work to be heartily recommended as an advertisement for British academic pharmacy and biology.

E.B.D.

A TEXTBOOK OF PHYSIOLOGY

The Life of Mammals. By J. Z. Young, M.A., F.R.S. Pp. vii + 820. Illustrations. 84s. Oxford: Oxford University Press. 1957.

Contents: Section I. The Control of Living Systems. Section II. The Skin, Control of Temperature and Appearance. Section III. The Connective Tissues. Section IV. Skeletal Tissue, Cartilage and Bone. Section V. The Framework of the Body. Section VI. Muscles. Section VII. The Vertebral Column. Section VIII. The Forelimb. Section IX. The Pelvic Girdle and Hind Limb. Section X. The Head of Mammals. Section XI. The Intake of Food, Mouth and Teeth. Section XII. Digestion. Section XIII. The Internal Environment and Composition of the Body Fluids. Section XIV. The Heart and Circulation. Section XV. Respiration. Section XVI. Excretion and the Control of Water Balance. Section XVII. The Nervous System. Section XVIII. The Spinal Cord. Section XIX. The Organization of the Brain. Section XX. The Autonomic Nervous System. Section XXI. The Control of Posture and Movement. The Cerebellum and Midbrain. Section XXII. The Forebrain. Section XXIII. The Cerebral Cortex. Section XXIV. Receptor Organs. Section XXV. Receptors in the Skin and Viscera. Section XXVI. The Eye. Section XXVII. Receptors

for Space Orientation and Air-borne Vibrations. Section XXVIII. Chemo-receptors. Section XXIX. Endocrine Organs. The Thyroid, Parathyroid and Thymus. Section XXX. The Adrenal Glands. Section XXXI. The Pituitary Gland. Section XXXII. The Pancreatic Islets and the Control of Carbohydrate Metabolism. Section XXXIII. Internal Secretions and Homeostasis. Section XXXIV. The Course of Development. Section XXXV. The Ovum and its Fertilization. Section XXXVI. The Production of an Embryo, Cleavage and Gastrulation. Section XXXVII. The Sequence of Differentiation. Section XXXVIII. A Comparative Survey of Gastrulation in Vertebrates. Section XXXIX. Extra-Embryonic Membranes. Section XL. The Reproductive Tract of Mammals. Section XLI. The Oestrous Cycle of Mammals. Section XLII. The Development of Mammals. Section XLIII. Segmentation, Development of Skeleton, Muscles and Coelom. Section XLIV. Development of the Gut and Respiratory System. Section XLV. Development of the Urogenital System. Section XLVI. Development of the Blood Vascular System. Section XLVII. Development of the Nervous System. Bibliography. Index.

This magnificent work by the eminent anatomist and physiologist, Professor J. Z. Young, F.R.S., is a publication of the first importance.

The book astonishes one by the breadth of its scope. It embraces literally the whole of mammalian physiology, and may be considered the author's *magnum opus*. No mammal too insignificant for Professor Young's analyzing eye, and none too large. From the development of the mouse to a description of the tail of a whale, all are brought under one great review in this general perspective of mammalian physiology.

This is a book for study and for reference. All sorts of facts are mentioned; the ovulation of the spiny ant-eater is considered as well as the blastocyst of the badger, and the broad and solid basis of general mammalian physiology makes this the 'Starling' of the mid-century. The very full chapters on development and embryology are of particular interest and value.

Through the whole of the book there runs the theme of the relationship between structure and function. It is the standard text-book on physiology, which we recommend to students of biology, to medical students and to physiological workers. The format is good, the line drawings are clear and concise and the index adequate. It is an interesting coincidence that Starling, of University College, London, whose 'Elements of Human Physiology' guided thought and research in the early part of the century, should be succeeded by an author from the same medical school 50 years later, this time from its Department of Anatomy.

The author, University College, and the publishers are to be congratulated on bringing out a great book.

S.T.

THE PLEA FOR THE SILENT

The Plea for the Silent. With an Introduction by Dr. Donald McI. Johnson, M.P. and Norman Dodds, M.P. Pp. 176. 12s. 6d. net. London: Christopher Johnson Publishers Ltd. 1957.

Contents: Introduction by Dr. Donald McI. Johnson, M.P. and Norman Dodds, M.P. No Benefit of Jury. An Unnecessary Stigma. A Broken Window. Strange Therapeutics. Into the Unknown. Fear Gripped Me. A Doctor's Story. The Country of the Insane. Legality Against Justice, as told by E. Pakenham-Walsh, I.C.S. (ret'd.). Epilogue, by Leonard W. Clark, M.A. (Oxon.), F.R.A.S.

This interesting book is made up of the stories of persons who have had personal experience of the somewhat antiquated laws of England in regard to mental disease. They give only one side of the picture and one must not forget that there is another side. The conditions described certainly merit attention and improvement, and one would wish the compilers of the book all success in their campaign to have more enlightened methods and sur) roundings introduced as a change from the rather mediaeval conditions which are described.

A.H.T.

FLUID BALANCE IN SURGICAL PRACTICE

Fluid Balance in Surgical Practice. 2nd Edition. By L. P. Le Quesne. 20s. net. Pp. vii + 140. London: Lloyd-Luke (Medical Books) Limited. 1957.

Contents: Preface. Physiological Considerations. Effects of Operation on Water and Electrolyte Balance. Administration of Fluid and Electrolytes in the Uncomplicated Case. Dehydration. Potassium Deficiency. Renal Failure: Anuria. Effects of Excess Water and Salt. Nitrogen and Calorie Problems. Fluid Balance in Children (by Brian W. Webb). Technical Considerations. References. Appendices. Index.

The first edition of this monograph appeared in 1954 and was based on the Moynihan Prize Essay for 1953. This always results

in an unsatisfactory method of presentation as the book is then written to satisfy the conditions of the essay rather than to present the subject as a whole.

Now, however, comes the second edition which has not only been brought up to date but the disproportion between its various sections, resulting from the conditions of the original prize essay, has been corrected. To achieve this there has been extensive revision and some additions have been made. Thus nitrogen and calorie problems receive more detailed consideration and a completely new section is included on the problems of fluid balance in infants and children undergoing surgery. This latter section has been written by B. W. Webb, Senior Registrar, Children's Department, King's College Hospital.

All this improvement has resulted in an excellent little book

which should be read from cover to cover by all surgeons and others who are faced with these problems. The text is clear and easy to understand and it presents the whole subject in a readily assimilable form; the recommendations are completely practicable and safe. The only justifiable criticism one can offer is that the problem of the alkalosis which occurs with potassium deficiency is presented in a rather confusing manner, probably for the sake of brevity; some expansion here may help to clarify what is admittedly a confusing problem.

But that is a minor point. Here is a monograph which must be recommended very strongly and much trouble and many lives will be saved if all house-surgeons read this book before entering the surgical wards.

D.J. du P.