The structure of the active albumen is highly labile, it is easily altered, and transformed into an inert mass. The protoplasm, being equally labile, *possesses its vital force in consequence of the balance between the attractive and repulsive forces of the proteid molecule.* When this balance is disturbed by an excess of the attractive power over the repulsive, we have a disturbance of the vital power. It must be confessed that this theory explains well the death of the living matter.

From this foundation Loew builds up his theory. With wonderful patience he has collected the notes from the literature, and succeeded in bringing together a reference-work of high rank, while, at the same time, original observations are frequently broadening out the scope and giving numerous suggestions for further investigation. As the work is altogether a work of facts, only a general view will find its place here.

The system is the following:

A. General Poisons.
1. Oxidizing poisons.
2. Catalytic poisons.
3. Poisons operating through the formation of a salt.
4. Substituting poisons.

B. Special Poisons.

1. Poisons which affect solely such acting albumen as has a special configuration and lability: toxical proteids.

2. Poisons which have a destructive effect on the structure of the cells, in consequence of their association with the active albumen of the protoplasm.

3. Poisons which have an indirect effect;
(*a*) checking the breathing power,
(*b*) acting by their own decomposition,
(*c*) altering the swelling up of organic bodies.

The toxical proteids (chapter V) are treated in full. "The discovery by Hammerschlag in Nencki's laboratory (1888) that a poisonous proteid could be isolated from the *Bacillus tuberculosis*, was succeeded by the important observation by H. Buchner (1889) that certain proteids are present in the blood of certain animals and have a poisonous effect on bacteria. Emmerich had already, in 1887, shown the destruction of bacteria in the circulation; then he succeeded in showing that the bacteria-killing properties of the blood rested in the albuminoid substances contained therein."

The multitude of facts makes it possible to give only the main features of Loew's theory here. Everybody who is interested in physiology and its progress knows that we must have views as well as facts in order to secure a constant progress. The importance of the new theory will be felt by all who are interested in medical science; it is one of the steps that show us that the time has come for establishing a special general physiology of animals and plants. All this made it a pleasure to the writer to turn the attention of fellow-workers towards it.

SOME OHIO MOUNDS.

BY HAROLD HEATH, DELAWARE, OHIO.

DURING the last few years several mounds in central Ohio have been entered and some of the data obtained has proved to be of considerable interest. Mounds similar to these have long been described under the title of Funeral Tumuli and Sacrificial Mounds, yet their true function seems to be doubtful even in the present day. They were about of equal size, varying from 40 to 50 feet in diameter and 15 to 20 feet in height, and without exception were situated upon some water course. In the cases where the land was still undisturbed a layer of vegetable mould covered the surface to a depth of between two and three feet. Beneath this covering came a layer of fine sand and gravel similar to that found in the sand bars of streams or rivers. This layer was always four or five feet thick. In making shafts extending perpendicularly through the centre of the mound, after passing through this gravelly layer, a rough altar was reached in four cases out of six, and in the other two ashes and charcoal were found. These altars were constructed of unhewn, waterworn bowlders piled in a rude fashion to form a mass having the average dimensions of 5.3 feet in length; 4.1 feet in width, and 2.4 feet in height. In two other cases, which have come to my notice, skeletons, evidently Indian, were found in this gravelly superficial layer above the altar. One skeleton was especially remarkable for its height, measuring when put up a trifle less than six feet. About and upon the altars were scattered ashes and charcoal, and dark masses of vegetable mould indicated decayed bits of wood. Portions of human skeletons and in one case that of some carnivorous animal were found, many pieces in a charred condition, indicating either human sacrifice or cremation. These altars were built before a rude pavement of stones similar to those composing the altar and were of about the same size, viz., about a foot in diameter. Beneath this lay a mixture of blue and yellow clay and gravel making up the greater portion of the mound. In one case layers of gravel stones about the size of a cricket ball were encountered lying in strata separated by about a foot of this clay-gravel mixture. These layers extended through a depth of nine feet. This "cement" was so compact and hard as to withstand almost like stone the most persistent attacks with pick and shovel. In most cases the work was abandoned after sinking the shaft to a depth corresponding to the height of the mound, although the clayey cement indicated that the lower surface of the structure had not been reached. In only one case when a depth of nineteen feet had been reached by means of excavations and blastings was a skeleton found. This was the skeleton of a man 5 feet 1 inch in height and it was so fragile in the damp tenacious clay that only portions of the bones could be extracted. The body lay partially upon the right side, one hand lying across the breast, the other extended along the side. The left leg was considerably flexed, while the right was extended. Lying at the side of the skeleton were two stone beads, a perforated bit of unio shell and two flakes of mica. A further excavation of six feet, and also large tunnellings at the foot of the shaft, failed to bring to light any more bones or implements.

In two other mounds implements were found in this thick cement—an axe in one and two fleshers and several rough spear heads in the other. In other localities a few cases have been reported where a kind of vault was found a short distance beneath the altar, containing one or more skeletons and generally some implements or ornaments, but so far as I can determine no such report has been made for this section of the country.

AN EYE PROTECTOR TO BE USED WITH THE MONOCULAR MICROSCOPE.

BY L. BREWER HALL, M. D., PHILADELPHIA.

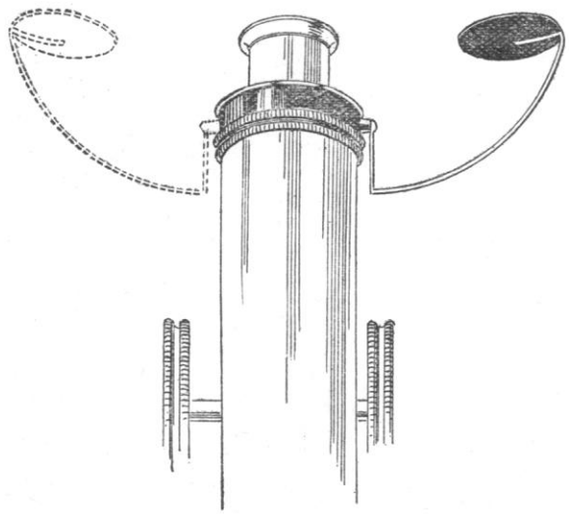
How often have we heard persons exclaim, upon looking into a binocular microscope for the first time: "Oh, how much easier it is to see with this instrument, and how much plainer everything appears;" and this *with one field quite dark*, which provokes a smile from the amateur. I am fully convinced, however, that we cannot ascribe such expressions wholly to dissimulation or flattery, or even self-deception, and for the following reasons:—

When one eye is looking through an instrument like the microscope, and the other, being open, is regarding the objects outside the tube, an image is formed upon each retina, and the normal action of the mind is to blend them into a single picture. This being impossible from

the difference in the objects, a strong mental effort is required to disregard the impression in one eye, and fix the attention upon the other only. Again, when we close one eye by the contraction of the orbicular muscle, or by pressure, as with the hand, we cause contraction of the accommodating muscle, also, and that of the open, occupied eye, as well. I have proof of this many times each day while examining eyes by the ophthalmoscope; but we are all familiar with the spasm in *both* eyes when a particle of dust is beneath the lid of one only; and, again, we are conscious of an effort amounting almost to an impossibility, before training, of keeping one eye open and the other shut.

Both these conditions are present and are factors in the fatigue which accompanies the use of a monocular instrument, and are strong reasons for employing a binocular one, when possible. Of course, each form has its own especial use and place, but this is not our present purpose to discuss. It is to overcome these sources of fatigue in the use of the monocular instrument that an eye-protector is used.

When anything is placed far within the focus of an eye no image of it is formed upon the retina, and it becomes invisible. If, then, it should be opaque and large enough to cover the whole field of vision, it is not only invisible, but shuts off the sight of all other objects as well, leaving the mind free to attend to the image on the retina of its fellow. On this principle quite a number of devices have been proposed and used, among which a plain card, perforated and slipped upon the tube, has been, perhaps, the most frequent. This has to be placed low down in order to be out of the way of the face, and thus requires to be so large to cover the field of vision that it hides the stage and interferes with the adjusting screws.



Another consists of a small plate extending horizontally from the cap of the ocular. In this the edge must be cut away to admit the bridge of the nose. This gives it a curved form, and prevents its being used before each eye alternately, except by removal and inversion. It must also be removed with each change of ocular. These removals and replacings demand so much time that most workers think it hardly worth the trouble.

The form that I have found satisfactory, after use for several years, consists of a small disc of blackened brass, about the size and shape of a spectacles glass, and supported near the eye by a wire extending from its outer margin obliquely downward to a point on the tube low enough to be out of the way of the nose, then bent upwards, parallel to the tube, but not touching it, and attached to a cut-ring which clasps the top of the draw tube beneath the ocular. The accompanying drawing shows it in place, and will need no further explanation.

The advantages of this form are: First—The small size of the disc and support interfere the least possible with the adjusting screws and view of the stage. Second—It is easily adjusted to the eye-distance of any worker. Third—It is not in the way of the nose. Fourth—It can be easily swung around before either eye, without removal. Fifth—It is not disturbed in changing oculars. Sixth—Any mechanic can make one at a small expense. The one I am using was made by Zentmayer, of this city.

LETTERS TO THE EDITOR.

***Correspondents are requested to be as brief as possible. The writer's name is in all cases required as a proof of good faith.

On request in advance, one hundred copies of the number containing his communication will be furnished free to any correspondent.

The editor will be glad to publish any queries consonant with the character of the journal.

BIRDS THAT SING BY MOONLIGHT.

THE reading of the very interesting article in *Science* for Dec. 2, entitled "Birds That Sing in the Night," by Morris Gibbs, brought vividly to my mind the pleasure I have felt in listening to nocturnal bird music.

The birds which I have most frequently heard sing at night here in southeast Kentucky are of different species from those mentioned by Mr. Gibbs, prominent among them being the Oven-Bird (*Seiurus aurocapillus*), which, although I have never seen any mention of the fact in print, sings regularly on moonlight nights.

On such occasions the song is usually the extatic, quivering jumble of warble and twitter so often heard from this bird at dusk, when he flies in zig-zag lines and short curves up above the tops of his native woods, and as quickly descends, all the time bubbling over with melody.

Almost every bright moonlight night in spring and early summer this song may be heard at intervals, breaking with silvery sweetness into midnight's tranquility.

Another bird, often heard on moonlight nights, though by some it is not considered worthy the name of a song, is that of the Yellow Breasted Chat (*Icteria virens*).

The Cuckoos are also often heard by moonlight during their southward migrations after all the resident individuals have departed.

I have frequently noticed that a bright fire in or near the woods at night called forth sleepy chirps and snatches of song from various species of birds. JOHN B. LEWIS.

THE CAMBOJAN KHMERS.

HAVING some time ago carefully studied the question of the origin of the Khmers of Cambodia, and the result of my enquiries having been published in the *Revue d'Anthropologie* (3rd Ser. Vol. I, 1886, 2d fasc.), under the title of *Les Cambodgiens et leur origine*, I may perhaps be allowed to make some remarks on Prof. A. H. Keane's letter which appeared in *Science* for August 4. That the Khmers belong to the white race, whether this be called Caucasian or not, cannot well be denied, and Mr. Keane is doubtless entitled to the credit of having first pointed out the fact. But that the Khmers are, as he states, true aborigines in the country where they are now found is very questionable, and indeed the best French authorities agree with Dr. Maurel in deriving them from India. The date of their arrival in Cambodia is given by M. Moura, and is fixed by the annals of the ancient Cambodian empire as having taken place about 543 B. C. According to the view elaborated in the paper above referred to, the ancestors of the Khmers were allied to the Tandavas of the Hindu epic, the Mahabharata, and I have endeavored