served on at least three occasions, and has been suspected, without being positively identified, a much larger number of times.

The Transit Circle was made by Troughton and Simms, London, in 1876 and was mounted in 1877. The construction of the instrument and the method of mounting are quite similar to the instruments in use at Greenwich, and Harvard College Observaory.

The telescope has a clear aperture of 6 inches, and a focal length of 6 feet 4 inches. The axis is cast in a single piece, into which fit the steel pivots, 3.50 inches in diameter. The Y's are of gun metal, and their bearing surfaces 2.50 inches long, 0.74 inches wide. The piers are of iron, and are firmly bolted to heavy stone caps which rest upon brick foundations. The circles are 24 inches in diameter, divided to 5′, and read by four microscopes each.

The reticule in the focus of the telescope carries 15 vertical and 5 horizontal threads—the vertical threads being all carried by the Right Ascension micrometer screw, and the horizontal threads by the declination screw. There are no fixed threads in the field.

The Transit Circle is furnished with two collimators having object glasses of 4 ft. 3 in. focal length and 4.33 in. aperture. The distance between the bearing points of the collimator Y's is 3 ft. 10 in. In the focus of each collimator are fixed two close vertical threads (about 5.3″ apart) and one horizontal thread. In the ordinary time observations it is customary to observe for collimation immediately before the observations of star transits, and then set the micrometer so as to destroy the error in collimation.

The Standard Sidereal Clock of the Observatory is Frodsham No. 1369. It was mounted in 1877, and has been running for two years past on a very small and constant rate.

In addition to these instruments, the Observatory is furnished with an excellent 4-in. Clark Comet Seeker, an Altazimuth by Gasella, and the usual barometers, thermometers, etc.

The work now being carried on is chiefly equatorial, and may be divided into two parts, as follows:

1. Double Star Work. A list consisting chiefly of binaries which have been neglected for some years (some of them for ten or twenty, or even thirty years) and will well repay observation. Besides these, a selected list of Burnham's stars, which are suspected of binarity, or which are quite new and have not been observed. Most of these stars are in the southern sky, and including the list for personal equation, will make a total of about 500 doubles. This work is well under way and will probably be concluded within a year.

2. The second part of the equatorial work consists of observations, descriptive and micrometric, upon planets and their satellites, and includes a series of observations extending over several years, upon the satellites of Saturn, and observations upon the red spot of Jupiter since its discovery at Glasgow in 1878.

With the Meridian Circle, no work is done beyond the ordinary observations for time.

The Time-Service of the Observatory, inaugurated within the past year by Prof. H. S. Pritchett, has met with well deserved success, and its value is fully appreciated by the people of the State. Two time balls are dropped by the Observatory clock—one in St. Louis and one in Kansas City—and the clock signals are regularly distributed over a large and constantly increasing area. Owing to its position—almost exactly one hour west of Washington—the Morrison Observatory will doubtless be largely depended upon in regulating the time of the Mississippi Valley, if any of the schemes for "Uniform Time" which have recently been proposed are ever adopted.

Though so well equipped instrumentally, Morrison Observatory, like many a similar institution of longer standing, is sadly crippled for want of funds: its income being barely sufficient for the support of a director without assistance. It is greatly to be regretted that one of the most promising observatories in the country should be thus curtailed in its usefulness, merely for want of proper financial support. W. C. W.

DISCOVERY OF AN ASTEROID.

The Smithsonian Institution has received from M. Foerster, of Berlin, the announcement of the discovery by M. Palisa, at Pola, on the 20th of May, 1881, of a planetoid of the thirteenth magnitude, in

R. A. 15h 3m
Dec. —23° 2′

with a daily motion of 8^m *north.*

CORRESPONDENCE.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. No notice is taken of anonymous communications.*]

LOCUSTS AND SUN SPOTS.

To the Editor of "SCIENCE:"

SIR: It may concern some of your readers to know that I have just made the interesting discovery, that the multiplication and migration of the Rocky Mountain Locust (*Caloptenus spretus*), has been hitherto in exact agreement with the minima of Wolf's sun spot cycles as given (Mem. As. Soc. vols. XLII and XLIII), and its decrease has as nearly accorded with the maxima, there not being a year's difference. On European areas, it may be remarked, insect migration but *rarely agrees* with these maxima and minima, the chief periods being obtainable by counting the elevens since 1846. There likewise exists this marked difference, in that while the American locust spreads to the east and west of south, European migrants come north and east.

It would be important to determine the multiplication of the Corn Weevils in relation to the sun spots. Cannot the trade keep diaries? As the more destructive kind comes from the tropic, the minimum period should be dreaded. A. H. SWINTON.

GUILDFORD, ENG., *May*, 1881.

THE VIEWS OF DR. HOLMES UPON THE PROPOSED REVISION MODIFICATIONS OF ANATOMICAL NOMENCLATURE.

We are permitted to publish the following letter from Oliver Wendell Holmes to Professor B. G. Wilder respecting the articles on "Anatomical Nomenclature" which appeared in Nos. 38 and 39 of this journal. It may not be generally known to our readers that "The Autocrat of the Breakfast-table" has been for many years the Professor of Anatomy in the Harvard Medical School. BOSTON, May 3, 1881.

Dear Dr. Wilder:

I have read carefully your papers on Nomenclature. I entirely approve of it as an *attempt*, an attempt which I hope will be partially successful, for no such sweeping change is, I think, ever adopted as a whole. But I am struck with the reasonableness of the system of changes you propose, and the fitness of many of the special terms you have suggested.

The last thing an old teacher wants is, as you know full well, a new set of terms for a familiar set of objects. It is hard instructing ancient canine individuals in new devices. It is hard teaching old professors new tricks. So my approbation of your attempt is a *sic vos non vobis* case so far as I am concerned. There is one term which I do not quite fancy, *pero*, which you couple with *pes* in naming the rhinencephalic lobe. I should prefer the old term *bulbus* with *theca* unless there is some objection I do not see.

What you have to do is to keep agitating the subject,

to go on training your students to the new terms—some of which you or others will doubtless see reasons for changing—to improve as far as possible, fill up blanks, perhaps get up a small manual in which the new terms shall be practically applied, and have faith that sooner or later the best part of your innovations will find their way into scientific use. The plan is an excellent one, it is a new garment which will fit Science well, if that capricious and fantastic and old-fashioned dressing lady can only be induced to try it on.

Always very truly yours,
O. W. HOLMES.

A CURIOUS EGG.

E. E. BARNARD.

One of my hens of the "Dominico" breed is accountable for the presence to-day of a most remarkable egg, which was found in the hen's nest. This singular object measured about three inches in its longest diameter, a round oval in shape, not like the ordinary egg with a large and a small end. The shell was thin and soft to the touch, resembling the "skin" that is found inside an eggshell. Pressing on one end of the egg, a hard object was felt inside the shell. Opening the egg, by cutting with a sharp knife, two eggs were found, one perfect with a hard shell, slightly smaller than the ordinary egg, the other perfect in every respect, save that it possessed no shell. The egg with the shell was enclosed in the white of the other. These two eggs occupied the two ends of the original shell. Upon opening the one with the hard shell it was found to be perfect. Putting the two eggs in separate cups, the one which had the hard shell was slightly smaller and its yolk of a pale yellow; the yolk of the other was somewhat deeper in color.

Here we have a rare phenomenon; first a large egg with slightly soft shell; inside this two eggs, one perfect in a hard shell, the other without shell but otherwise perfect.

NASHVILLE, Tenn., *May* 9.

BOOKS RECEIVED.

A MEMORIAL OF JOSEPH HENRY. Published by order of Congress, Washington, 1880.

The present volume presents in a handsome and convenient form the historical facts relating to the career of Professor Joseph Henry, and a record of the various ceremonies and memorial exercises celebrated after his death in honor to his memory.

The memorial exercises at the Capital include addresses by President Garfield, Hannibal Hamlin, Robert E. Withers, Professor Asa Gray, William B. Rogers, General Sherman and others.

The concluding words of President Garfield's address may well be quoted as conveying the general esteem in which Professor Henry was held by all who knew him. "Remembering his great career as a man of science, as a man who served his Government with singular ability and faithfulness, who was loved and venerated by every circle, who blessed with the light of friendship the worthiest and the best, whose life added new lustre to the glory of the human race, we shall be most fortunate, if ever in the future, we see his like again."

NOTES.

RECENT experiments by M. Grehaut, prove that the quantity of carbonic acid exhaled by any one individual of an animal species is about constant. Fifty litres of air passed through the lungs of a dog, 9kg. weight, yielded 2.747 gr. of CO_2. Eight days after the experiment was repeated, and the CO_2 was 2.810 gr. In man, the same volume of air circulating through the lungs, receives 3.333 gr. of CO_2. Irritations and inflammations of the respiratory mucous membrane (*e. g.* through inhaling sulphurous acid), considerably decrease the exhalation of CO_2. The gas then tends to accumulate in the blood.

GALVANIC GILDING.—M. Rod gives the composition of a bath to be used at temperatures from 50° to 80° C. It consists of 60 parts crystalline phosphate of soda, 10 parts bisulphate of soda, 1 part cyanide of sodium, 2½ parts chloride of gold, and 1,000 distilled water. In order to prepare the bath the water is divided into three portions of 700, 150, and 150 respectively. The phosphate of soda is dissolved in the first lot, the chloride of gold in the second, and the other ingredients in the third. The two first portions are gradually mixed together, and the third is then slowly added. A platinum plate is used as anode.—*Le Monde de la Science.*

RADIATION THROUGH EBONITE.—Captain Abney exhibited at the Physical Society of London, a number of photographic negatives taken by himself and Colonel Festin by radiation through thin sheets of ebonite. The light from the positive pole of an electric lamp was sent through a thin sheet of ebonite $\frac{1}{64}$in. thick, and photographs taken showed the radiation to have a low wave-length, from 8,000 to 14,000. The carbon points of the lamp could be photographed through the sheet, and Colonel Festin observed the sun's disc through it. The ebonite showed a grained structure, and different samples of ebonite gave different results, but all gave some result, in course of time at least; old ebonite, like that used in some of Mr. Preece's experiments, scattering the light more than new ebonite. Dr. Moser exhibited the passage of the rays through the ebonite to the audience by means of a galvanometer. Professor Guthrie observed that Captain Abney had proved that light as well as heat traversed the ebonite, and Dr. Coffin stated that compositions of ebonite, apparently the same, might vary considerably.

PHOTOGRAPHIC PHOTOMETRY.—A promising application of photography to precise measurement of phenomena of light has been recently tried by M. Janssen. The method is advantageous in that photography reveals the action of the extremely weak luminous and the ultra-violet rays; but the chief advantage lies in the permanence of the results as against the fugitive nature of ordinary photometric comparisons, which, too, require the simultaneous presence of the two light sources. The various amounts of metallic deposit on the photographic plate cannot well be weighed, so M. Janssen measures by the degree of opacity produced. His photometer consists of a frame with sensitised plate, before which is passed at a known rate of uniform motion a shutter having a slit. If this slit were rectangular, a uniform shade would be produced on the plate; but by making it triangular he obtains a variation of shade, decreasing from the side corresponding to the base of the triangle to that corresponding to the apex. It is further proved that the photographic deposit does not increase as rapidly as the luminous intensity. Now, to compare the sensibility of two plates differently prepared, they have merely to be exposed successively in the frame under like conditions, and the points where they show the same opacity being compared to the points of the triangular slit corresponding to them, the ratio of the apertures at those points expresses the ratio of sensibility. Thus the new gelatino-bromide of silver plates are proved to be twenty times as sensitive as the collodion plates prepared by the wet process. Again, to compare two luminous sources, they are made to act successively on two similar plates in the photometer, and the points of equal shade in the plates indicate, as before, the relation sought. M. Janssen has compared the light of the sun and some stars on these principles, preparing from the former "solar scales" (with uniform degradation of shade), under exactly determined conditions as to sensitive layer, time of solar action, height of the sun, etc. Circular images of stars are obtained by placing a photographic plate a little out of focus in the telescope, and a series of these, got with different times of exposure, are compared with the scales obtained from sunlight. M. Janssen will shortly make known some of his results.