same time there is proof that the bones were opened to get at the marrow. But the strongest evidence of cannibalism was furnished by the arrangement in which the bones were found. Besides these bones and bone implements, roughly worked bronzes were found. At a lower level numerous lemming bones were found, which, with regard to the age of the cavern, seems to point to the Glacial epoch. In the debate following Prof. Nehring's report, Prof. Virchow raised some doubts regarding the cannibalism of the cave dwellers.

A MEETING of delegates of Natural History Societies in the east of Scotland (including the counties of Fife, Perth, Forfar, Kincardine, and Aberdeen) was held in the lecture-room of the Perthshire Natural History Museum, Perth, on Nebruary 9, to consider the question of federation alluded to in NATURE. The following societies were represented:—Aberdeen Natural History Society, Alford Field Club and Scientific Society, Arbroath Horticultural and Natural History Association, Dundee Naturalists' Society, Dundee Naturalists' Field Club, Kirkcaldy Naturalists' Society, Largo Field Naturalists' Society, Montrose Natural History and Antiquarian Society, and the Perthshire Society of Natural Science—being all but four of the Societies in the above-mentioned counties. Two of these four societies considered that their objects did not quite entitle them to join the proposed federation, at least for the present; and from the other two no response had been received. After deliberation it was resolved to federate the societies under the title of "The East of Scotland Union of Naturalists' Societies." The objects of the Union are the promotion of good and systematic work by the various societies in it, and of friendly intercourse amongst their members; its affairs are to be conducted by a council of representative members, two being elected by each society. The president is to be a man of scientific eminence, connected with the district; and it is to hold an annual general meeting at the headquarters of the various societies in rotation, and other meetings in such places in the district as may be agreed on. The Union starts with a membership of about 1300. It was determined that the first general meeting should be held in Dundee on June 6 and 7 next. Dr. Buchanan White, F.L.S., was elected President, and Mr. F. W. Young, F.R.S.E., Hon. Secretary of the Dundee Naturalists' Society, was appointed Secretary.

WE learn from *Science* that Mr. Joseph Wharton of Philadelphia writes to the *Public Ledger* of that city (January 22) that he has found volcanic glassy dust in fresh, clean snow of recent fall. The snow, melted under cover in the porcelain vessel it was gathered in, showed at first no sediment; but after a time, and aided by a gentle rotatory movement which brought all to the deepest point, a slight deposit appeared. By pouring off most of the water, and evaporating the remainder, a little dry dust was obtained, which, even to the naked eye, showed, in the sunlight, tiny vitreous reflections. The dust weighed by estimate a hundredth of a grain, and showed under the microscope the characteristics of volcanic glass. It was partly irregular, flat, and blobby fragments, and partly filaments more or less contorted, which were sometimes attached together in little wisps, and were mostly sprinkled with minute glass particles. Under a knife-edge the filaments broke easily and cleanly. The irregular fragments were of various sizes and shapes, mostly transparent, but, even when examined by strong transmitted light, showing no trace of crystalline structure. Their diameter was about that of single filaments of silk. No crystalline particle of pyroxine, or black crumb of augite, such as observers have found elsewhere in similar dust, was present; nor did a strong magnet stir any particles of magnetic oxide of iron, though they also have been found in other volcanic dust. It may fairly be assumed that those heavier minerals, if at first mingled with the volcanic glass, had been already deposited during the long voyage through more than ten thousand miles of space and more than four months of time, while the tenuity of the intrinsically lighter glass threads (the Pele's hair of Mauna Loa) enabled them to float farther from the point of eruption.

"THE International Conference for fixing upon a universal prime meridian and a universal system of time has," *Science* states, "at length been called by the State Department to meet in Washington, Oct. 1. Diplomatic proceedings are always expected to go on with a certain dignified leisure; but the arrangements for the meeting of this conference have been delayed far beyond anything customary even in diplomacy. The act authorising the conference became a law in August, 1882. As there was some doubt whether there would be a sufficiently general response to the invitation to insure the success of the conference, a preliminary circular requesting the views of the various governments interested, and an expression of their willingness to enter the conference, was issued from the State Department toward the end of 1882. The responses were in some cases favourable, and in others negative or undecided. A desire was felt by the Europeans to have a preliminary discussion of the subject at the International Geodetic Conference at Rome in October, 1883. The feeling at this conference having shown that there would be little difficulty in the universal adoption of the Greenwich meridian, the final step of calling the conference was taken. Why so late a date was chosen we are not informed."

THE Magdeburg Wetter Verein has been transformed into a branch of the general German Meteorological Society, which is under the direction of Dr. Neumayer of Hamburg.

THE valuable ethnological collection made by Herr Zembsch at Apia, for many years German Consul-General at that place, has been purchased by the Ethnological Museum at Berlin. It consists of over 500 specimens.

THE additions to the Zoological Society's Gardens during the past week include a Chacma Baboon (*Cynocephalus porcarius* ♀) from South Africa, presented by Col. Gildea; a Macaque Monkey (*Macacus cynomolgus* ♂) a Black Kite (*Milvus migrans*) from India, presented by Mr. John M. Hagerman; a Common Hedgehog (*Erinaceus europæus*), British, presented by Mr. Archibald Aitchinson; a Bonnet Monkey (*Macacus sinicus*) from India, presented by Mr. J. Wilson; a Vulpine Phalanger (*Phalangista vulpina*) from Australia, presented by Capt. F. R. Slater; two Common Jackdaws (*Pica rustica*), British, presented by Master Harrott; a Chanting Hawk (*Melierax musicus*) from South Africa, a Partridge Bronze-winged Pigeon (*Geophaps scripta*) from New South Wales, purchased.

OUR ASTRONOMICAL COLUMN

PONS' COMET.—It appears that this comet was sufficiently conspicuous to attract the attention of unscientific passengers on board one of our mail steamships in approaching Rio de Janeiro from the south on January 20, while it was an object of popular interest in Southern Italy towards the end of that month, according to the Naples correspondent of the *Times*. Observers in the other hemisphere may be able to follow it for several months longer; in the last week in June the theoretical intensity of light will be equal to that at the date of its discovery by Mr. Brooks.

This comet approaches the orbit of Venus within 0·076; that of Jupiter within 1·98; and that of Uranus within 1·17. The ascending node falls at a distance of 15·46. During the revolution 1812–1884, the calculations of MM. Schulhof and Bossert show that the approximate effect of planetary attraction upon the periodic time, at the instant of perihelion passage in the former year, has been as follows:—

	Days
Comet accelerated by action of Jupiter	446·49
,, ,, ,, Saturn	13·96
Comet retarded by action of Uranus	13·48
,, ,, ,, Neptune	1·48

Hence the period of revolution in 1812 has been shortened by perturbation to the extent of 445·49 days. The orbital velocity of the comet at perihelion is 29·2 miles in a second, at aphelion it is 3550 feet in the same time.

THE GLASGOW CATALOGUE OF STARS.—Prof. Grant has just issued the important catalogue of stars which has been for some time in active preparation at the Observatory of Glasgow, and towards the publication of which the Royal Society has largely contributed from the Government Grant Fund. Its appearance is too recent to allow of a description of the contents in the present column.

THE VARIABLE STAR U GEMINORUM.—Mr. G. Knott, writing from Cuckfield on the 4th inst., sends observations of a recent maximum of this star; his estimates are:—

h. m.		h. m.	
Jan. 24, 8 10	13·3 m.	Jan. 28, 8 15	9·95 m.
26, 9 50	9·6	30, 9 0	11·4
27, 8 53	9·7	Feb. 2, 7 20	13·9

Clouds prevented observation on January 25, but it is quite possible that the maximum may have been attained on that day, since in 1877 the star increased from 13·2 m. to 9·8 m. between February 20, 8h. 10m., and February 21, 10h. 30m. The last previous maximum observed by Mr. Knott fell on January 30, 1883, the date also assigned by the observations of M. Safarik (*Astron. Nach.* No. 2505).

The period which best represented the observations in the years immediately following the discovery of the star's variability by Mr. Hind (in December 1855) was 97 days, but there has been subsequently great irregularity, and according to Mr. Knott it has fluctuated between 71 and 126 days, though the values on the whole cluster about a mean of from 90 to 100 days; the limits of variation being about 14½ and 9½ of Argelander's scale. These inferences are drawn from thirty-four maxima, observed partly by Mr. Knott and partly by Mr. Baxendell (see the *Observatory*, April, 1882).

THE LATE J. F. JULIUS SCHMIDT.—Practical astronomy has sustained a serious loss in the sudden death of the well-known Prof Julius Schmidt, who has been for many years Director of the Observatory at Athens. According to a Reuter's telegram his funeral, which took place on the 8th inst., was of a public character, the King and Queen of Greece being present at the Observatory during the delivery of the funeral oration. A notice of Prof. Schmidt's long-continued astronomical labours must be deferred to another week.

THE ROYAL SOCIETY OF EDINBURGH

AT the meeting of this Society on the 4th inst., the President, Lord Moncreiff, delivered an address on "The Past Hundred Years' History of the Society." Regarding this long interval, Lord Moncreiff said: "From the watch-tower of the Royal Society I can trace within the century a revolution more wonderful and more extensive than monarchs, or empires, or republics can display. Since this Society held its first meeting, how great to the community has been the fruit gathered from those branches of knowledge which it was incorporated to prosecute! During that interval, what has science not done for human comfort and happiness? What interest so great, what dwelling so humble, as not to have felt its beneficent influence? Since the invention of the art of printing, no such advance in material comfort, prosperity, and intelligence has ever been made within a similar period as this century has witnessed. Its triumphs have not been confined to the more abstruse fields of thought and study, but have come straight to the world of every-day life. One homely illustration meets me on the threshold of the opening night, and homely things go deep into the foundations of human life. I picture to myself our founders wending their way to the College Library, through close and wynd, in mid-winter 1783, while flickering oil lamps made the darkness visible without, and a detestable tallow candle made the student miserable within doors. Those who cannot recollect the universal reign of tallow candles and their sufferers, cannot appreciate how much the sum of human enjoyment has been enhanced, and the tranquillity of human temper increased, by the transmutation—partial, we must admit—of darkness into light. There has been, I believe, no more potent agent in humanising the denizens of our large cities than the flood of light which chemical science has in our day poured into their recesses. Prophets tell us that, before the end of the century which we now begin, gaslight will probably have followed the tallow candle into the same unlamented obscurity; but, even should this be so, history will carry to its credit the vast amount of public utility, and the many hours of useful employment or comfort in the factory, the study, or the sick-room, which this simple application of chemical science gained in its day for the nineteenth century. But the dispersion of material darkness is but a slender illustration of the triumphs of scientific discovery. Time and space are no longer the tyrants they were in 1783. I rather think that when our founders first met they could hardly hope to hear by post from London under ten days, as Palmer's mail-coaches had not begun to run until 1789. It would be an interesting inquiry, if my limits permitted, to trace the moral and social effects of the change from the days when a London letter took even three days to reach Edinburgh, and cost 13½d.—the pre-Macadamite days, when twenty miles a day was a fair posting rate on any roads but the main thoroughfares. Lord Cockburn lamented over the prospect of London being within fifteen hours of Edinburgh, as endangering the characteristics of our social community. His sagacity was not altogether at fault, but even that time has been reduced by a third, and I rather think we and the world are all the better for the change. But although larger victories were in store for the century, they came slowly. Both Boulton and James Watt were original members of the Royal Society, but it was more than thirty years before steam navigation became general, and more than fifty before the first passenger railway train ran in Scotland. No doubt, in 1791, Erasmus Darwin, in his 'Botanic Garden,' a poem too little read, had exclaimed in the well-known lines:—

'Soon shall thy arm, unconquered steam, afar,
Drag the slow barge, and urge the flying car.'

Godwin, too, looked forward with confidence to the ultimate victories of steam. Now, the locomotive carries mankind to all ends of the earth; their sanguine suggestions have been all but realised. There has been during this interval a still more powerful magician at work. To this audience I need not dwell on the triumphs of the future ruler of the world of science—electricity. But one illustration I may be permitted. Franklin was one of the first of the non-resident members elected by the Royal Society of Edinburgh. How little he thought when, many years before, he drew the electric spark from the cloud, that, before 100 years had sped, his experiment, but slightly modified, might convey a message from a meeting of the Society in Edinburgh to one of its fellows in New York, and bring back an answer before the meeting separated. In slightly alluding to this scientific revolution, my object has been partly to illustrate the surroundings of 1783, and also to remind my hearers that, of all the changes the century has seen, far the most important and the deepest have been the work of science. Increased facilities for inter-communication carry with them a complete change in the economical and social condition of the communities they affect. New wants, new customs, new ambitions, new possibilities, follow in their train by the operation of inevitable laws. By this talisman we have seen, perhaps sometimes without due appreciation, many a social problem solved which had before seemed hopeless; and although in the process of transition some period of adaptation may be necessary, and some temporary hardships endured, the result in all cases must be beneficent, and is, at all events, beyond the power of lawgivers to control or to resist.

"The Edinburgh Royal Society sprung partly out of the example of the Royal Society of London. But its immediate antecedent was the Philosophical Society, which had been founded nearly fifty years before by the celebrated McLaurin, and contained many distinguished names. Lord Kames became its president, and raised it to considerable distinction, both in science and literature, although that vigorous and versatile thinker and writer did not live to witness the commencement of the new institution. Dr. Robertson's plan was to absorb this Society and all its members in a new institute, on the model of the Berlin Academy of Sciences, for the prosecution both of physical science and of literature. The charter, however, was not obtained without some controversy, for, even as Romulus and Remus quarrelled over the boundaries of unbuilt Rome, so did the Philosophical and the Antiquaries squabble over the charter of the Royal Society. The Antiquaries wanted a charter of their own; Dr. Robertson thought Scotland not wide enough for two such institutions; the feud ran high, and great was the "dust," as Prof. Dalzel calls it, which was raised by Lord Buchan on the occasion. Some notice of this dispute will be