

*Captain Urquhart.*—No, most of those thrown out away from the line of centres would fall back on the Earth again, while the remaining velocity of those which came within the sphere of influence of the Moon would not be sufficient to affect materially the ultimate result at the surface of the Moon. As the hour is late, I must postpone my replies to the criticisms till a future meeting.

*Mr. Raman.*—I would ask what it is on Captain Urquhart's theory that produced the expulsion of the bolides from the Earth? If it was some kind of volcanic action, surely the very necessity for the theory disappears, since the Moon (being an offspring of the Earth as shown by Prof. Darwin) would partake of such volcanic nature and this would sufficiently explain the formations on it.

The hour being late, Mr. Simmons, in closing the discussion for the evening, briefly said there were two or three points on which he would like further information. He illustrated by diagrams on the blackboard the theory held by competent geologists with regard to the mode of formation of volcanoes. He also pointed out that while Captain Urquhart based his analogies on results obtained by firing bullets into vessels of molten lead, he himself preferred to look to the surface of the Earth itself for his analogies. In Nasenyth and Carpenter's work on the Moon there was a picture showing the configuration of the district around Naples. It closely resembled what we saw on the Moon's surface, and therefore suggested (he thought conclusively) that the structure of the Moon's surface could be better explained by reference to the known results of volcanic activity on the Earth than by the meteoric theory. Mr. Simmons added that the fragments of a bolide distributed themselves on the Earth in an ellipse, and by an illustration of the blackboard explained why this must be the case. The craters on the Moon, however, were circular, not ellipsoidal.

The meeting was then adjourned.

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## The Composition of the Tonk Meteorite.

BY DR. W. A. K. CHRISTIE.

The meteorite presented to the Astronomical Society of India by His Highness the Maharaj Rana of Jhalawar has been

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transferred, with his permission, to the famous collection of the Geological Survey of India. It belongs to the rare group of ærolites known as carbonaceous chondrites ("K") in A. Brezina's classification. Its composition is given below :—

SiO <sub>2</sub>	...	...	...	22·42
TiO <sub>2</sub>	...	...	...	0·09
Al <sub>2</sub> O <sub>3</sub>	...	...	...	1·92
Cr <sub>2</sub> O	...	...	...	0·12
FeO	...	...	...	22·28
Fe	...	...	...	0·33
Fe (as sulphide)	...	...	...	0·21
NiO	...	...	...	0·80
Ni	...	...	...	0·07
MnO	...	...	...	0·15
MgO	...	...	...	13·73
CaO	...	...	...	1·34
K <sub>2</sub> O	...	...	...	0·36
Na <sub>2</sub> O	...	...	...	3·24
P <sub>2</sub> O <sub>5</sub>	...	...	...	0·11
CO <sub>2</sub>	...	...	...	0·13
SO <sub>3</sub>	...	...	...	6·97
S (as sulphide)	...	...	...	0·12
S (free)	...	...	...	1·44
C	...	...	...	2·70
H <sub>2</sub> O (below 106° C.)	...	...	...	10·74
H <sub>2</sub> O (above 106° C.)	...	...	...	10·92
				100·19

Its total weight was 7·73 grams; 1·63 grams have been used for analytical and microscopic purposes.

Its noteworthy features are the high percentages of carbonaceous material and free sulphur it contains.

A detailed account will shortly be published in the *Records of the Geological Survey of India*.