

lumen, though perhaps here and there partially obstructed by leucocytes, is always sufficiently open to permit the free passage of bile. Bile is never found in the urine. In no case have the authors ever found anything suggesting cirrhosis or degeneration of the liver cells.

18 (110). "Tumors of wild animals under natural conditions": HARLOW BROOKS.

The author referred to the great importance of the etiology of neoplasms and the well-recognized fact that research along this line must now rest almost entirely on experimental studies of the lower animals. By this series of observations the author hoped to establish what may be called a "normal" rate of occurrence. This can be based only on observations of large numbers of animals which have been in captivity for only relatively short periods and which must be kept under far different conditions than is possible in the ordinary zoölogical park or in the laboratory animal house.

The author's observations were made on a large number of wild animals, most of which were captured direct from the wild, and which after capture and transportation were placed under the most carefully studied natural conditions ever attempted in any large zoölogical collection.

The occurrence rate of new growths in such a group of animals, comprising most of the known species of the reptiles, birds, and mammals should furnish a valuable contribution to the study of the etiology of tumors, especially since the animals included in this collection were, for the most part, at least, pure and uncontaminated, except for such crossing as normally takes place in nature. The animals of the New York Zoölogical Society have been selected by experts for their purity of type and every one is submitted to a careful veterinary examination before becoming a member of the collection. Notwithstanding that this examination might have been expected in some cases to have excluded animals afflicted with tumors, the records show that none have been rejected for this defect.

Of 2,645 living animals which have been under the charge of the author and his associates for the past five years, no case of

true neoplasm has been found. Seven hundred and forty-four animals have died, and, as is the routine custom at the New York Zoölogical Park, have been autopsied, either by the resident pathologist or by the author. In this series of 744 consecutive cases but one case of tumor has been found. This case, significantly enough, was found in a white raccoon dog, an animal whose purity of species is decidedly in question and which has been classed by some zoölogists as a "sport" or albino. The animal has, however, been described by Hornaday as a new species, *Nyctereutes albus*. The animal was secured in northern Japan, but was unrecognized by Japanese zoölogists. The tumor in this case was found to be myxosarcoma of the ovary. Tumors of parasitic origin, granulomas, tubercles, actinomycotic foci and the like are, on the other hand, relatively common.

In addition to these data, the author also referred to various other animals, chiefly ruminants, taken in the wild, and of which none presented tumors. The latter observation was made by the author himself in the field and was in accord with statements of reliable guides and naturalists.

The author felt that the number of cases cited was sufficiently large to permit him to conclude with a reasonable amount of certainty that true neoplasms are extremely rare in wild animals living under natural conditions. Abnormal conditions of life, such as close inbreeding, semidomesticity or contamination of species as seen in dogs, horses, cattle, and particularly in those animals usually employed for laboratory experiment, notably the white mouse, unquestionably increase the relative occurrence of new growths.

19 (111). "**The cutaneous excretion of nitrogenous material**":  
**F. G. BENEDICT.**<sup>1</sup> (Presented by **WILLIAM J. GIES.**)

A number of experiments were reported in which the subjects wore previously extracted underclothing and at the end of the experiment the nitrogenous materials were extracted with water and determined by the Kjeldahl process. Rest and work experiments were made. During rest there is considerable variation in the actual quantity of excreted nitrogen, the average of 5 experiments being

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<sup>1</sup> *Journal of Biological Chemistry*, 1906, i, p. 263.