from Scotland, presented by Mr. J. Faed; a Great American Heron (*Ardea herodias*), captured at sea off Cuba, purchased; a Ruddy-headed Goose (*Bernicla rubidiceps*), bred in the Gardens. The following species of Butterflies and Moths have been exhibited in the Insect House during the past week:—Silkmoths: *Samia cecropia, Attacus cynthia, Attacus pernyi, Attacus atlas, Attacus roylei, Actias selene, Actias luna, Cricula trifenestrata;* Butterflies: *Papilio machaon, Anthocharis cardamines, Thais polyxena, Melitæa cinxia;* Moths: *Smerinthus ocellatus, Chærocampa elpenor, Proserpinus œnotheræ, Sesia scoliæformis, Sesia spheciformis, Trochilium apiforme, Sciapteron tabaniforme, Pygæra bucephala.* Twelve specimens of a leaf insect (*Phyllium scythe*) from eggs transmitted by Mrs. M. A. Meres and Mr. Wood Mason from India, have also emerged.

OUR ASTRONOMICAL COLUMN

THE TRAPEZIUM OF ORION.—Prof. Holden, in an appendix to the Washington observations for 1877, has discussed a long series of measures of the multiple star Σ 748, made with the 26-inch refractor by Prof. Asaph Hall in 1877 and 1878. It is now known that the nebula in Orion was discovered by Cysat in 1618, thirty-eight years before Huyghens published an account of it, and his discovery is mentioned in his "Mathemeta Astronomica de Cometi Anni, 1618"; Bessel refers to it in his investigation of the elements of the great comet of this year, in the *Berliner Jahrbuch* for 1808. Cysat does not distinctly mention the number of stars, but clearly indicates their locality. Huyghens, in the "Systema Saturnium," 1659, describes his own discovery of the nebula, and refers to "three stars close together," which are shown in an accompanying figure. He saw the fourth star, completing what is now known as the trapezium of Orion on January 8, 1684, and Prof. Holden records that the last observation made by Huyghens was upon this system, on February 4, 1694, and the sketch in his manuscript journal under that date gives the four stars. In Hooke's "Micrographia," published in 1665, is a note (to which the attention of the American astronomer was drawn by Mr. H. B. Wheatley), which would imply that he was aware of the existence of the fourth star (notified by Cassini in his treatise on the comet of 1652), and of the fifth star, the discovery of which is usually attributed to W. Struve. He writes: "In that notable asterism also of the sword of Orion where the ingenious Monsieur Hugens van Zulichem has discovered only three little stars in a cluster, I have, with a 36-foot glass, without any aperture [diaphram] (the breadth of the glass being some three inches and a half), discovered five, and the twinkling of divers others up and down in divers parts of that small milky cloud." Sir John Herschel, in the *Memoirs* of the Royal Astronomical Society, vol. iii. mentions that Sir James South had pointed out to him in the original M.S. journals of the Royal Society a note which runs thus: "September 7, 1664 Mr. Hooke . . . the same relateth to have found those stars in Orion's belt, which M. de Zulichem maketh but three to be five." Prof. Holden made some special experiments in January, 1878, with the 26-inch refractor at Washington, the aperture reduced to 3½ inches, and arrived at the conclusion that if the fifth star were of the same brightness in 1664 as at this time, it would not have been discovered by Hooke; but, on the contrary, Mr. Burnham has brought together a number of cases in which the fifth star has been seen recently with such an aperture. The sixth star was detected by Sir John Herschel in 1830. Of other stars, suspected by several observers, Prof. Holden, during six years' observations of the nebula surrounding the trapezium, has not discovered any trace.

The Washington measures in 1877 were made in a dark field with the wires illuminated by a red-glass lamp; those of 1878 were made with the field illuminated, and with black wires. The mean results of the two years' observations of the four principal stars, after a complete reduction, are as follow, for the epoch 1878·0:—

	Position.	Distance.		Position.	Distance.
	° ′	″		° ′	″
ab ...	311 7·2	... 13·118	*bc* ...	95 37·1	... 21·758
ac ...	61 9·8	... 13·454	*bd* ...	32 57·7	... 8·774
ad ...	342 18·4	... 16·773	*cd* ...	299 21·0	... 19·364

The results obtained by South in 1820, W. Struve in 1836, Liaponoff in 1849, O. Struve in 1870, Nobile in 1876, and Jedrzjewicz for 1878, are brought together for comparison in Prof. Holden's paper.

Measures of the fifth and sixth stars in 1877-78, give the positions and distances subjoined, for 1878·0:—

		°		″
a and *a′*	...	121 25·2	...	3·984
a and *b′*	...	320 43·3	...	16·504
b and *b′*	...	352 8·0	...	4·194

In conclusion, Prof. Holden remarks: "It appears that after making due allowance for the unavoidable, accidental, and systematic errors, the comparison of all our measures on the six stars of this system shows their probable physical association."

THE COMET.—During the last fortnight the increase in the brightness of the present comet appears not to have differed sensibly from that indicated by theory. On May 21 it was hardly below 5·5m.

GEOGRAPHICAL NOTES

AT the Anniversary Meeting of the Royal Geographical Society on Monday, the medals were presented, as we said some time ago they would be, to Dr. Nachtigal and Sir John Kirk. Mr. Francis Galton gave some account of the progress of geographical teaching in schools, which the Society endeavours to promote by holding examinations and the grant of medals, &c. He quoted a passage from the report of the examiner, Prof. H. N. Moseley:—"I have," Prof. Moseley says, "to congratulate the society on the good work effected by its annual award of school medals. As my experience as an examiner in geography increases, the more I am convinced of its pre-eminent fitness as a subject of education, and the more I deplore that it is almost entirely neglected as such in this country. Competent teachers of the subject appear to be scarce indeed, but it is amply apparent from the society's examinations that most valuable results can be produced by really able instructors." This was the fourteenth year in which these examinations had been held, and fifty-six medals—four annually—had been awarded, while altogether ninety-eight boys had obtained honourable mention. Of fifty-two schools invited to compete, forty-one had sent up candidates. Among these the Liverpool School had been distinguished, its scholars having gained medals fifteen times; while Dulwich had obtained eleven medals since 1875, and two in each of the last three years. In the Scotch and Irish schools the boys were younger than in the high schools of this country, and that accounted, perhaps, for the fact that of five Scotch and seven Irish schools invited to compete, only two in each country had accepted the invitation. He regretted that the great schools of Rugby, Shrewsbury, King's College School, and St. Paul's School, London, had not yet sent competitors. The president then reviewed the progress of geography during the past year. He referred to various efforts which were being made to train those who might have opportunities of pursuing geographical research. Sir Allen Young, the president stated, was busy getting ready the whaler *Hope*, which he has hired, for the search for Mr. Leigh Smith and his party.

WE referred some weeks ago to the unusually early date at which ice appeared in the Atlantic this year; the supply has gone on unceasingly since, and the New York correspondent of the *Standard* states that the reports made by ships coming westward read like accounts of Arctic explorations:—One ship passed icebergs almost daily between May 7 and 17, in latitude 43 deg., longitude 37 deg. Many were of immense size, and were visible for forty miles, others were within arm's length of the ship's side. Arctic animals were seen upon them, some living, and others skeletons. The Atlas liner *Ailsa*, from Aspinwall, reports that in the middle of the afternoon of the 7th it was dark, and lights were necessary. Ten waterspouts were observed whirling in dangerous proximity to the ship. They were rendered visible by the lightning. The captain of her Majesty's ship *Tenedos* reports that the ice is nearly solid from Cape Breton to Newfoundland, and that two ocean steamers have been caught in it. The brigantine *Rescue* was completely crushed near Belle Isle. The crew, numbering seventy-two, took to the ice, although there was a heavy rolling swell surging among the floes. A perilous passage was made by the steamship *Mastiff*, of Scotland, which has arrived at Montreal. She was among the ice for nine days. The crew and passengers, becoming desperate, cut a passage through the ice, which was sometimes twenty feet above the water. Another ship, the *Western Belle*, from Greenock, struck an iceberg off Newfoundland on May 1, and sank instantly with her captain (Frew) and thirteen hands.

HEFT V. of Petermann's *Mittheilungen* contains a long account, by Dr. Woeikof, of his journey in Mexico and Central