had a tetraploid number of chromosomes in a portion at least of its somatic tissue, and that it did not, as reported, arise from a semiheterotypic division of the F_1 hybrid. Doubling of chromosomes in the somatic tissue is of rarer occurrence than the origin of tetraploids by failure of reduction, and *S. potternensis* is an important addition to the small list of such somatically doubled forms.

F. W. SANSOME.

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Merton Park, London, S.W.19,
Dec. 10.

[1] Whyte, R. O., Sterility and Flower Abnormality in the Tetraploid *Saxifraga potternensis*, *J. Genet.*, **23**; 1930.
[2] Karpechenko, G. D., The Production of Polyploid Gametes in Hybrids, *Hereditas*, **9**; 1927.
[3] Gregor, J. W., and F. W. Sansome, Genetics of Wild Populations, II., *J. Genet.*, **23**; 1930.
Buxton, B. H., and W. C. F. Newton, Hybrids of *Digitalis ambigua* and *D. purpurea*, their Fertility and Cytology, *J. Genet.*, **19**; 1928.
[5] Clausen, R. E., and T. H. Goodspeed, Interspecific Hybridisation in *Nicotiana*, II. A Tetraploid Glutinosa-tabacum Hybrid—an Experimental Verification of Winge's Hypothesis. *Genetics*, **10**; 1925.
[6] Information kindly supplied by Miss C. Pellew.
[7] Own notes.

Curling.

WE have been interested in seeing the results of Prof. Harrington's experiments on the motion of a curling-stone on ice, published in the *Transactions of the Royal Society of Canada*, and referred to in his letter in NATURE of Sept. 6, p. 351, which show a considerable increase in the friction for small velocities. This must produce, towards the end of a run, a couple tending to increase the spin of the stone; and no doubt explains the fact that the velocity of rotation remains nearly constant until very near the end. But it has little or no bearing on what we have regarded as our main problem (see NATURE of Mar. 15, 1930, p. 408), namely, the production of the curvature of the path of a stone, at a time when the instantaneous centre of the motion may be at a distance of 2 feet or more from the centre of the stone, a considerable distance compared with the radius of the cup.

Any difference of friction at the two sides of the stone, due to difference of velocity, must then be small. But for our purpose it is not necessary to consider the magnitude of it, because it has no tendency to produce the curvature. To account for the observed curvature of the path of the centre of a stone, we must find a force of sufficient magnitude in the direction of the normal to the path. Resolution of the forces shows that a difference of friction at the two sides, if this is the only asymmetry apart from the spin, contributes nothing towards the production of the required force.

We think that the final twist of a stone about a point of the cup, which occasionally occurs as the stone is coming to rest, may be due to regelation. This satisfies the requirement of being a thing which may happen, but usually just fails to happen.

W. H. MACAULAY.

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G. E. SMITH.

Riverbank, Woodbridge, Dec. 9.

The False Killer Dolphin.

ACCORDING to a note in NATURE (Dec. 6, 1930, p. 892), recording the stranding of a false killer dolphin (*Pseudorca crassidens*) in Ceylon in 1929, this species is "regarded as on the verge of extinction". The same statement has appeared elsewhere, but I venture to inquire whether there is any evidence that it is correct.

The false killer was originally described, as *Phocæna crassidens*, by Owen, in 1846, as the result of the examination of a skull and other bones which had been found, sub-fossil, in the Lincolnshire Fens. In 1861 a school of about a hundred individuals appeared in the Bay of Kiel. In 1862 specimens, probably belonging to the same school, were stranded on the Danish islands, and were investigated by Reinhardt, who established the genus *Pseudorca* for this species. About two years later a considerable number of false killers were recorded from Tasmania. Skulls from this herd were sent by Mr. W. L. Crowther, in 1864, to the Royal College of Surgeons; and other specimens were sent by the same donor to the British Museum and the University Museum of Zoology at Cambridge. The species has more recently been recorded from many distant localities, including Travancore, Florida, Argentina, Lower California, and Peru. In 1906 several hundred individuals were stranded in the Chatham Islands. The Dornoch Firth school, October 1927, is referred to in the note published in NATURE, as well as the large herd which was stranded near Cape Town in December 1928.

Most of the earlier records of the false killer as a recent species are given by Dr. J. R. Garrood (*Proc. Zool. Soc.*, p. 177, 1924), who described the very interesting discovery of two skeletons in the Cambridgeshire Fens in 1921.

Justification for the belief that *Pseudorca crassidens* is on the verge of extinction seems to be very slight, in view of the above facts. Mr. W. R. B. Oliver's statement (*Proc. Zool. Soc.*, p. 577, 1922) that this dolphin "is met with in large schools in New Zealand and Tasmanian waters" is in favour of this conclusion. May it not fairly be supposed that the false killer, like many other dolphins, is an inhabitant of the open sea, and that its apparent rarity is merely due to the fact that it is not often observed in the neighbourhood of the land?

SIDNEY F. HARMER.

Melbourn, Cambs, Dec. 12.

Foaming of Beer.

PERHAPS some light may be thrown on the phenomena referred to by Dr. H. S. Rowell in his letters in NATURE of Sept. 20 and Dec. 13, by investigations carried out by B. Shen, George King, and myself a number of years ago (*J. Chem. Soc.*, p. 1313, 1911; p. 1170, 1913).

While the stability of the foam will depend mainly on surface tension and viscosity, the size of 'head' formed under the ordinary conditions of pouring out a glass of beer will depend mainly on the rate of evolution of carbon dioxide from its supersaturated solution in the beer. This rate of evolution varies with the degree of supersaturation, which, in turn, depends on the nature of the beer and the method of its manufacture. A pale ale, for example, was found to evolve carbon dioxide more rapidly than a stout or export beer. The rate of evolution, moreover, depends greatly on the walls of the containing vessel and their effectiveness in supplying gas 'nuclei' to start the evolution of carbon dioxide.

Traces of grease on the surface of the glass are very effective in promoting the escape of gas, and I think that the difference in 'head' obtained with a dry and wet glass is probably due to this fact. Traces of grease are scarcely likely to be wanting from the surface of glasses dried under refreshment-room conditions. In the case of a wet glass, there will be an absence of air bubbles on the surface to act as nuclei. One cannot claim that the factors mentioned are adequate to account for all the phenomena, but they are probably the main factors involved.

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University of Aberdeen, Dec. 13.