partition of bone between the two fossæ is also thicker.

The elimination of this "degraded affinity" is but one instance of the general evolution that has shaped or moulded all of the innumerable forms of animal and vegetable life. The vertebral column is always so badly decayed that anatomical comparison is impossible. The parts that "resist decay" indicate great physical perfection and strength. The Sacrum presents different forms in respect to curvature. Sometimes it is very slight, while in other specimens it is considerable. This curvature of the Sacrum is a more constant sexual characteristic in mound-builder skeletons than in the Caucasian or the African races, but I have not examined specimens enough to tabulate the difference. The only constant sexual characteristic of the Sacrum among all races of men is its greater breadth in the female, and this characteristic is well developed in the mound-builder skeletons. Comparing portions of almost every one of the larger bones of the mound-builder skeletons with several Caucasian and one Negro, and two Indian skeletons, it is certain that the primitive people of the Rock River Valley were strong, broad-shouldered, muscular men, with broad, round faces, and low receding foreheads. Exostosis, or foreign growth of bone, has been found. One, I remember, was found in one of the mounds near Sterling, Illinois. The foreign growth of bone in this specimen was stratified—deposited on the surface of the bone, in thin layers, like the layers in stalagmite. Bones exhumed from a mound on the west bank of Rock River, near Como, were very brittle, of a light and beautiful purplish color, when recently broken, and contained no animal matter. They resemble, in every respect, the bones exhumed from the church-yard of Ste. Genevieve, Paris, after a burial of over seven hundred years.—(Orfila Exhumations juridiques, Vol. I., p. 350.)

## WHITE CORPUSCLES OF THE BLOOD.

The London *Lancet* draws attention to an interesting memoir on the White Corpuscles of the Blood, which appears in the part just issued of the *Archives de Physiologie*, in which M. Renaut describes the different forms presented by the white corpuscles in different animals. In the river crayfish, for example, besides the ordinary lymph-corpuscles, there are many larger bodies with well defined nuclei, the protoplasm of which contains large highly refracting granules, resembling in many respects the vitelline granules of the frog and other batrachia. These corpuscles have a sharply limited but thin exoplastic pellicle; and if a drop of such lymph be allowed to fall into a drop of a one per cent. solution of osmic acid, the white corpuscles are instantly fixed, with their pseudopodia or protoplasmic processes extended; and these processes can then be seen to perforate the thin membrane, now blackened with the acid. There are thus two kinds of white corpuscles in the decapod crustacea—the lymphoid corpuscles and the amœboid corpuscles. Do similar differences exist in the blood of vertebrata? In reply to this, M. Renaut states that in the blood of all the vertebrata, from the cyclostome to the saurians, the white corpuscles are of two kinds; one, the ordinary white corpuscle, composed of hyaline protoplasm, presenting many short projecting points, with a nucleus undergoing gemmation and sending forth branched pseudopodia when placed under favorable conditions; the other containing numerous brilliant granules embedded in the protoplasm and surrounding the nucleus. These resemble the second form of corpucle described above as existing in the lymph of the river crayfish, but differ from them in having no outer limiting layer of condensed protoplasm, or exoplasm, as Haeckel has named it. The application of osmic acid shows that they may be subdivided into two other forms: one closely analogous to cells undergoing transformation into fat-cells, which present numerous granules, and stain black with osmic acid, and another set which contains granules that are not fatty, but which stain red with eosine. The best mode of demonstrating the existence of these three forms is to fix the blood in the rete mirabile of the capillary of the choroid in the posterior segment of the eye of a frog, by removing the anterior segment and exposing it to the vapor of osmic acid. At the expiration of twelve hours the eye is removed from the vapor, washed, the chorio-capillaris detached from the retina, and spread on glass; it is afterwards colored with, and mounted in, hæmatoxylate of eosine. The corpuscles may then be studied, and the three forms of ordinary, granular, and fatty corpuscles can be easily distinguished. M. Renaut finds that the white corpuscles of mammals generally, and of man in a state of health, all closely resemble each other, and are of the ordinary kind; but in disease, as in leucocythæmia, the white corpuscles are not only greatly increased in number, but vary considerably in size. Moreover, they are round, and present no pseudopodia. They are hyaline, and have a smooth, well defined limiting membrane, and some of them have nuclei which have undergone fission, just as in a cell that is about to segment. Hence, he is of the opinion that the white corpuscles multiply and increase in number whilst floating in the blood; other corpuscles may be observed, which are charged with granules of some proteid substance, resembling vitelline granules, or small masses of hæmoglobin; and, lastly, there are still other cells, which are charged with fat. M. Renaut has made some observations on the development of the red corpuscles of the lamprey, and gives the following succession of forms:—White corpuscle with nucleus proliferating, and protoplasm, not limited by an exoplasmic layer; corpuscle with nucleus proliferating, the protoplasm forming an uncolored disc, limited by an exoplasm; corpuscle with proliferating nucleus, protoplasm limited by an exoplasm, and forming a disc, more or less charged with hæmoglobin; red corpuscle with proliferating nucleus; and, finally, circular red corpuscle, with rounded nucleus.

## MICROSCOPY.

It has been decided by the Executive Committee of the American Society of Microscopists to convene the next annual meeting of the Society at Elmira, N. Y., August 17, 1882, at 10 A.M. It is thought that there will be papers and discussions enough at Elmira to occupy us four days; thus, by adjourning Friday evening, August 20, or Saturday noon, August 21, there will be ample time—for those who wish to do so—to reach Montreal in time for the meeting of the A. A. A. of Science on Tuesday, August 24.

At the Columbus meeting Mr. E. H. Griffith, of Fairport, N. Y., a member of Executive Committee of this Society, renewed his generous offer of a prize of a Bausch & Lomb half-inch objection of 98° air angle (about 0.76 numerical aperture), to be awarded as follows:

"The prize shall be assigned to the author of the best paper on the adulteration of some important article of food or medicine. The paper shall be accompanied by permanently mounted slides, illustrating the various points under discussion; all papers and slides to become the property of the Society. The papers and accompanying studies to be in the possession of the President on the first day of the next annual meeting. He shall appoint a committee of three to examine the same, and report the name of the successful candidate before the close of the meeting. The names of the competitors shall not be made known to any member of the committee until after the award is made. The award shall not be made unless there shall be more than one competitor."

In order to carry out Mr. Griffith's instructions the following rules are established: