certain pathological conditions there appears in the urine a sulfur and nitrogen containing substance, cystin. The source of this substance in the organism had been unknown until, through the efforts of Mörner and Embden, and others, its radical was demonstrated to be a normal constituent of the proteid molecule.

The chromatin of a developed cell differs from that of an unfertilized egg by the presence in it of radicals of purin bases. It is probable that these bases are derived from the histidin radical, which is also a normal constituent of proteids.

Hemoglobin is known to be absent from the unfertilized egg, and it appears only in the course of development of the embryo. It was shown recently that the non-proteid part of hemoglobin is a pyrrol derivative, and it is probable that a pyrrol radical is present in the proteid molecule. Chlorophyl is also a pyrrol derivative, a fact further establishing its close relationship to hemoglobin.

The work of Emil Fischer points to the way in which the various component radicals may combine in order to form the proteid molecule, and makes probable the eventual synthesis of true proteid material.

Fifth meeting.[1]

Pathological Laboratory of the Cornell Medical College. February 17, 1904.

27. "The nature and basis of sexual selection in moths": HENRY E. CRAMPTON.

The object of the investigation described was to obtain a quantitative expression for the strength of the mating instinct in certain species of large saturnid moths (*Philosamia cynthia* and *Samia cecropia*), and to determine the correlation between the mating instinct and structural characters. The results of earlier statistical studies upon the pupæ of these species were reviewed, dealing with the nature and basis of the process of natural selection during the period before emergence and at emergence. It was shown that:

1. Those pupæ which die after pupation and prior to metamorphosis are structurally different from and more variable than those individuals which successfully survive the pupal period.

[1] Reprinted from *Science*, 1904, xix, p. 459; *American Medicine*, 1904, vii, p. 480; *Medical News*, 1904, lxxxiv, p. 571.

2. Those pupæ which become perfect moths are likewise different from those which cannot emerge as perfect moths.

3. The basis for selective elimination is to be sought in correlation between the various structures.

The mating period follows immediately after metamorphosis, when certain individuals with weak mating instinct fail to take part in the production of the next generation, and are thus "sexually eliminated." In order to determine the points mentioned above, pupæ of the two species named were isolated as the time for metamorphosis approached, and upon emergence were given one opportunity to mate. It was therefore possible to compare the pupæ of the two classes of mating and non-mating individuals. The results, briefly stated, are:

1. That even slightly imperfect moths possess very little mating instinct, or in other words, that, with the structural conditions associated with an imperfect power of emergence, is correlated a low grade of mating ability.

2. That the mating individuals of the perfect class differ structurally to a certain extent from the non-mating ones, but they are very much less variable than the latter class.

The importance of these results from the standpoint of inheritance and evolution is sufficiently clear to render extended discussion unnecessary.

28. "Observations on a serous fluid of unusually high molecular concentration:" EDWARD K. DUNHAM.

The fluid was removed from the pleural cavity of a man suffering from lobar pneumonia. The patient was a scene-shifter in a theater, and had suffered considerable pain in the chest for four months before his admission to the hospital. His occupation required severe labor for brief periods, during which he became much heated, with intervals of leisure and exposure to cold drafts of air. The immediate reasons for his admission were a chill and inability to continue work. There was nothing unusual in the clinical course of the pneumonia or peculiar in his treatment. A few days after he entered the hospital 400 c.c. of a clear serous fluid were aspirated from the affected side of the chest. This fluid was examined on the same day, with the following results: