divided doses over a 4-week period, while the fifth monkey, J-202, received 1200 mgm. per kilo in 6 weeks. All became and remained free of *Entamoeba histolytica* for the full period of study except J-202. This macaque was vomiting, suffered from dysentery, and was very emaciated before treatment, and showed motile amoebae in the stools. While his general condition improved markedly during observation we were unable completely to eradicate his amoebae. *Strongyloides stercoralis* was not affected by the drug in this monkey, but *Balantidium coli* was. In J-205, however, the *Balantidium coli* infestation was not cleared. Table I summarizes our results.

Summary. Seven of 8 macaques, naturally infested with *Entamoeba histolytica* have now remained free of these parasites for 3 months after receiving orally 900 to 1200 mgm. per kilo of iodochloroxyquinoline (vioform N.N.R.) given in divided doses over 3 to 6 weeks. The stools of 2 of 3 monkeys infested with *Balantidium coli* have been negative during this follow-up period. Of the 2 animals harboring *Strongyloides stercorales,* one was cleared of this infestation. We believe that important factors in our results were the hygienic conditions maintained and the precautions taken to prevent reinfection in animals under treatment. All treated animals gained weight, developed normally, and showed marked improvement in general physical condition following our therapeutic regime. No evidence of drug toxicity was noted in any animal.

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The Vaginal Smear of the Ewe.

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As an introduction to the study of the physiology of reproduction in sheep we have investigated the vaginal smear of 15 ewes daily for variable periods of time, 6 of them for 11 months. Three of these have been followed through pregnancy and lactation. Data have also been accumulated regarding the lengths of the breeding periods, oestrous cycles and the length of oestrum. Oestrum was first evidenced about the first of September and 6 of the sheep that were maintained went into anoestrum about the first of March, a breeding period of about 6 months. Our data in regard to the

length of the cycle confirm that recently given by Allen *et al.*[1] The length of the cycle is slightly less than 17 days on the average with extremes ranging between 16 and 23 days. There was only one instance which fell outside of the 16-18 day period.

There are well defined changes in the character of the vaginal smear depending upon the time of the oestrous cycle. In general it may be said that these changes are more apparent macroscopically than microscopically. On the first day of heat, and in rare instances on the second, the smear consists of transparent mucus in which one finds floating cell flocculi. The cells present are polymorphonuclear leucocytes, cornified cells, and small epithelial cells. On the second day of oestrum or on the first day of metoestrum the smear becomes dry and has a cheesy appearance. Cornified cells and small epithelial cells are present. Large numbers of leucocytes are usually present for about a day on or between the second to seventh day of metoestrum. Cornified cells are never completely absent and in fact, one often encounters smears which appear similar to early metoestral smears in dioestrum. Thus it is impossible to differentiate metoestrum and dioestrum clearly by means of the vaginal smear. The vaginal lumens of 2 animals autopsied on the seventh day after oestrum contained a copious quantity of cheesy cellular material. Thus it would appear that desquamated cells are not rapidly flushed from the vaginal lumen in this species.

On the day before the impending oestrum the smear is usually scanty in amount. The cell types are similar to those occurring on the first day of oestrum. Therefore the conspicuous features of the smear are as follows: Transparent mucus upon which one finds floating cell flocculi on the first day of oestrum; a dry cheesy mass consisting of cornified cells and small epithelial cells in early metoestrum; a mild leucocytic wave; and the scanty smear consisting of leucocytes, cornified cells, and small epithelial cells in late dioestrum.

During pregnancy the smear is very scanty and exhibits very little variation from day to day. Small epithelial cells and a few leucocytes compose the smear.

We have designated as anoestrum the long interval, about 6 months, during which oestrum is not expressed. Our data, however, do not support the view that the reproductive organs of the ewe assume a state of true rest throughout this period. In only the middle portion of anoestrum does the smear assume a rather monotonous character. In the early and late portions one finds changes

[1] Allen, Edgar, McKenzie, F. F., Kennedy, J. W., and Beare, W. K., *Anat. Rec.*, **48, supplement, 9.**

in the character of the vaginal smear comparable to those found in the active breeding period. In some instances we have encountered smears resembling so closely those found during oestrum that only after tests with 2 vigorous males were we convinced that the animal was not in true heat. Two or more of these inhibited cycles were usually recognized in early and late anoestrum. A similar observation was made upon 2 ewes during the third month of their lactation periods. In one instance true oestrum occurred. Histological study of the reproductive organs of the ewe at various times of anoestrum and lactation should give further data on this point.

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Ineffectiveness of Prolan in Hypophysectomized Animals.*

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A complete hypophysectomy with cautery at the base of the brain was done by Frederick L. Reichert on a female collie (hybrid) puppy 7 weeks of age from a litter where fortunately we had a sister control. Every 2 weeks, weighings and radiographs of the leg and skull were taken. After 2 such periods it was evident that the hypophysectomy was complete. Six months after the operation daily administration of Prolan was begun and continued for 53 days. An average of 30 cc. was given daily. At this juncture an ovary and one uterine horn were removed and sectioned. The naked eye impression of infantilism in the genitalia was verified. The animal was allowed to rest for 2 weeks. For a month thereafter about 15 cc. daily of a more potent preparation of Prolan was administered. This was proven to contain 80 to 100 rat units per cc. Death from a pneumonia at this juncture terminated the experiment but examination of the remaining ovary and uterine horn showed essentially the same conditions as were previously found, *i. e.*, a persisting true infantilism.

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