

The commissioners for visiting the Universities of Scotland, remark in their report "that it is desirable that graduates in medicine should have that degree of literary and scientific attainment which will prevent them when mingling as they must do with mankind, in the exercise of their profession, from being looked upon with contempt; or from committing errors in conversation and in writing, for which others would be despised; because even upon the supposition that they have high professional acquisitions, the law of association will operate, and the conclusion will be drawn that much confidence cannot be placed in them." The value of university training was strongly insisted on by the late Prof. Edward Forbes, when speaking of the relation which scientific studies bear to medicine. The following are his remarks:—"It is the training of the mind in correct methods of observation that gives the Natural History Sciences so much value as instruments for preparation in professional education. Not unfrequently do we hear the short-sighted and narrow-minded ask—what is the use of zoology or botany or geology to the physician and surgeon? what have they to do with beasts or plants or stones? Is not their work among men healing the sick? Of what use save as remedies, are the creeping things, or the grass that grows upon the earth, or the minerals in the rock? Vain and stupid questions all—yet they are sometimes put by persons who profess to promote the spread of education. They want something, but the best of them mistake the end for the means. The best want knowledge, but have not learnt that the mind must be trained ere it is prepared to gather and digest knowledge. They want science, but science turns mouldy and unwholesome in our unprepared mind. They forget or do not know that education consists chiefly in training, not in informing.

"We must counteract the natural tendency of purely professional studies—the tendency to limit the range of mental vision. We can do this most beneficially through the collateral sciences, which are sufficiently different to give them a wider sphere of action. It is from this point of view that we should regard the natural history sciences as branches of medical education. For my part," continues Forbes, "after much intercourse with medical men who had studied at many seats of professional education, some collegiate, some exclusively professional, I have no hesitation in saying that, as a rule, the former had the intellectual advantage. There are noble and notable exceptions old and young, but the rule is true in the main. The man who has studied at a seat of learning, university or college, has a wider range of sympathies, a more philosophical tone of mind and a higher estimate of the objects of intellectual ambition, than his fellow-practitioner who, from his youth upwards, has concentrated his thoughts upon the contracted professional subjects of an hospital school. I will not believe that the practitioner of medicine, any more than the clergyman, or the lawyer, or the soldier or merchant, is wiser, or better able to treat the offices of his calling, because his mind takes no note of subjects beyond the range of his professional pursuit. It is a great pleasure, both to patient and neighbourhood, to find in our doctor an enlightened friend, one who, whilst he does his duty ably and kindly, has a sympathy and an acquaintance with science, literature, and art."

In Scotland a university is not merely a board authorised to examine students and grant degrees, it is an educational institution, intended to exercise a surveillance over the studies of youth, to train their minds for the proper acquisition of knowledge, and to direct their energies in such a way as to insure that mental culture which will fit them for all the duties of life. We speak of our University in Scotland as our *Alma Mater* because she acts the part of a mother to her *alumni*, educating them and superintending their progress in liberal studies.

It appears to me that a great injury would be inflicted on the character of our medical degrees if the required curriculum did not embrace the natural sciences. To study these properly something more than books is required. There must be practical training under an able teacher, examination of living objects both with the naked eye and with the microscope, and a certified course of study. I am sure that everyone, in Scotland at all events, who desires to make graduation in medicine a University honour will aid in keeping up a scientific curriculum under qualified teachers.

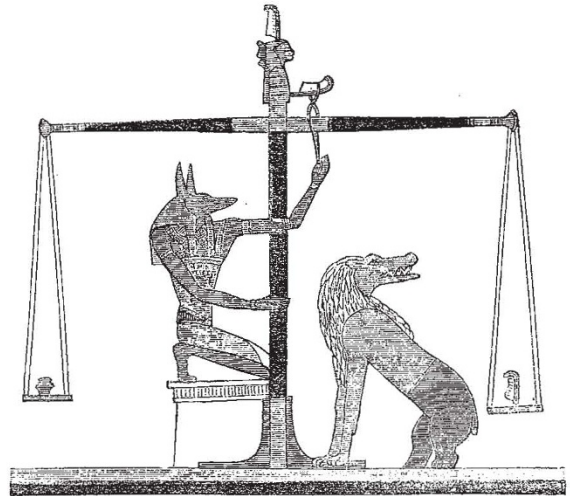
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Ancient Egyptian Balances

I HAVE to thank Mr. Rodwell for calling my attention, in *NATURE*, vol. ix. p. 8, to the curious representation of an

equal-armed Egyptian balance in a papyrus, now in the British Museum. This papyrus, which is perhaps the most beautiful in the whole collection, all the colours and lines being as bright and distinct as when originally painted, has been shown to me by Dr. Birch, who also informed me where I could procure a photograph of it, being one of a series of photographs from the collection at the British Museum, taken by S. Thompson, and published by Mansell and Co., 2, Percy Street. By Mr. Mansell's permission the following drawing has been made.



From an ancient Egyptian papyrus in the British Museum, of Hennefer, superintendent of the cattle of Seti I., 19th Dynasty, about 1350 B.C., representing the "Ritual of the dead." The heart of the deceased is being weighed in an equal-armed balance, and found lighter than a feather. In the papyrus, the weighing is being made in the Hall of perfect Justice, in presence of Osyris.

It may be seen that what Mr. Rodwell mentions as a sliding weight on one side of the beam, appears rather to be a loop or ribbon for limiting the oscillation of the beam. In the original papyrus the middle and both ends of the beam, as well as the lower part of the column, are coloured to represent polished brass, whilst the other parts of the balance are dark, as if of bronze. It should be observed that the balance beam has box-ends for suspending the pans. Judging from the height of the human figures, the length of the balance beam represented is about six feet, and the height of the column of the balance is nearly the same. Several similar, though rougher, representations of weighing the heart of the deceased may be seen in the papyrus drawing on the staircase leading from the Egyptian sculpture room to the upper Egyptian room in the British Museum.

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Stalagmitic Deposits

In a former number of *NATURE* (vol. viii. p. 462), Mr. A. R. Wallace, in reviewing Sir Charles Lyell's last edition of the "Antiquity of Man," makes use of the rate of deposits of stalagmite as data for ascertaining the age of animal remains which are found buried in caves. It is evident that the variations of rate will render unreliable data for arriving at correct conclusions; still, calculations based thereon may be of service.

Some thirty years ago I procured a piece of lime deposit from a lead mine at Boltsburn, in the county of Durham; it measured about 18 in. in length, 10 in. in breadth, and fully $\frac{1}{4}$ in. thick; it was compact and crystalline, and showed distinct facets of crystals on its surface, over which the water was running. I had indisputable evidence that the deposit had taken place in fifteen years. The water, from which it was produced, issued from an adit driven in the Little limestone, which is about 9 ft. thick. After leaving the adit, the water ran down the perpendicular side of a rise, for some fathoms, on to some rock *débris*, which was lying on the bottom of a hopper, whence it proceeded from the upper part of the hopper mouth, then perpendicularly down over two narrowish wood deals, which were set on edge, and put across the mouth of the hopper to retain the worked materials. It was from off these deals that I obtained the specimen above described. On its back side the forms of the deals