vaginal fluid. In 1943 Papanicolaou and Traut published a monograph on *Diagnosis of uterine cancer by the vaginal smear*, based on the study of over 3,000 women.

The present monograph, written with Traut and Marchetti and published with the aid of the Commonwealth Fund, chronologically really should antedate the others, as it represents the fundamental cytology of the epithelia of the female generative tract with particular attention to the cyclical changes produced by the ovarian cycle. The text is largely a commentary on the 22 admirable colored plates which show the follicle, corpus luteum, tubal, endometrial, endocervical, and vaginal epithelia.

It is rather confusing that in Chapter III, day one for the human menstrual cycle corresponds to the day of ovulation, while on the final colored plate it is assigned to the first day of menstruation. Based on cytologic criteria, the corpus luteum begins to regress by the 9th–11th day and corpus luteum of pregnancy, by the 120th day: The maxima of development of tubal, endometrial, and vaginal epithelia are described.

This monograph is an atlas and source book which should prove of utmost help to gynecological pathologists. It contains material which previously had to be searched for in the widely scattered literature.

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The brain of the tiger salamander (Ambystoma tigrinum). C. Judson Herrick. Chicago: Univ. Chicago Press, 1948. Pp. vi + 409. (Illustrated.) $5.00.

This monumental work represents the culmination of 50 years of labor on the nervous systems of vertebrates. The author has not only amassed an enormous amount of data on the details of neurological structure in the salamander, but he has also laid a broad foundation for the comprehensive understanding of all vertebrate brains, with special emphasis on the origins of structural features and functional capacities of the human brain, and the general principles of their evolutionary development.

Because of its typical generalized, primitive, vertebrate brain, the salamander has lent itself admirably to this study, and the fruitfulness of Herrick's concentration on this form, as testified by the present volume, is ample evidence of the wisdom of his choice.

The book has 300 pages of description and discussion and is divided into two parts which can be read independently of each other. Part I (120 pp.) is devoted to a general description of the brain of the salamander, together with several chapters on physiological analyses and interpretations, and a final chapter on general principles of embryologic and phylogenetic morphogenesis. This section is designed to give biologists, clinicians, and psychologists an outline of the plan of organization of a generalized vertebrate brain and some insight into the physiological principles exemplified in its action.

The second section (180 pp.) deals with the intricate structure of the salamander brain and presents the detailed evidence upon which the first part is based. It is drawn from the author's many previous papers as well as from considerable new material. Altogether, it is an invaluable reference for specialists interested in either comparative neurology or experimental neurophysiology.

The descriptive material is followed by 11 pages of bibliography and 70 pages of illustrations, the latter consisting of surface views and diagrams showing the internal architecture of the salamander brain, together with complete explanatory notes.

Dr. Herrick's lucid style, obvious enthusiasm, and broad perception give this specialized text, particularly Part I, the rare quality of being both interesting and intriguing reading. The author has performed a signal service in so ably presenting the results of his life-long quest.

WALTER A. STULTZ

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The neocortex of Macaca mulatta. Gerhardt von Bonin and Percival Bailey. (Illinois Monographs in the Medical Sciences, Vol. V, No. 4.) Urbana: Univ. Illinois Press, 1947. Pp. xi + 163. (Illustrated.) $3.00.

This monograph presents a greatly needed study of the cytoarchitectonic structure of the neocortex of *Macaca mulatta*. The authors describe the fissural pattern of the brain, the cortical architectural types, and their surface distribution; they survey the fields by serial sections and discuss the interrelations of cortical areas. Von Economo and Koskinas' nomenclature is used. A brain map in color, numerous drawings, and excellent photomicrographs illustrate the work.

The main chapters of the book are devoted to description of cortical fields and to critical discussion of the work of earlier authors. The criticism makes stimulating reading, but it does not always appear quite fair, since a number of apparent discrepancies, e.g. in the frontal region, seem to result from differences of interpretation rather than from essentially different findings. As regards whole cortical regions, the divisions suggested by the authors actually are similar to those of Brodmann, but the more detailed characterizations are frequently materially different.

Although it is emphasized that cortical fields often fade inconspicuously into one another, the morphological characteristics as a rule are described rather rigidly as if the fields were uniform. Variability within a cortical sector, if discussed at all, usually is mentioned casually in relation to some specific point the authors wish to make. This treatment of the material may cause some difficulty in understanding the significance of variants which are considered constant and even more difficulty in understanding why the authors hesitate to grant clear status to a number of variants which they describe and discuss. In addition, it is sometimes hard to appreciate in photomicrographs the structural differences in different sectors of the same variant, since it is not always sufficiently clear which variations are considered random and which constant. The problem of distinguishing random and constant variability, however, is of great importance. The authors reject the approach of the Vogts and numerous other workers who recognize as separate fields cortical sectors which show constant, though slight,