

Simian stage in the evolution of man's foot. As Prof. Smith explains in his paper in the *Journal of Anatomy*, the "thumb-like" digit of this human foot represents not the whole, but only a half of the normal great toe. The cleft which separates the thumb-like digit from the rest of the foot does not correspond to the fork between the great toe and sole of a monkey's foot, but represents an abnormal cleft between the two halves of the great toe. The other or buried half of the great toe is represented by the first of the *five* digits shown in the photograph. The separated digit in such cases represents a spurious "thumb."

ARTHUR KEITH.

Experiments on *Ciona intestinalis*.

IN a letter published in NATURE of November 24, p. 759, Prof. MacBride stated that when Dr. Kammerer cut off only the oral siphon, the regenerated siphon was of the same length as its predecessor, but when both siphons were cut off, then long siphons were regenerated.

In the issue of NATURE for December 8 is a letter from Dr. Kammerer in which he mentions that Mingazzini had previously found that regenerated siphons in *Ciona* were longer after each regeneration. I have looked up Mingazzini's paper on the subject to which Dr. Kammerer gives the reference, namely, *Bolletino Soc. Nat. Napoli*, vol. v., 1891, and the statements there made are directly the reverse of that made by Prof. MacBride as quoted above. The following are the words in the original Italian:

"Queste esperienze furono praticati tanto tagliando i sifoni boccali e quelli cloacali su diversi esemplari, quanto tagliando contemporaneamente e sullo stesso esemplare i due sifoni." "Anzi, come legge generale, si vedera che tanto l' uno quanto l' altro, dopo che si erano rigenerati, avevano una lunghezza maggiore dei sifoni non rigenerati."

Thus it is distinctly stated that in some cases the buccal and cloacal siphons were cut off in different individuals, sometimes in the same individual, and that in either method a regenerated siphon showed increased length.

It is to be noted that Dr. Kammerer in his letter in NATURE of December 8 does not confirm the statement of Prof. MacBride in the issue of November 24.

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Mile End, E.1, December 29.

Deferred Annuities (Two Rates of Interest).

I HAVE read with much interest Mr. Palin Elderton's letter which appeared in the issue of NATURE for January 5.

As Mr. Elderton correctly points out, the application of Mr. George King's formula, or two-rate rule, gives lower present-values for immediate-annuities than does the application of the single-rate of interest to both remuneration and redemption, which, it may be mentioned, is the method adopted in Inwood's principal tables.

King's rule for immediate-annuities has been used generally in the mining profession for a number of years, because that rule gives lower values and satisfies the Estate Duty Department.

But while, for immediate-annuities, King's rule produces lower present-values than Inwood's, King's rule for periods of deferment works the other way; it does not, as the period of deferment lengthens, reduce the values at the rapid rate which Inwood's consistent-rule does.

Mr. Elderton's contention, as I understand it, is that the values obtained by King's rule for immediate-entrance should be discounted by the more stringent Inwood single-rate method, so as to produce a lower value invariably than would be obtained by King's rule for deferred-annuities. His suggestion is the same as that stoutly advocated by Hoskold, who in his 1877 edition devoted 45 pages to tables of deferred-annuities and furnished 9000 present-values. These values are the same as those given by Mr. Elderton in the last column of his illustrations.

The only question, then, is which rule ought a mineral valuer to use? The late Mr. J. C. Denmead, an actuary of sound knowledge and ability at the Estate Duty Department, strongly condemned the use of Inwood's Tables for deferred-annuities on the ground that for long periods the results were far too stringent. In deference to the views of the Department, mining engineers have been persuaded to discard Inwood and to use King's rule, thus (except for relatively short terms of deferment) arriving at much greater present-values. What Mr. Elderton advises, then, is the use of an even more stringent rule than Inwood's; in fact, he argues for a return to the Hoskold tables long since abandoned in the face of official opposition.

It is quite true, as parenthetically observed above, that for relatively short periods of deferment the values by King's rule are lower than by Inwood's. This is so, of course, because King's values for immediate-entrance are lower than Inwood's, and the deficiency takes a few years to recover, but in long periods of deferment (which are frequent in mining) the present values are very much greater by King's than by Inwood's and are still greater than those determined by Mr. Elderton's (or Hoskold's) formula. The anomaly does not prove Mr. King's method to be wrong or Mr. Elderton's to be right, but there is no doubt the mining profession would gladly adopt Mr. Elderton's method of ascertainment if he could induce the officials at Somerset House to adopt it: the amount payable in Estate Duties would be much lower.

R. A. S. REDMAYNE.

An Improved Form of Pipette.

THE form of pipette shown in Fig. 1 is useful for drawing up and delivering minute quantities of liquid. It can also be used for manipulating microscopic organisms, and in this respect seems to have some advantages over the one commonly used in

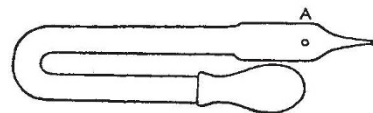


FIG. 1.

biological class-work. The U-shape, by bringing the bulb near to the nozzle, gives a steadier grip, especially if the front part of the tube be enlarged. The U-shape also makes it possible to have an air-hole (A) for regulating the action of the bulb with the finger-tip. If the hole be well placed, it can be closed and opened with a minimum of jar. Pipettes of this form with the nozzle made of thermometer glass can be obtained from Messrs. Reynolds and Branson, Ltd., Leeds.

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