SCIENCE:

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JOHN MICHELS, Editor.

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THERE appears to be an open question between Professor Ormond Stone, of Cincinnati, and Mr. Rock, of Washington, as to whether the nucleus of Comet b, 1881, divided on the night of the 6th instant.

Both astronomers appear to have observed the comet at the same time, but have recorded somewhat different results.

On reference to "SCIENCE," July 16th, page 334, will be found a statement of what Mr. Rock saw, as follows:

On the 6th of July the comet was observed by Mr. Rock of the Naval Observatory:

"A bright tongue of light about one revolution long in direction of tail, with a slight node near end and curved."

In explanation of this Mr. Rock said: "I observed the comet at the time of its lower culmination about twenty minutes after midnight. The nucleus did not appear to be divided, but a bright band streamed out in the direction of the tail. This band was about fifteen seconds of the arc in length. Near the end of it was a bright spot, and that portion of the band extending beyond it was curved in the same general direction as the tail, but in a somewhat shorter arc."

And then referring to Professor Stone's report of a division of the nucleus, he adds:

"It is possible that the observer at Cincinnati was not able to distinguish the band of light which I saw uniting the nucleus and the node, and so concluded that he saw two nuclei. When I first observed the comet, on June 28, the coma was apparently homogeneous as it also was on July 2. On June 28, however, there were two spurs of light spreading away from the opposite sides of the head like angel's wings. On July 2, I did not observe these at all or they were very faint. On July 6, I observed the appearance that I have described. It may be that this was the same thing that I saw on June 28, observed from a different point of view. It is not improbable, however, that the nucleus has really divided. Comets appear to have a tendency to do that."

In another part of this issue will be found a letter from Professor Stone, reiterating his former claim of having observed a division of the nucleus of this comet on the night of the 6th instant.

"He states that on the 6th of July, during observations made between 10 p. m. and 3 a. m., he saw a bright red jet projected from the nucleus into the dark region on the side of the nucleus opposite the fan, which was totally different in appearance from those usually seen. There was a dark line separating it from the nucleus. During the first few minutes a decided change took place. The jet *seemed to separate* and form a nucleus of its own, so that for a time the comet appeared double."

It may assist in a solution of this subject if our readers inspect the continuation of the interesting drawings of this comet, made by Professor Edward S. Holden, to be found on another page of this issue.*

The drawings we published last week showed the appearance of the comet on 24th, 25th, 26th, 27th, 28th and 29th of June, and the nights of the 8th and 11th of July. Those presented in this number give views of the comet for the nights of the 13th, 14th, 17th and 18th of July.

The drawing for the 11th of July is interesting as showing "a dark narrow channel between the following side of the nucleus, and the envelopes," but, added Professor Holden, "the nucleus is not double." But the drawing we offer this week for the 18th instant, is quite remarkable as showing a decided division of the nucleus, and Professor Holden remarks in his note to it, "THE NUCLEUS IS DOUBLE (it has not been previously)," and those who inspect this drawing will find two nuclei.

The drawings of Professor Holden and the observations of all who have watched this comet, show conclusively that the form of the nucleus changed very rapidly and continuously, and as we have the best evidence that the nucleus divided on the 18th instant, it makes it very probable that a similar phenomenon occurred on the 6th of the same month, especially as Professor Stone is an accomplished observer, and not likely to be mistaken in his description of the optical appearance of a celestial object.

AN experiment illustrating "fatigue" in the sense of hearing (corresponding to fatigue of the retina) has been described by Herr Urbantschitsch. Two tubes are adapted to the ears, and adjusted, so that a given tuning-fork is heard equally on both sides. Now strike the fork strongly, and let it sound a little through one tube; then deaden it somewhat by touching. The ear on that side fails to catch the weakened sound, but on transferring the fork to the other ear, the sound is heard distinctly. If the weaker tone presented be of different pitch from the stronger, it is heard on both sides equally. The failure of sensitiveness in the other case is very transient.

* On account of delay in engraving these drawings, they are reserved until next week's issue.