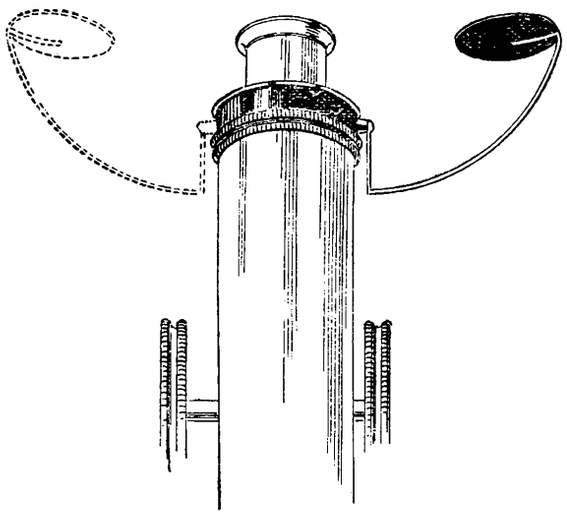
the difference in the objects, a strong mental effort is required to disregard the impression in one eye, and fix the attention upon the other only. Again, when we close one eye by the contraction of the orbicular muscle, or by pressure, as with the hand, we cause contraction of the accommodating muscle, 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

to prove that they belonged to the Rajpoot-Jat stock of N. W. India.

As to the language of the Khmers, M. Moura, judging from the fact that it contains many Sanskrit or Pali words, supposes it to be of Sanskrit or Pali origin, which agrees with the Indian origin of Cambodian civilization and religious ideas, but not with Mr. Keane's statement that the language of the Khmers is "radically distinct from the Indic (Sanscritic branch of the Aryan), but closely allied to the untoned polysyllabic Malayo-Polynesian linguistic family." M. Moura affirms that "one of the distinctive features of the genius of the Khmer language" is its monosyllabic form. How far this is consistent with its supposed Sanskrit or Pali affinity I am not concerned to say, although it is noteworthy that words derived from Pali have been reduced by shortening to the monosyllabic form. From a comparison of the vocabularies given by M. Moura, I much doubt whether there is so close a relationship between the Khmer and the Malay languages as Mr. Keane supposes. The latter is more nearly related than the former to the primitive Cham, and while Malay has derived certain foreign elements from the south, the Khmer has obtained its foreign elements from the north. On this subject I would refer to a paper by myself on "The Asiatic Affinities of the Malay," published in the Proceedings of the American Philosophical Society, Vol. XXVIII., June 3, 1890. In any case, I cannot see how the fact of the Khmers having untoned polysyllabic speech could be evidence, as supposed by Mr. Keane, that they were aborigines, nor is this proved by the existence of allied so-called wild bribes. C. Staniland Wake.

Chicago, Aug. 12.

Oregon Wax.

If Mr. C. D. Hiscox will refer to the letter of Mr. James Wickersham, in *Science* of July 7th, he will find that the wreck origin of the Oregon wax is not an "absurdity." Having examined specimens of the wax in question I beg to state that it has nothing in common with ozocerite, with which I am perfectly familiar, but is apparently beeswax, pure and simple. It is of a yellowish-brown color, with granular fracture, and is lustrous on cut surfaces, but not resinous. Its odor is honey-like and characteristic. A hasty chemical examination for cerotic acid showed 6.7 per cent in a sample cut from near the surface of one of the lumps, this figure being low for pure wax and yet rather higher than is usually the case in the impure, so-called, beeswax of commerce. Mr. Hiscox will remember that ozocerite yields no free acid on treatment with alcoholic potash. Charles Platt.

Buffalo, July 25.

Bacteria in Hens' Eggs.

In *Science* of August 4, Mr. Brannon asks for some information in regard to the decay of eggs.

Some two years ago a student in the hygienic laboratory was given the problem to determine whether the putrefaction of eggs was due to bacteria entering the egg as it passed through the oviduct or through the shell after the egg was laid. The results obtained were not satisfactory or conclusive, but as they may throw some light on the subject they are given (from memory) for what they may be worth. Many cultures were made from stale eggs in order to determine whether the putrefaction was due to a specific germ or to a number of different germs. Several species were found.

A healthy, laying hen was obtained and after repeated washings in a solution of bichloride of mercury, followed by sterile water, she was placed in a sterilized cage. The hen continued to lay regularly every other day. The eggs were obtained as soon as possible after being laid, and a portion of them were placed in sterilized cotton and then in an incubator. If my memory is not at fault, all of those eggs decayed and swarmed with bacteria.

The remaining eggs were taken as soon as laid, and cultures were made from their contents. Some of these culture tubes developed; others remained sterile.

After some days the hen was killed, and with proper aseptic precautions culture tubes were inoculated from various portions of the oviduct. Most of these tubes developed. It would seem from this one case that the