Early Development of the Meninges of the Spinal Cord in Human Embryos," traces meningeal origin to paraxial somitic mesoderm with a contribution of some neural crest cells to the pia mater; and that by Faulconer presents "Observations on the Origin of the Müllerian Groove in Human Embryos."

The four papers on the reproductive system include one on corpora lutea of the human ovary (White, Hertig, Rock, Adams); two on cyclic changes in the endometrium of the macaque (Bartelmez, with the collaboration of Corner and Heuser; Bensley); and one on certain differences in the pattern of uterine enlargement in primigravidae and multigravidae during the latter half of pregnancy (Reynolds and Baker). The report by White *et al.* compares histological and histochemical observations on 28 corpora lutea from pregnancies of 60 hours (a 2-celled egg) to 4½ months with those made on 48 corpora representing every day from ovulation to menstruation in normal menstrual cycles and on 13 associated with abnormal ova. "K cells," a new cell type, arising in the theca interna and eventually appearing in the membrana granulosa receive particular emphasis since their ketosteroid content suggests that they, as well as the granular lutein cells, may be involved in the secretory function of the corpora.

Two aspects of the cyclic changes in the macaque's endometrium are presented by Bartelmez and Bensley. The former considers the changes in the endometrium as a whole; the latter, the fluctuations in the mitotic activity of its epithelium. Both compare the conditions found in the different phases of the menstrual cycle (follicular, progravid, regressive, menstrual, and repair). Bensley finds the highest mitotic rate at the follicular phase and the lowest at the late luteal phase, but some variation in the rate appears in different regions of the epithelium, such as the surface epithelium, the superficial glands, and the basal glands. Bartelmez describes in detail the structural pattern of the endometrium for each phase and interprets the conditions found in the follicular, progravid, and regressive phases as adaptations for insemination, care of the blastocyct, and nourishment of the trophoblast.

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A Study of Antimetabolites. D. W. Woolley. New York: Wiley; London: Chapman & Hall, 1952. 269 pp. $5.00.

The establishment of a new principle in any branch of science occurs rarely. We can now safely assert, however, that the interference with metabolic activities by structural analogs is an established principle in biology. Its demonstration during the past 12 years has been more and more conclusive. (A number of investigators explained various phenomena on this basis as far back as 1920, it is interesting to note.)

This review of the antimetabolites by one of the foremost authorities in the field is most welcome and rewarding. Material covered includes a summary of the factual knowledge; hypotheses; applications to chemotherapy, pharmacology, and biochemistry; "the designing of antimetabolites;" and a chapter on synthesis and other phases of methodology.

The "favored hypothesis" for this phenomenon is that the antimetabolite is able to form a complex with the enzyme with which the metabolite normally reacts, but this enzyme-antimetabolite complex cannot then be converted into the normal products of the reaction, whereas the enzyme-metabolite complex can. This hypothesis, as well as objections to it, is examined critically.

It is not generally recognized that antimetabolites occur widely in nature and that evidently "nature long ago has seized upon this phenomenon, possibly as an elegant way of controlling natural processes." Cases in point are the antagonisms between testosterone and estrone, adenosine and cytidine, and between certain amino acids. Sometimes these result in physiological checks and balances, sometimes in disease.

Isosterism is considered, and an attempt is made to reconcile it with the favored hypothesis. This is the phenomenon that is quite the opposite to biological antagonism—i.e., the fact that two drugs closely related in chemical structure may have the same rather than antagonistic effects. Another mystery discussed is the fact that *p*-aminobenzoic acid, toward which the sulfa drugs are antagonistic, is itself a chemotherapeutic agent against rickettsial diseases.

An interesting topic is the antihistaminics as antimetabolites. One or two of the examples used require some stretch of the imagination in order to see them as analogs of histamine, but since they have been found to be effective clinically, the effort is worth making.

The lack of an author index is a minor fault that does not appreciably lessen the usefulness of this scholarly and readable volume.

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Adhesion and Adhesives. N. A. de Bruyne and R. Houwink, Eds. Houston-Amsterdam: Elsevier, 1951. 517 pp. $10.00.

The editors, assisted by a group of 14 specialists, have undertaken to cover in one volume a rather detailed survey of adhesives. Two main sections of the book deal, respectively, with the theoretical aspects of adhesion and with classes of materials generally useful as adhesives. A final chapter briefly describes adhesive testing.

The theoretical section summarizes efforts to relate phenomenological quantities—for example, those representing surface tension, interfacial energy as well as solubility and compatibility with molecular constants, as defined by dipole moment and group moment, dielectric constant, and the van der Waals' constants. Such efforts have so far led only to limited qualitative successes. The rheology of adhesives is