obtainable. Here, under very great difficulties, from the looseness of the ground of about two square metres upon which we stood, an attempt was made to take two instantaneous photographs of the crater as we looked down into it. Unfortunately, both of these were useless, as we foresaw, from the vapour blowing towards us.

The crater was very quiet, only throwing out a very few fragments of pasty lava cake, with about four or five explosions during the four hours we remained near by. There were other explosions, but too weak to eject anything. I descended to the crater edge, but could not remain long, on account of the heat of the ground and the acid fumes, which seemed to be in great part composed of HCl with a good dash of SO_2.

On returning from the crater edge and descending a little lower on the south-west of the Sciarra, a good view is obtainable of that slope and the crater. Here two successful photographs were taken, which show very well the crater with its relative position to the summit of the mountain and to the Sciarra. On the following day the tour of the island was made in a boat, and, as only a few stones were being ejected, we were able to land on the narrow ledge or beach at the foot of the Sciarra. Two successful photographs were taken from the Scoglio dei Cavassi, from which a fine view is obtainable of the Sciarra and the crater.

During our residence on the island, and our stay at Salina and Panaria, we always noticed that the amount of visible vapour issuing was in direct proportion to the humidity of the atmosphere. On account of the great quietness of the volcano, it was impossible to form any judgment as to whether there was any relation of increased or diminished activity to the barometric pressure, and so, indirectly, to the winds.

Since leaving the island, correspondence has been kept up between Signor Giuseppe Rende, the post and telegraph master, and myself. The following information I have been able to glean from that gentleman's letters. From June to November 1887 the volcano remained in its normal state. On November 18, a moderate eruption (*eruzione mediocre*), and the wind blowing from the west, a shower of scoria (? fragments) (*aride pietre*), fell amongst the vines near the village. This was accompanied by explosions (*botti*), which, it appears, considerably frightened the people. Later, the scoria (*pomice*) fell into the sea, which it covered as far as the eye could see. Unfortunately, Signor Rende did not preserve any of the *ejectamenta*, but, judging from what one sees composing recent deposits of the island, the material was a pumiceous scoria, or a light scoria, as it appears to have floated on the sea.

In answer to further inquiries, Signor G. Rende tells me that the floating scoria extended *eastwards* as far as the eye could reach. No lava appeared, but a small mouth opened at the edge of the crater, but in a very few days disappeared. He then goes on to say :—

"I draw your attention in this letter to a very remarkable fact. On the 25th of last February (*i.e.* 1888), at 4.21 p.m., occurred two little shocks of earthquake of *undulatory* character, followed by a *subsultory* one, so that we thought it would be the end of the world for us. Never had a *subsultory* earthquake been felt. It split various houses, overturned walls, and made earth-banks slip. Those who had their eyes fixed on the mountain seemed to see the summit of it fall over from south to north. People who were working amongst the vines fell on their faces. No victims. Neither Panaria, Lipari, nor the other islands noticed the shock. The volcano (*i.e.* Stromboli) was in no way affected (*non fece mossa alcuna*)."

Prof. Mercalli has collected together what is known of the history of Vulcano and Stromboli. He also published accounts of the state of these volcanoes during the years 1882–86 inclusive ("Natura delle eruzione dello Stromboli," *Atti della Soc. Ital. di Sc. Nat.* vol. xxiv.; "Notizie sullo stato attuale dei vulcani attivi Italiani," *ibid.* vol. xxvii.; "La fossa di Vulcano e lo Stromboli dal 1884 al 1886," *ibid.* vol. xxix.).

The eruption of November 18, 1887, is curiously near the date of November 17, 1882, when one of the strongest modern eruptions of Stromboli occurred, and when five lateral mouths opened on the Sciarra about 100 metres below the crater edge, but without the ejection of a lava stream. As on one or two other occasions, the last eruption extensively covered the sea with scoria, a fact of no small importance when we take into consideration that Stromboli is a very basic volcano, in a unique state of chronic activity, and is yet able to produce scoria or pumiceous scoria, sufficiently vesicular to float on the sea, and so be transported to great distances.

With regard to the position of lateral eruptions of this mountain, the only situation in which dykes are visible is on the north-west side and near the Sciarra, where a considerable number are to be seen. One of these is visible in section near La Serra, showing it continuous with a lava flow that oozed from it only a few metres above sea-level, indicating that not very long since a lateral eruption gave rise to a lava stream; another, close to the crater, stands out as a great wall at right angles to the present eruptive axis of Stromboli, and certainly must have been formed when the crater was at a very much higher level. No less than three dykes at Stromboli are *hollow* ones, with their interspace filled in from above by loose materials, showing that they must also have been drained below present sea-level, as they reach—as hollow dykes—down to the beach. I believe I was the first to draw attention to this peculiar variety of dyke, in describing the eruption of Vesuvius of May 2, 1885, where it was possible to watch the process of formation ("L'Eruzione del Vesuvio nel 2 Maggio, 1885," *Ann. d. Accad. O. Costa d'Asp. Naturalisti*, Era 3, vol. i.; and "Lo Spettatore del Vesuvio," Napoli, 1887). These hollow dykes of Stromboli may be seen at La Serra, the northern limit of La Sciarra, and at Punta Labronzo. I expected them to be rare, as there is no mention of them made in any literature known to me; but as it is also well shown near the Punta del Corno, at Vulcano, it can hardly be the case.

In conclusion, I take this opportunity of thanking Signor Narlian, of Vulcano, and Signor Rende for their past kindness, and for the promise of further notes on these two isolated, neglected, but interesting volcanoes.

H. J. JOHNSTON LAVIS.

HEAD GROWTH IN STUDENTS AT THE UNIVERSITY OF CAMBRIDGE.[1]

IN the memoir read by Dr. Venn, on April 24, at the Anthropological Institute, upon the measurements made, during the last three years, of the students of Cambridge, one column is assigned to what he terms "Head Products," and which may fairly be interpreted as "Relative Brain Volumes." The entries in it are obtained by multiplying together the maximum length and breadth of the head and its height above a specified plane. The product of the three determines the contents of a rectangular box that would just include the portion of the head referred to. The capacity of this box would be only rudely proportionate to that of the skull in individual cases, but ought to be closely proportionate in the average of many cases. The relation they bear to one another affords, as it seems to me, a trustworthy basis for the following discussion, especially as all the measurements were made not only on a uniform plan, but by the same operator.

[1] Read at the Anthropological Institute, on April 24, by Francis Galton, F.R.S.

It will be convenient to reproduce Dr. Venn's figures in a separate table, neglecting the second decimal:—

Head Products.

Ages.	Class A. "High honour" men.	Number of measures.	Class B. The remaining "honour" men.	Number of measures.	Class C. "Poll" men.	Number of measures.
19	241·9	17	237·1	70	229·1	52
20	244·2	54	237·9	149	235·1	102
21	241·0	52	236·4	117	240·2	79
22	248·1	50	241·7	73	240·0	66
23	244·6	27	239·0	33	235·0	23
24	245·8	25	251·2	14	244·4	13
25 and upwards.	248·9	33	239·1	20	243·5	26
		258		476		361

The figures in the table are thrown into diagrams in Figs. I., II., and III., in which curves are also drawn to interpret what seems to be their significance. The great irregularity in Fig. II., corresponding to the age of twenty-four, may be fairly ascribed to the smallness of observations, only thirteen in number, on which it is founded. The three resultant curves are shown by themselves in Fig. IV., where they can be easily compared. It will then be seen that the A and C curves are markedly different, and that the B curve is intermediate. Accepting these curves as a true statement of the case—and they are beyond doubt an approximately true statement—we find that a "high honour" man possesses at the age of nineteen a distinctly larger brain than a "poll" man in the proportion of 241 to 230·5, or one that is almost 5 per cent. larger. By the end of his College career, the brain of the "high honour" man has increased from 241 to 249; that is by 3 per cent. of its size, while the brain of the "poll" man has increased from 230·5 to 244·5, or 6 per cent.

Four conclusions follow from all this:—

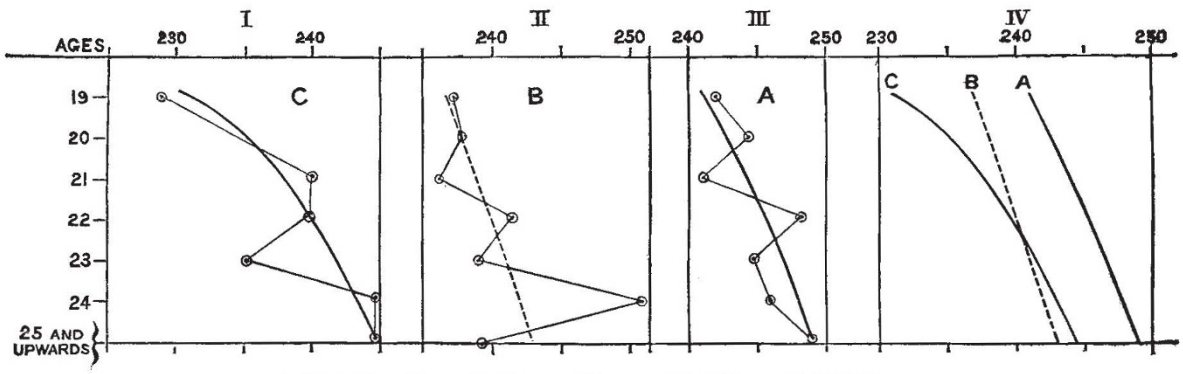
(1) Although it is pretty well ascertained that in the masses of the population the brain ceases to grow after the age of nineteen, or even earlier, it is by no means so with University students.

(2) That men who obtain high honours have had considerably larger brains than others at the age of nineteen.

(3) That they have larger brains than others, but not to the same extent, at the age of twenty-five; in fact their predominance is by that time diminished to one-half of what it was.

(4) Consequently "high honour" men are presumably, as a class, both more precocious and more gifted throughout than others. We must therefore look upon eminent University success as a fortunate combination of these two helpful conditions.

Length × Breadth × Height of Head, in inches, of Cambridge University Men at different Ages (from Dr. Venn's Tables).



A, First Class Men; B, Honour Men, not First Class; C, Poll Men.

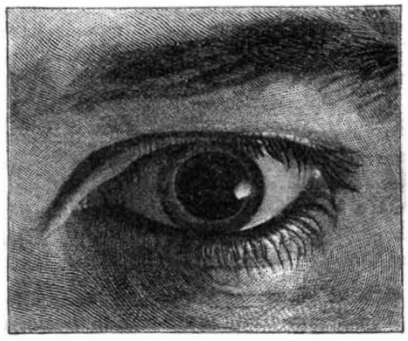
PHOTOGRAPH OF THE EYE BY FLASH OF MAGNESIUM.

THE effect of complete obscurity on the normal pupil has hitherto been seen only by the light of electric discharges, which allowed of no measurements.

MM. Miethe and Gaedicke, by their invention of the well-known explosive magnesium mixture, have furnished us with a simpler method. A photograph of the eye can be taken in a perfectly dark room, showing the pupil fully dilated, as its reaction does not begin until after exposure.

Mr. Miethe, astronomer at the Potsdam Observatory, himself at my suggestion undertook to execute the accompanying photograph of a normal eye, life-size, after a quarter of an hour's rest in a carefully darkened room. The pupil was found to measure 10 mm. horizontally (the breadth of the cornea being 13 mm.). A reflection of the flash is seen on the cornea.

This kind of photography may prove a new and valuable method for many other branches of scientific



research, but it is of especial utility to ophthalmology, as the eye, by its mobility and sensitiveness, has hitherto been a most difficult subject for the camera.

CLAUDE DU BOIS-REYMOND.