

She kept it in her room in this way, at the hotel where she was spending the summer, until about the first of November. She then returned to her home some three hundred miles further south, taking the insect with her. Here she at first kept it in her chamber, but the nights being sometimes very cool, it would become torpid and not get lively again until afternoon. Thinking it too cool for "buggie" there, she removed it to the kitchen. As it still appeared more or less dormant, she put it on a cloth above the hot-water boiler. Here it revived somewhat, but was not very lively nor did it eat very much.

About the middle of December it fell to the floor accidentally, by which fall it was evidently injured, as after that time it would eat nothing, and no longer recognized the young lady. About a week later it died. B.

Meteoric Shower.

THE well-known stream of meteors — the Andromedes or Bielids — overtook the earth on Wednesday, Nov. 23, 1892. At this observatory they were seen soon after sunset, and the fall was continued at a uniform rate until eleven hours, when their number in a given time was diminished by half. The display was at a maximum of magnificence between the hours of nine and ten. From 9 to 9.16, one hundred fell; from 9.35 to 9.46, one hundred; from 10.13 to 10.26, one hundred; and this rate was maintained nearly all the evening. Likely, three-fourths of all that came were seen, since the eye was held steadily on the radiant, which was in Andromeda, not far from Brooks's comet. Of course, the meteors were not connected with that body. The highest number seen at once was six, and they seemed to emerge from the same point. Two were almost as brilliant as Jupiter, and left trains. Perhaps one-tenth of all seen had trails. Their velocity was not great, as this stream overtakes the earth, instead of meeting it.

EDGAR L. LARKIN.

Knox College Observatory, Galesburg, Ill.

Pseudoaurora.

IN *Science* for Dec. 2 (p. 318) there is an interesting note regarding a peculiar appearance simulating the aurora around electric lights in Minneapolis. The writer approached the city from the suburbs and noticed nothing till he had passed the gas lights, but as he approached an electric light he saw beams emanating from it, and these disappeared on passing the light. The air was full of frost particles, giving an appearance of light fog. These appearances were simply shadows cast upon the fog by projecting arms or objects in the beam from the light and had no connection with electricity. These rays may be seen at any time when there is smoke, light fog, or mist. The easiest way to see them is to stand directly under the light and look up. Another way is to approach the light from a distance of 300 feet with the iron support of the lamp hiding the bright light from the eye. Any little opacity in the globe will throw a shadow into the fog. Oftentimes these rays are very beautiful, especially when seen through the branches of a tree.

These shadows are really the same as the Brocken Spectre, about which so much has been written. See this journal for Sept. 27, 1889, for an explanation of the phenomenon. Also *American Meteorological Journal*, March, 1890, p. 515.

H. A. HAZEN.

Washington, D.C., Sept. 10.

Brilliant Meteor.

ON the night of Nov. 29, about 8 o'clock, a very large meteor was seen passing westward, a little to the south of this place. Just as it seemed to be passing the body exploded, producing a sound that was distinctly heard, resembling that of a rocket explosion or a pistol-shot. After the explosion a body half as large as a full moon moved away to the westward, making a hissing, or frying sound. I have seen no one who saw the meteor before the explosion. The whole country was brilliantly lighted for a moment as if by a continued electric discharge, but at the time of the explosion the light was red and blue, or perhaps violet. The sound of the explosion was heard by parties five miles west

and seven miles east of here, who could not have been less than ten miles apart on an air-line, and they report the sound together with the other phenomena to have been about the same as they were here. I have no reliable reports from any greater distance than that. But this indicates that the body must have been of considerable size, and at a considerable distance from the earth.

C. F. MAXWELL.

Dublin, Tex., Dec. 1.

Ink-Stains.

To remove bad ink-stains from white linen (shirts, table-linen, etc.) place the stained part in Sabarraque's Solution, leaving the article in the solution until the linen is white. This must be used only for white goods. After a short time in the solution the ink-stain will gradually take on a copper color, gradually fading to a greenish hue, and finally nearly white. Washing in cold rain-water will finish. I believe this to be new.

A. M. WHITON, M.D.

Brockport, N.Y., Dec. 8.

BOOK-REVIEWS.

Eleventh Annual Report of the U. S. Geological Survey, 1889-1890. Part II. Irrigation. Washington, 1891. xiv., 395 p. Pl. 30. Fig. 4.

Irrigation and Water-Storage in the Arid Regions. By GEN. A. W. GREELY. Washington, 1891. 356 p. Pl. 37.

Final Report of the Artesian and Underflow Investigation and of the Irrigation Inquiry, Made under the Direction of the U. S. Department of Agriculture. Washington, 1892. Parts 1, 2, 3, 4. Many Plates and Maps. 52d Congress, First Session. Sen. Ex. Doc., No. 41.

Census Bulletins on Irrigation. Arizona, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Artesian Wells for Irrigation. By F. H. NEWELL. Washington, 1891-1892.

Extra Census Bulletin, No. 23. Agriculture.—Irrigation. By F. H. NEWELL. Washington, Sept. 9, 1892.

THE subject of irrigation has of late years assumed an importance that it has long merited but has not received. If that man be a benefactor of the human race who makes two blades of grass grow where one grew before, how much more a benefactor was he who first drew from creek or river the waters the heavens refused to bestow, and who thus became tenfold, yes, a thousand-fold, a human benefactor! Unfortunately, his name, his birth, his lineage, are all unknown, for the process of irrigation under one form or another has been practised since the earliest time of which there is any historic record. Perhaps the idea originated in those countries where rivers overflow their banks periodically, and where a certain definite time in the year may be considered to bring the flood. Be that as it may, in Egypt, in India, in China, irrigation has been a practice for many thousand years, and in these countries is now more extensively in vogue than ever before. It is not only in civilized and semi-civilized communities that irrigation is found, but in savage ones also, for recent travellers have noted the presence of irrigating ditches among certain African tribes, which, while not savage in the worse sense of the word, have still not yet reached the platform upon which semi-civilized races are assumed to stand.

In these older, eastern countries, irrigation is thus of very great antiquity. In the newer ones of the western and southern hemispheres, while of far less age, it cannot be said to be of any less importance. The Australian colonies have done a wonderful amount of irrigation engineering, this being necessary by reason of the peculiar climatic conditions and their vast tracts of otherwise unproductive territory. The work, too, being under government auspices, is of a more gigantic character than in any of the newer countries using irrigation. Of these our own country is not the least. In our western territory, while there are vast areas that can never be brought under the dominion of the plow and harrow, there are almost equally vast ones that will be gardens