SCIENCE.

FRIDAY, MARCH 20, 1885.

COMMENT AND CRITICISM.

A THOROUGH and systematic scrutiny of the heavens for stars of large parallax, or stars comparatively near our solar system, has long been regarded a desideratum in astronomy. The bearings of such research on the laws of distribution of the stars throughout the universe of space are such that no substantial progress in the discovery of these laws can be made until the parallaxes, or what is the same thing the distances, of a large number of suitably chosen stars have become known. The determination of the parallax of a star necessitates the exercise of the utmost skill of the observer, and taxes to no small degree the judgment of the computer in reducing the observations; and only a few astronomers have been known to undertake the task. The parallaxes of two or three stars only have been determined by American astronomers, among whom Professor Hall of Washington is foremost, if not alone. He has also called attention in the *Analyst* to the facility with which the work may be conducted by a careful observer, and has developed the necessary formulas of reduction in such attractive shape that it is rather remarkable that so few of our observatories have engaged in the work. We commend it to good observers looking about for the opportunity of employing a moderate instrumental outfit to the best advantage.

When, however, we come to the determination of parallaxes in bulk, astronomers everywhere seem to have shrunk from the undertaking, each waiting for another to lead, until Dr. Ball, astronomer royal of Ireland, made a serious beginning of the task, about eight years ago, at the observatory of Trinity college, Dublin. While others have been content to measure and reduce the parallax of a single star occasionally, Dr. Ball is encouraged by the contemplation of a working-list of some nine hundred stars, and he has already completed and published his work upon nearly one-half of this number, — an unparalleled labor in this branch of astronomy.

We should mention here, also, the determinations of stellar distances made in the southern hemisphere by Dr. Gill and Dr. Elkin, the results of which indicate extraordinary precision of measurement. With renewed enthusiasm in this research, these astronomers have outlined a plan of operations which contemplates an extended parallactic survey of the stellar heavens, and which may be expected to be brought to a conclusion in eight or ten years. Dr. Elkin is already engaged in the preliminaries of the work with the fine heliometer belonging to the observatory of Yale college; and Dr. Gill has only lately placed with the Messrs. Repsold of Hamburg the contract for a new heliometer of seven inches aperture, — the largest ever constructed. In about two years from the present time he will begin at Capetown his part of the work of carrying out this conjoined programme of parallax research.

MANY HAVE remarked the gradual assimilation of scientific discoveries by the οἱ πολλοι. To us the process seems comparable to the percolation practised by the pharmacist. He takes good alcohol, and pours it on the drug of which he desires to extract the active principle. The spirit gradually soaks down through the substance, extracting its soluble portions, and issues from the lower end of the percolator, much changed in character. Usually, in the case of the druggist, the result is satisfactory; but, when scientific facts — the pure alcohol of science — are concerned, the additions received by percolation are almost invariably of such a nature that the percolate is useless. This is

strikingly exemplified in the case of a recent pamphlet containing 'a few facts about carpets;' but the result is the more interesting, since in this one example the analogies of the various stages of percolation are clearly seen. The writer starts with his pure *spiritus vini Gallici*, good in itself, but capable of being considerably changed by the maceration of improper substances. This alcohol is the fact, capable of scientific demonstration, that moths destroy carpets. Thus he runs on: "Moths. — Many are not aware that all the present damage is done when the millers commence to fly, as their very presence indicates the absence of the worm. It is to prevent the miller's incubating, that precautions should be taken." The alcohol with the next step begins to be discolored in the following manner, though to a slight extent: "A large proportion of the millers never hatch eggs, but die without causing any harm." We will let it soak awhile, and then this result is found: "The male miller, which does not fly, but runs very rapidly, is easily detected by his triangular-shaped figure; but, keeping himself out of sight, he is not so easily found."

Dropping our simile for the moment, we wish to call attention to a peculiar and reprehensible bit of wickedness of the 'males' in hiding from their lawful 'better halves;' for, so our author says, "his hiding explains the devious flights of the female in his search." Give ear now, good housewife, and recollect, that, besides protecting your carpets, you are avenging a great slight upon your sex — a slight which brings about a perpetual leap-year — by following out to its fullest extent the suggestion embraced in the following sentence, which, to return to our simile, renders our percolate still darker: "The killing of one male is equal to the extinction of many ordinary millers." Our alcohol is now almost saturated. Let us draw the stopper from the percolator, and allow the fluid to run out. It appears as follows: "The male miller is commonly known by the name of 'silver-fish.'" The process is complete; we have obtained our percolate; by degeneration our moth has evolved a thysanure. Our alcohol is spoiled: what shall we do with it?

A newspaper rumor from Washington, printed in the Boston *Advertiser* last Monday, to the effect, that, in consequence of a charge of extravagance in the conduct of the U. S. geological survey, Professor Shaler of Cambridge was 'talked of to succeed Major Powell,' brought out an immediate rejoinder from the former on the following day, defending the survey from a charge so injurious and so untrue. "It is my firm belief," says Mr. Shaler, "that no one of the scientific departments of the government has been so well and economically managed as the geological survey since it came under the able direction of Major Powell." The same conclusion will be reached by any one who gives the subject any proper attention, or who is acquainted with the character and methods of the able chief of this survey. A change made on such a charge, without honest and open investigation, would be iniquitous: after such investigation, there could be no doubt of the result.

LETTERS TO THE EDITOR.

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

Solar eclipse of March 16.

The solar eclipse was very successfully observed here to-day, under good atmospheric conditions. Cumulus clouds were scattered here and there about the sky, but fortunately they did not obscure the sun at any critical moment.

The photographic apparatus was in perfect working-order, and about fifty pictures of the eclipse were secured, with the assistance of Mr. J. L. Lovell. All of these developed well; and the exposures were so distributed with reference to the times of the two contacts, and to the occultation of solar spots, that they may be expected to give good results for the relative positions of the centres of the sun and moon.

The last contact was also observed optically by Professor Esty, Mr. B. Rush Rhees, Mr. Thomas C. Esty, and myself, the results all agreeing within seven seconds. David P. Todd.

Lawrence observatory, Amherst, Mass., March 16.

Hereditary abnormality of sense-organs.

Dr. Mason's note on 'Hereditary malformation' (*Science*, v. 1885, 189) reminds me of a case in which inherited abnormality of sensitiveness in sense-organs is of opposite signs.