



The Journal of the Astronomical Society of India.

VOL. III.]

SESSION 1912-1913.

[No. 4.

Report of Meeting of the Society held on Tuesday, the 28th January 1913.

THE Ordinary Monthly Meeting of the Astronomical Society of India was held on Tuesday, the 28th January 1913, in the Imperial Secretariat (Treasury Buildings), at 5 P.M.

Colonel BURRARD, R.E., C.S.I., F.R.S., *Vice-President*,
in the Chair.

C. V. RAMAN, ESQ., M.A., *Secretary*.

The minutes of the previous meeting were read and confirmed.

The following presents received since the last meeting were then announced and the thanks of the Society were accorded to the donors :—

1. Monthly Notices of the Royal Astronomical Society, Vol. LXXIII, No. 1.
2. Journal of the British Astronomical Association, Vol. XXIII, No. 2.
3. Revista De Astronomia, Anno VI, No. 12.
4. Bulletin of the Astronomical Society of Barcelona for December 1912.

5. Monthly Weather Review of the Alipore Observatory for August 1912.
6. From Jogesh Chandra Roy, Esq., M.A., Vidhyanidhi, F.R.A.S., F.R.M.S., etc., the following works :—

Copy of Siddhanta Darpana.

- „ [^]Amâder Jyotishi O Jyotish, Vol. I.
 „ Hindu Almanac Reform.
 „ Sanku-nirman.

The names of the following gentlemen who had been elected as members since the last meeting were read and their election was then formally confirmed :—

1. Nagendra Bhusan Mukerjee, Esq., B.L.
2. Niranjan Pakrasi, Esq., B.A.
3. Haridas Das, Esq., B.E.

Chairman.—I will ask Mr. Tomkins to read his paper on “The Construction of a Cheap Telescope.” (*Paper read by Mr. Tomkins.*)

Chairman.—Are there any remarks to be made ?

Mr. Raman.—An interesting point mentioned by Mr. Tomkins is that before the polishing is complete, the mirror shows a fine image of the sun on the wall and this before the polishing proceeds very far.

Mr. Tomkins.—The polishing is nothing more or less than the continuation of the grinding. Coarse emery has some very big grains in it, and it leaves deep pits in the glass. The process of fine grinding simply reduces these and the polisher carries on the operation until you cannot see them.

Chairman.—Ladies and Gentlemen, I would ask you to accord your hearty vote of thanks to Mr. Tomkins for his paper.

Chairman.—I would now ask Mr. Mitchell to read his paper on “The Erection of an Observatory.”

Mr. Mitchell.—At the request of the members of the Society I shall describe simply a small observatory I have erected recently at Bankura. (*Paper.*)

Chairman.—Have you any slides to show ? (*Three slides.*)

Chairman.—Has any one any remarks to offer ?

Mr. Tomkins.—I should like to congratulate Mr. Mitchell on the labour which he has spent in putting up his observatory. The drilling of 500 bolt holes is in itself a pretty stiff job apart altogether from the other operation which he has described.

Chairman.—Ladies and Gentlemen, I am sure you will agree with me when I say Mr. Mitchell has given us an extremely interesting paper.

Chairman.—I will ask Mr. Raman to read the paper on "The Density of the Tonk Meteorite" by Professor E. P. Harrison, Ph.D., I.E.S., and Babu Sailendra Nath Ghose.

Mr. Tomkins.—Before Mr. Raman reads the paper I may say that the Meteorite was presented to the Society by the Maharaja of Jalawar as has already been mentioned in the JOURNALS. This paper is connected with the density which is the part of the investigation that Dr. Harrison has taken up. (*Paper read by Mr. Raman.*)

Mr. Tomkins.—There is one interesting point which Dr. Harrison mentioned in his letter to me when he sent his paper. It is that the density tallies almost exactly with Garnet. Garnet's is 3.8 and the investigation shows the meteorite to be the same.

Mr. Mitchell remarked that it had generally been taught that meteors are nearly pure iron, and this particular specimen seemed to be very light in comparison with the constituents of the earth.

The Chairman then observed that the average density of the rocks on the surface of the earth is only 2.6, and that the modifications which a meteor would undergo in consequence of the intense heat generated by its passage through the atmosphere would probably be of importance.

Mr. Mitchell.—We have had meteors almost pure iron.

Mr. Tomkins.—This for India is I think a unique specimen. There are only 8 known specimens. This is the ninth. Other meteors are very much heavier and are largely iron. This one is a carbon meteor, or at any rate was thought to be so, but the density does not bear it out. The result of the chemical analysis will be interesting.

Mrs. Voigt.—Can't you break off a part and analyse it?

Mr. Tomkins.—Yes, that is just what they are going to do.

Mr. Raman.—A very remarkable shower of meteors that fell some time ago in Arizona (U. S. A.) is described

in a recent issue of the American Journal of Science. More than 14,000 stones were picked up. I have had a note regarding this put in our JOURNAL for January.

Mr. Tomkins.—I have only one point to add—it affects the Maharaja who very kindly sent the meteorite. Members may like to know that he has just been elected a Fellow of the Royal Astronomical Society and to send him our congratulations.

Chairman.—I would now ask you to accord your thanks to Dr. Harrison for his paper.

Mr. Tomkins then showed three slides of the Comet C of 1908. The meeting was then adjourned.

The Construction of a Cheap Telescope.

BY

H. G. TOMKINS, C.I.E., F.R.A.S.

PAPER III.

IN my last paper the stage was reached at which the mirror was fine-ground ready for polishing, the surface being even all over from edge to edge and finely ground enough to enable the pitch to be seen in outline through it.

We come now to the polishing, and there are three ways of doing this—namely with pitch, rosin and paper.

In this country I have always found pitch give trouble either by scratching the mirror or else from being too soft and losing shape, and in my own hands it became such a nuisance that I gave it up. It is, however, used by professionals in preference to the other methods and is of course considered to be *the thing*.

Unquestionably the most simple polisher is the one made of paper and I prefer it for small mirrors such as we are now making on account of its cleanliness, ease of handling and simplicity in making. I will describe it first.

Thoroughly wash the glass tool and the tub so as to get rid of every trace of emery. The mirror will of course have been similarly washed and put aside until the polish is ready. Now select a nice even piece of white paper of good texture and smooth surface large enough to cover the tool. Care