dwells on the plains east of the Oregon mountains, but no definite locality is given under the description of *F. oregonensis*.

The indefiniteness of the opening paragraph where the forms are stated to occur, both east and west of the mountains, makes this name apparently applicable to either the Puma of the Rocky Mountains or the Northwest coast region. However, the fact that the other species (*macroura*) is said to occur *east* of the mountains, gives this form the benefit of whatever the use of the word 'west' was intended to imply, and, furthermore, the dark color which is distinctly pointed out would seem to fix the name *oregonensis* on the Northwest coast form.*

Dr. Merriam, in Proceedings of the Biological Society of Washington, July 15, 1897, p. 219–220, proposed the name *Felis hippolestes* for the Puma of the Rocky Mountains, and *Felis hippolestes olympus* for the Northwest coast form, apparently overlooking the paper by Rafinesque.

In view of the evidence here set forth, it seems that Rafinesque's name must be recognized, and I would, therefore, suggest that the proper names for the two animals should be

Felis oregonensis (Raf.) Northwest Coast Puma.

Felis oregonensis hippolestes (Merr.) Rocky Mountain Puma.

WITMER STONE.

ACADEMY OF NATURAL SCIENCES,
PHILADELPHIA, December 9, 1898.

THE SCHMIDT-DICKERT MOON MODEL.

THE installation of the Schmidt-Dickert relief model of the moon in a scientific institution deserves, perhaps, a passing notice. This seems the more desirable since in so generally accurate a work as 'Webb's Celestial Objects for Common Telescopes,' edition of 1896, the statement is made that this model is in Bonn. It has not been in Bonn for fully twenty years, and for most of that time has been in this country.

While occasionally exhibitions have been made of the model during this time they have been of short duration and in different cities, so that, for this time at least, it has been practically lost to the world. Through the generosity of Mr. Lewis Reese, a citizen of Chicago, the model has now come into the possession of the Field Columbian Museum and has lately been installed in this institution. It is now, therefore, freely available for purposes of study and instruction. Since it has been so long lost from view some facts regarding the model may be of interest. It was constructed in 1854 by Th. Dickert, Curator of the National History Museum in Bonn, under the direction and with the cooperation of Dr. J. F. Julius Schmidt. The name of the latter is of itself sufficient guarantee of the accuracy and perfection of detail exhibited by the model, especially as Dr. Schmidt states that he tested with his own hand the accuracy of nearly all the measurements. So much labor was necessary in order to insure accuracy in the details that the work of modelling and construction occupied five years. The model is in the form of a hemisphere, 18 Paris feet (19.2 English feet), in diameter. Its horizontal scale bears the ratio to that of the moon of 1:600,000, the vertical 1:200,000. It is made up of 116 sections, each 15 degrees in length by 15 degrees in breadth. The consecutively joined edges of these sections serve to mark upon the surface of the model, parallels and meridians. The different colors exhibited by different parts of the moon are also depicted upon the model, the prevailing color being a dull yellow, broken by gray-green where the 'seas' occur, and by representations in lighter yellow of the bright streaks which radiate so prominently from some of the craters. The orientation which has been adopted for the model is the normal one of the moon, not inverted as it is when seen through an astronomical telescope. The north pole of the hemisphere is therefore above, the south pole below; east is to the left, and west to the right. The surface details of relief shown upon the model are based upon the charts of Beer and Madler, but many new localities were added from the observations of Dr. Schmidt himself. In all over 20,000 distinct localities are represented, modelled proportionally according to the relief which they present upon the moon. One may, therefore, study the relief with the greatest confidence that the actual topography of the moon is represented, and is spared the confusion arising

*'Oregon' of this date, of course, included the present State of Washington and much of British Columbia.

from the varying effects of shadows which make the study of the moon itself possible only to specialists. With the advance which has taken place in the interpretation of topographic forms in the last twenty years, it seems not too much to hope, now that this model has been made accessible to students of science, that its study will bring to light new facts regarding the nature and history of our satellite..

Oliver C. Farrington.

Field Columbian Museum, Chicago.

Lehmann and Hansen on 'The Telepathic Problem.'

To the Editor of Science: I can assure Professor James that I do not knowingly leave unread anything that he or Professor Sidgwick writes. I carefully considered the two papers to which he refers, at the time of their appearance, and have recently turned to them again. I am afraid, however, that I cannot make the admission that Professor James expects. Even if I granted all the contentions of criticism and report I should still see no reason to change the wording of my reference to Lehmann and Hansen. But there is a great deal that I cannot grant. While, like Stevenson's Silver, 'I wouldn't set no limits to what a virtuous character might consider argument,' I must confess that, in the present instance, the grounds for such consideration have not seldom escaped me.

Professor James rules that the *Phil. Studien* article is 'exploded.' I have tried to take up the position of an impartial onlooker; and, from that position, I have seen Professor James and Professor Sidgwick and Herr Parish handling the fuse, but I have not yet heard the detonation.

E. B. Titchener.

Astronomical Notes.

The November Meteors.

Reports of meteor observations made this year between the 11th and 16th have been published from England, France and the United States. These are sufficient to show the characteristics of the display and to furnish hints as to the methods which should be followed in future years. The greatest number of meteors was noted on the morning of the 15th (civil reckoning), when the rate reached two each minute at some stations in the United States. A single observer could count forty or more per hour. It is probable that the maximum had already passed, as more meteors were noted on the preceding than on the following night at the few stations where the skies were clear on those nights. On the 14th a single observer at Lyons, France, noted 134 between 1:04 a. m. and 4:05 a. m. On account of the cloudy weather at Paris M. Janssen made a balloon ascension and observed above the clouds. We are told that this plan of securing clear skies will be used more extensively next year. The number observed this year is fully ten times as great as those observed in 1897 and is about the same as that noted at Grenwich in 1865, the year preceding the great shower of 1866. This augurs well for the year 1899.

Observers report several interesting facts: (1) Many meteors with the characteristics of the Leonids did not proceed from the radiant area within the 'Sickle of Leo.' The discrepancies in locating the radiant point are not to be wholly explained by the errors to which all eye estimates of meteor tracks are liable, but are in part real. (2) The radiant area has for its center a point which is farther south than that calculated from the observations of 1866, which was R A. 10 h. 0 min., Decl. + 22°.9. The records this year, as far as known, range between 9 h. 50 min. and 10 h. 20 min. in R. A. and + 18° to 22° in Decl. A preliminary determination from the photographed trails of four meteors made at Harvard Observatory gives 10 h. 6.8 min., Decl. + 22°16′. (3) There were very few brilliant meteors compared with the total number. At Providence fourteen only out of nearly five hundred were brighter than the first magnitude.

The practicability of the photographic method of studying meteors needed no demonstration, but its possibilities are greater than was supposed. An ordinary camera, such as those in use by amateurs, will photograph the brighter meteors. Thus one with an aperture of only one inch and focal length of nine inches, if carefully focussed, will give trails of meteors as bright as the 0 magnitude. The camera need