cultivation is the presence among the ancient capsules of numerous seed-vessels of a species of mustard which is still the commonest and most flourishing weed in every flax field in Egypt. The pods of mustard are almost spherical in shape with a long point, and are seated on pedicels a little less than half the length of the whole pod. Judging from the shape described, the pods must belong to one of the two varieties, common in Egypt, of *Sinapis arvensis*, Linn., namely, *S. Allionii*, Jacq., and *S. turgida*, Del., for the common form of this species is distinguished by elongated pods. As the two varieties named can only be distinguished from each other with certainty by the degree of cutting of the leaves, it would be difficult to decide to which of the two the pods of the twelfth dynasty belong were it not for the circumstance that as *S. Allionii*, Jacq. (characterised by the long-pointed much-divided leaves), is the prevailing form at the present time in Middle Egypt, a probability offers itself that the ancient pods belong to this form. On the other hand *Sinapis arvensis*, Linn., var. *turgida*, Linn., affects the winter cornfields.

It may be assumed that this species of wild or colonised mustard answers to the Sinapis to which Pliny refers (lib. xix. 54 [8]), as a plant commonly met with under such conditions, and of which he asserts that the Egyptian was the best for yielding oil, and that the Athenians called it Napy, others Thapsi, and others again Saurion.

Lentils, as far as I know, have not hitherto been authenticated from the ancient graves. Pliny (lib. xviii. 31) mentions them as a product of Egypt, where two kinds of them were cultivated. The lentils of the twelfth dynasty appear in consequence of boiling and subsequent shrivelling to have lost a considerable part of their bulk. They are 3½ mm. in diameter, while the recent ones average 4½.

From *Ceruana pratensis*, a characteristic composita of the banks of the Nile, which has hitherto only been found in Nubia and Egypt, the ancients made those hard hand brooms, still met with in every part of Egypt, and used for sweeping out the houses and especially the privies; for which purposes they are offered for sale in all the markets. The Egyptian department of the British Museum contains a similar specimen.

Furthermore, the two pine cones (*Pinus Pinea*) noted belong to a species not previously known from the ancient Egyptian relics. Like *Parmelia furfuracea* and the juniper berries (*Juniperus phœniceus*), they point to the commercial relations that existed between Egypt and Greece, Asia Minor and Syria. The pine cones which were found in a large basket filled with numerous kinds of fine linen thread, fruits of the Doum palm and a small calabash of Lagenaria, are small and unripe, the scales clinging close together. It is evident that only such of these rare northern exotic fruits as were unsuitable for the table were put in the offerings.

Among objects not previously authenticated from ancient Egypt are the legumes *Faba vulgaris* and *Cajanus indicus*. Unger[1] suggests that the broad bean (*Faba*) was probably not found in the tombs because it was regarded as unclean.[2] The two seeds in question were found amongst dried grape-skins and matters of that kind. In shape and relative size they fully correspond to the variety cultivated on a large scale in Egypt at the present day. They are smaller, rounder, and thicker than the European broad bean.[3] The dimensions of the ancient beans are 10, 8, and 6½ mm.

Pliny (lib. xviii. 12 [30]) says of the broad bean that it was used in funeral solemnities; hence the priests ate none, &c. Perhaps the presence of the broad bean in the offerings of the twelfth dynasty had a meaning similar to that which it had for the Romans.

[1] *Sitzungsberichte der Kais. Akademie der Wiss., Wien.*, 1859, Band xxxix.

[2] Compare "Herodotus," ii. p. 37.

[3] The author most likely alludes to the variety called "field" or "horse-bean" in this country.—W. B. H.

Among the funeral offerings of the ancient Egyptians often occur messes of a pap of roughly cut or coarsely ground grain of barley. They are in small earthen bowls, placed on the floor of the vault like the other offerings. In Prof. Maspero's opinion these messes of barley, which are in no way suitable for human nourishment, answer to the Mola (*Mola salsa*) offerings of the Romans of earlier epochs; and I would hazard an explanation of the presence of the broad beans in the offerings of the twelfth dynasty as an example of a possible analogy between ancient Rome and ancient Egypt. For, supposing the correctness of Herodotus's account that the ancient Egyptians regarded the broad bean as unclean, that they ate it in no shape or form, and that their priests could not bear the sight of it, some explanation for its presence must be found. The single seed of *Cajanus indicus* found with the broad beans in no way differs from the Upper Egyptian variety with yellow flowers. The plant, which is cultivated and wild all over India, as well as in all parts of tropical Africa, is nowhere cultivated in Egypt, though it occurs here and there in a wild state in Upper Egypt. It is certainly one of the oldest cultivated plants in the world, a fact further attested by its discovery in the ancient tombs.

G. SCHWEINFURTH

METAMORPHISM AMONG DEVONIAN ROCKS

THE tract of Devonian rocks which stretches through the north of France and Belgium, and across Rhenish Prussia into Westphalia and Nassau, has furnished ample materials for geological disquisition. Among the problems which it presents to the observer, not the least important is the remarkable metamorphism of certain bands or areas of its component strata. Dumont first called attention to this feature in the Belgian Ardennes. It was subsequently shown by Lossen to be extensively developed in the Taunus. More recently the question has been attacked anew with all the appliances of modern petrography. M. Renard has subjected some of Dumont's original localities to a critical revision, which has resulted in a confirmation of the accuracy of that remarkable geologist's observations. The latest contribution to the literature of the subject is a paper (*Annales Soc. Géol. du Nord*, vol. x. p. 194) by Prof. Gosselet, who at first refused to admit the metamorphism contended for by Dumont and corroborated by M. Renard, but who now comes forward with independent evidence in its support, from another locality. He describes the arkose of Haybes and of Franc-Bois de Villerzies on the frontier of Belgium as having undergone such a metamorphism as to be no longer recognisable. M. Barrois reports that on examining microscopically some sections of the altered rocks, he found among them bi-pyramidal crystals of quartz with liquid inclusions and movable bubbles, as in the quartz of pegmatite. These crystals have been broken *in situ*, with conchoidal fractures, and the surrounding paste appears as if injected into them. This paste is composed of small irregular quartz-grains like those of schists, and is coloured by fibrous chlorite, so arranged as to impart a more or less schist-like structure. The chlorite, arising from alteration of biotite, is predominant in some specimens, while the quartz-grains preponderate in others. M. Barrois compares this altered arkose with some porphyroids and some granitic veins in Brittany recently studied by him. Prof. Gosselet shows that these crystalline intercalations are portions of the true Devonian strata, and he accounts for their highly altered condition by what he terms a metamorphism by friction. A portion of the Devonian rocks has slipped down between two faults and has undergone great lateral pressure, and has in consequence been heated sufficiently that metamorphism has been determined in it. The extent of change has been proportionate to the degree of pressure. The metamor-

phosed arkose is provisionally referred to the Gedinnian division of the system.

M. Renard is understood to be at work upon a detailed memoir on the metamorphosed rocks of the Ardennes, in which their chemical constitution and microscopic characters will be fully described.

THE RECENT STORM

THE great and destructive storm of Saturday and Sunday last may almost take rank as a historical event, seeing that on the Saturday evening atmospheric pressure fell considerably lower in Scotland than is known ever to have occurred in these islands since the barometer became an instrument of observation. This remarkable barometric fluctuation, as observed at Edinburgh, is shown by the following observations made on those two days, the observations being reduced to 32° and sea level :—

	Barometer Inches		Barometer Inches		Barometer Inches
Saturday.		Saturday.		Saturday.	
9.0 a.m.	28·934	5.30 p.m.	27·853	9.30 p.m.	27·467
2.0 p.m.	28·376	6.0 ,,	·819	10.0 ,,	·451
2.30 ,,	·266	6.30 ,,	·779	10.30 ,,	·464
3.0 ,,	·167	7.0 ,,	·721	11.0 ,,	·505
3.30 ,,	·064	7.30 ,,	·6·1	11.30 ,,	·565
4.0 ,,	27·984	8.0 ,,	·580	Sunday.	
4.30 ,,	·934	8.30 ,,	·516	3.0 a.m.	27·835
5.0 ,,	·921	9.0 ,,	·494	4.30 ,,	·968
				9.0 ,,	28·311

As the barometer was closely watched for some time before and after 10 p.m., and no change was observed, the reading 27·451 inches may be regarded as absolutely the lowest that occurred. Since the wind veered during the storm from S.E. by S.W. to N.W., the centre of the storm passed to the northward, and along its path still lower readings were doubtless recorded.

The following observations have been already received, showing in inches the lowest observed readings and the hour when they occurred :—Moffat, 27·662 at 10·15 p.m.; Marchmont, near Duns, 27·581 at 11 p.m.; Inverness, 27·516 at 11·10 p.m.; Fort William, 27·467 at 8 p.m.; Joppa, near Edinburgh, 27·464, Leith, 27·453, and Edinburgh, 27·451, at 10 p.m.; Glasgow, 27·427 at 9 p.m.; Dundee, 27·382 at 10·30 p.m.; Ochtertyre, near Crieff, 27·332 at 9·45 p.m.; and 27·400 is stated to have occurred at Aberdeen. With the observations made at the 160 stations of the Scottish Meteorological Society, it will, in a few days, be easy to trace the history of this extraordinary atmospheric depression in its passage across the island.

At Ben Nevis Observatory, the lowest reading of the barometer on Saturday, 23·173 inches, occurred at 8.30 p.m.; at noon, temperature was 15°, and at 10 p.m. 22°; at 7 p.m. the wind was S.E. force 8, and at 10 p.m., N.E. force 4.

In the sixty years preceding 1827, during which Mr. James Hoy made barometric observations, the lowest reading was 28·007 inches; during the last 43 years observations have been made at Culloden, and the lowest reading, observed by the late Mr. Arthur Forbes, was 27·984 inches at 11 a.m. on December 27, 1852. During the interval between these two long continued series of observations, Mr. George Innes, optician, made observations at Aberdeen; and on the occasion of the memorable storm of January 7, 1839, recorded an observation on that morning of 27·695 inches. On the same morning, at 9 o'clock, the lighthouses on the east of Scotland, which were near the centre of the storm at the time showed readings varying from 27·806 inches in the Firth of Forth, to 27·716 inches near Peterhead.

As these three series of observations extend over the last 120 years, it is evident that over at least the east of Scotland, from Inverness to the Tweed, atmospheric pressure fell on the evening of Saturday the 26th from a third to half an inch lower than has occurred during that extended period.

NOTES

WE are glad to be able to announce that Prof. Flower has been definitely appointed by the Trustees to the position of Superintendent of the Natural History Department of the British Museum, vacated by the recent resignation of Sir Richard Owen.

THE German Emperor, at the instance of the Berlin Academy of Sciences, has been pleased to make Prof. Sir William Thomson a Knight of the Order *Pour le Mérite* for Science and Art.

ACCORDING to an announcement made by Prof. E. Stefan at the last meeting of the Vienna Physical Society, Prof. S. von Wroblewski, of Krakow, has succeeded in solidifying hydrogen.

IT is reported that Prof. Wilhelm Klinkerfues, the well-known astronomer, shot himself on Monday in the Observatory at Göttingen.

WE are glad to see that the fishermen of Scotland have at last realised the necessity of a thorough scientific investigation into the habits of fish. At a meeting at Peterhead the other day the Solicitor-General for Scotland was requested to help the fishermen to obtain Government aid for the prosecution of such research; the country, it was admitted, is behind all others "in scientific information on fish." The Solicitor-General, Mr. Asher, admitted the lamentable deficiency of our knowledge of the habits of food fishes, and promised to do all he could to obtain a grant for the Committee of the Fisheries Board, who are now endeavouring, with the slender means at their command, to investigate the subject. "Prof. Ewart and his colleagues," Mr. Asher stated, "had entered upon an investigation which, if duly prosecuted, could not fail to be productive of immense results and advantages in connection with all kinds of fisheries."

AT the end of March the Austrian botanist, Mr. Joseph Knapp, Conservator des Herbariums des Allgemeinen Oesterreichischen Apothekervereines of Vienna, will go to Northern Persia (Azerbijan), with a scientific expedition for exploring the flora and fauna of that little-known province.

DURING February Prof. W. K. Parker will give a series of lectures at the Royal College of Surgeons on Mammalian Descent, as follows :—February 4th, Introductory; 6th, On Monotremes; 8th, On Marsupials; 11th, On Edentata; 13th, On Insectivora; 15th, Insectivora (continued); 18th, Insectivora (concluded); 20th, On the remaining Orders of Mammalia; 22nd, On Man (conclusion).

IN connection with the opening of the Turin Exhibition, the Italian Government offers a prize of 400*l.* to the inventor of the most practicable method for the transmission of electricity to a distance. The competition will be international.

WITHIN a few days the exhibition of the *Talisman* collection will be opened at the Jardin des Plantes of Paris, with diagrams exhibiting the circumstances of the operations, and the instruments which were used.

THE Asiatic Society of Bengal celebrated its centenary on Tuesday last week. The proceedings began with a special meeting, the Hon. H. Reynolds, the President of the Society, being in the chair. Six gentlemen, namely, Dr. Joule, Prof. Haeckel, Mr. Charles Meldrum, Prof. Sayce, M. E. Senart, and Prof. Monier Williams, were elected honorary members.