Observers within a few miles of it heard a noise which is variously compared to the loud rumble of an earthquake, to the roar of a passing train, or to "the banging-together of sheets of galvanised iron". Messrs. Honeyman and Millard, of Karoonda, who were nearer the locality of the fall than any other observers ($2\frac{1}{4}$ miles distant), give the following account: ". . . the disappearance of the meteorite was followed by a loud detonation as though a very heavy charge of explosive had been let off underground. This caused a distinct vibration of buildings near by. This sound was followed, at an interval of about three seconds, by a loud crackling and rending sound from the sky in the direction in which the meteorite was last seen, then by a low rumbling of thunder which gradually died away in the distance."

The meteorite appears to have descended at a steep angle of about 70° with the horizontal. When first seen it had an altitude of 150 miles or more, and the duration of its fall was approximately six seconds. It travelled in an east-south-east direction.

A search party from the University of Adelaide and Adelaide Observatory proceeded to Karoonda on Dec. 6. Two days were spent in making inquiries from local eye-witnesses of the fall. These enabled the locality to be determined within a radius of one or two miles, and on the third day the meteorite was found lying in a sandy fallowed wheat-field, $2\frac{1}{4}$ miles east of the township of Karoonda. It had made a crater-like hole in the sand eighteen inches in diameter and about the same depth, with a surrounding ridge of sand three feet six inches across.

The meteoritic stone had shattered on striking the earth, and numerous fragments were scattered over a radius of four or five feet. The bulk of its mass, however, was within the crater, the largest fragments being on the east side and pointing nearly vertically down. In addition to pieces varying from an ounce or two to seven pounds in weight, there were very numerous smaller fragments and much finely pulverised material mixed with sand. The whole was collected, and the meteoritic material separated from the sand in a magnetic separator. The total weight of the meteorite was thus ascertained to have been 92 lb. On some of the larger fragments a surface layer about one millimetre thick had obviously undergone recent fusion, and both this and other parts of the surface showed the customary 'thumb-marks' and lines of flow.

The meteorite is of a type unfamiliar to any persons who have yet seen it, and possibly unrepresented in Australian collections. It is certainly an 'aerolite' or stony meteorite, and probably of the class termed "Chondrites" by Prior (Guide to the Collection of Meteorites—British Museum Handbook) and the subclass or group "Enstatite—Chondrites".

The material is uniformly of a dark grey, approaching a black colour, with numerous spherical inclusions (chondrules) and specks of metallic lustre, possibly troilite. It is quite friable, has a specific gravity of 2·44 and a distinct 'earthy' odour. A chemical analysis is in progress.

KERR GRANT.
Adelaide. G. F. DODWELL
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Rational Logarithms.

I HAVE recently been considering how best the theory of logarithms could be presented to a beginner without such a paralysing opening as used to be the practice (see Todhunter). I do not know what is done now. But the result of this consideration has been the development of a complete exposition of the whole fundamental principle of the logarithm without any of the mathematical treatment which, so far as I know, is universally employed. The idea, of course, is that this should be an introduction to the usual mathematical treatment, not a substitute for it.

Any discussion with beginners is nothing if not concrete, so that actual figures must be obtained. I have found that this fundamental, basic, or 'low down' treatment of the subject leads directly to a very convenient approximate expression for the logarithm to base e of a number. As is the case with the usual expansions, the expression becomes peculiarly simplified when it is used to find $\log(n+1)/n$ or $\log(n+1) - \log n$, and in order to keep this note within reasonable limits, I give the expression for this only. This is $\log_e(n+1) - \log_e n = \dfrac{12n(n+1)+1}{6n(n+1)(2n+1)}$.

This gives the logarithm with great facility and with very considerable accuracy:

With $n = 10$ the error is $0{\cdot}0^7 65506$.
$n = 100$,, $0{\cdot}0^{12} 81284$.
$n = 1000$,, $0{\cdot}0^{17} 8311$.

In obtaining the fractional expression, two very small errors are intentionally made for the sake of simplicity. The first is almost exactly eliminated by subtracting $\dfrac{1}{12(n+1)^2(2n+1)^3}$, but this merely reduces the error by over-correction to one-eighth of what it was with $n = 9$, increasing to one quarter with $n = 1000$.

The residual error is due to the second cause and as yet I have not been able to get an expression to meet it. That for the first correction, however, is obtained by interesting and instructive means, not quite so easy as those employed in obtaining the original fraction.

I have never seen this way of dealing with logarithms described. I should have expected to find it in Hutton's introduction to his famous tables of 1794, where he discusses every method known at that date. At the same time, it is difficult to imagine that so elementary a process, suitable almost for a kindergarten, is not known, or if it is, why it is not used.

C. V. BOYS.

Denaturation of Wool by Urea.

IN a letter to NATURE of Nov. 1, p. 685, I stated that saturated aqueous solutions of urea unmasked a sulphide in sheep's wool and also extracted a sulphide from the wool. These two statements were based on the observation that addition of a tenth volume of 20 per cent sodium nitroprusside solution, to suspensions of wool in such urea solutions, ten minutes after addition of a similar proportion of 10 per cent potassium cyanide solution (to reduce any –SS– to thiol groups), always led to the development, both in the wool and in the liquid, of a strong pink or magenta colour precisely like that of Arnold's nitroprusside reaction for organic thiol compounds, although in control tests wool not treated with urea developed only a feeble pink, and urea solutions which had not been in contact with wool developed none at all.

I write now to say that the conclusion that the urea solution had extracted a sulphide from the wool was erroneous, for subsequent work has shown that the apparently typical thiol reaction obtained in the extracts was due entirely to a hitherto unknown, and at first very elusive, reaction between urea and some derivative of sodium nitroprusside, previously formed in its solution as a result of an obscure change which may for temporary convenience be referred to as 'ripening'. If the nitroprusside solution is ripe enough, this reaction with urea will become obvious