colorimetrical methods. The tube is closed by heating the opening, and is now ready for use.

I made a solution for a standard tube one year ago, and although it has been exposed to different kinds of light all the time, it has not changed.

A. K. J. KOUMANS.

University Hospital, Leyden, Holland,
May 5.

Approximations to the Probability Integral.

RECENT numbers of NATURE contain two interesting approximations to the probability integral, one by Prof. H. C. Plummer (October 25, 1924), and one by Mr. S. Krichewsky (January 10, 1925). A comparison made by the latter shows that of the two different formulæ Prof. Plummer's is more accurate for small values of the argument, but breaks down completely for $x/\sigma > \sqrt{6} = 2{\cdot}449$.

In my opinion, however, the most significant point about such approximations, and the one on which their practical usefulness depends, is the integrability of the resulting equation. In stellar statistics, for example, we are constantly dealing with problems involving integration of the incomplete probability function, and an analytical approximation to erf (x) is then invaluable.

I take it that Mr. Krichewsky's formulæ (3) and (5) should read as follows:

$$z = k\left(\frac{a^2}{4} - y^2\right), \quad y = \sqrt{\frac{a^2}{4} - 10^{u}},$$

giving: $$y = \frac{a}{2}\sqrt{1 - 10^{-0{\cdot}5354\, x^2/2\sigma^2}}.$$

This last expression is not integrable. In fact, it is much more difficult to handle, and much more inconvenient to expand into power series, than the original exponential function or its integral.

Prof. Plummer's formula $\text{erf}\,(x) = \frac{6}{\sqrt{\pi}}\frac{x}{x^2+3}$ is extremely simple, and, when integrated, gives rise to an arc tangent or a logarithm.

Concerning the usefulness of approximations when the *values* only of the probability function are needed, it may be pointed out that Mr. Krichewsky's formula requires a table of logarithms, and even then takes more time than interpolation from a probability table. Prof. Plummer's formula can easily be memorised, and the entire calculation can be done in one's head, in about the same time as it takes to interpolate from a table.

W. J. LUYTEN.

Harvard College Observatory,
Cambridge, Mass.

The Word "Australopithecus" and Others.

ALL will admit that many words of Greek origin were used by the Romans, and that *pithecus* was one of them. The evidence adduced, however, does not prove that *pithecus* was regarded as a Latin word. The *pithecium* of Plautus is not a Latin diminutive; it is merely a latinisation of an ordinary Greek diminutive. Had a Roman regarded *pithecus* as Latin, he would not have used the Greek word for "tail" to combine with it: *cercopithecus* is of course pure Greek. Nevertheless had the Roman lived to our day and turned zoologist, he might under stress of circumstances have combined *pithecus* with a word of Latin origin. Circumstances, it is true, did not stress; a good Greek word for "south" was available, and a Roman, especially a "polished Roman," would probably have used it.

But heaven preserve us from pedantry in such matters! The reason for this letter is that Prof. Dart (NATURE, June 6) does not yet realise the many-sidedness of his offences. No Roman, polished or rude, would have used the adjective instead of the substantive. Had Prof. Dart written *Australopithecus* we should merely have shrugged our shoulders and Australia would have had no grievance.

Then "Homosimiidæ"! The word is *not* "parallel with Pithecanthropus or Anthropopithecus," because they are correctly compounded and this is not. But, apart from orthography, if a family is to be erected for the special reception of *Australopithecus*, its name, according to the rules, has to be Australopithecidæ. So that's that.

The moral? Not that a distinguished anatomist must necessarily be a classical scholar; but that any one who sets out to propose a name should realise all his responsibilities. In a word, if you want to join in a game, you must first learn the rules.

F. A. BATHER.

A New Locality for Jurassic Insects.

MR. A. J. LAVRUSHIN, a keen student of geology, who was my interpreter in Siberia, has sent me a careful drawing of a fossil insect which he received from a teacher in the Commercial School at Harbin. It was obtained near the coal mines at Soochan, in the Maritime Province of Siberia. The deposit is known to be Jurassic, probably middle or lower. Mr. Lavrushin says the rock is like that typical of the lower Jurassic. The figure appears to accord perfectly with the larva of the stone-fly *Mesoleuctra gracilis* Brauer, Redtenbacher, and Ganglbauer, known from the Jurassic (supposed middle Jurassic) at Ust Balei, west of Lake Baikal. It seems probable that we have another exposure of these insect-bearing beds, about 1500 miles from the original locality. This, if confirmed, may prove to be a matter of more than ordinary interest. For an account of the Ust Balei deposit and its significance see Bull. Amer. Museum Nat. History, 1924, p. 134.

T. D. A. COCKERELL.

University of Colorado, Boulder,
May 16.

Mercury Helide: A Correction.

IN a former note (NATURE, March 7, p. 337), I stated that a quantitative analysis of mercury helide showed that 210·79 parts by weight of mercury combined with 4·18 parts by weight of helium. I have to regret that this is incorrect. In checking the calculations before incorporating the results in my paper (now ready for publication), I discovered that a decimal point had been misplaced. In consequence of this the stated weight of mercury was ten times greater than that actually found. The simplest assignable formula is therefore $HgHe_{10}$ and not HgHe as at first given.

J. J. MANLEY.

Daubeny Laboratory,
Magdalen College, Oxford, June 4.

Quantum Radiation.

WITH reference to my short letter in NATURE of May 30, p. 838, will you allow me to say apologetically that instead of finishing it off abruptly with the statement that the usual formulæ follow, it would have been better if I had said: "After that no doubt the real difficulties begin." My only object was to direct attention to the peculiarity of the fraction $x/(e^x - 1)$ as almost irresistibly suggesting continuous compound interest growth followed by sudden emission.

ALFRED LODGE.