

balanced, and it is on him that future expansion really rests. The climate has its virtues. One might mention particularly the remarkable speed of tuber formation which allows main-crop, varieties to set a good yield of seed-sized potatoes within six weeks of emergence, and which may probably be attributed to the intense radiation during the fairly short days, and to the great contrast in temperature between day and night. Against this are various cultural difficulties, especially those associated with the high temperature of the soil through which the shoot must emerge. While they have not stopped the rapid building-up of seed stocks in the past, they remain a danger which cannot safely be ignored, and on their solution hangs the possibility of eventually bringing into use the practically limitless area of suitable climate.

J. E. VAN DER PLANK.

Department of Agriculture and Forestry,  
Pretoria.

J. W. WASSERMAN.

Riet River Settlement,  
P.O. Modder Govt.

<sup>1</sup> Proclamation 4, 1945, S. African Govt. Gazette, Jan. 9, 1945.

<sup>2</sup> Bald, J. G., Council for Sci. and Indust. Res. (Australia), Bull. 165 (1943).

<sup>3</sup> Smith, K. M., and Markham, R., *Nature*, 155, 38 (1945).

<sup>4</sup> Bald, J. G., *J. Council Sci. and Indust. Res.*, (Australia), 17, 258 (1944).

<sup>5</sup> *Nature*, 153, 589 (1944).

<sup>6</sup> For a farmer's opinion of seed from the sister settlement at Vaal Harts, seventy miles away in a similar climate, see (S. African) *Farmer's Weekly*, 58, 1284 (1945).

<sup>7</sup> Elmer, O. H., *Phytopath.*, 32, 972 (1942).

times that of a modern destroyer. In the past, the relative speed of living organisms has always been expressed as the ratio *distance per sec./length of organism*<sup>1</sup>. It would indeed be interesting if one could measure the revolutions per sec. of the organism; but I fear this is impossible at present, since it could only be done either by the use of high-speed photomicrography or by the use of the stroboscope attached to the microscope.

A camera giving 1,200 exposures per sec., each exposure of the order of 1/50,000 sec., is normally available here and the cost of film is only about 6d. per sec.<sup>2</sup>. Unfortunately, owing to the small size of the organisms, high powers of the microscope are essential and this means confining the organisms within a small space and subjecting them to an intense illumination. Under these conditions the swimming of these organisms is quite abnormal, and they usually stop swimming altogether. This being so, neither the film nor the stroboscope would mean anything.

A. G. LOWNDES.

The Laboratory,  
Citadel Hill, Plymouth.

<sup>1</sup> *Tabule Biologicae*, 4, 478.

<sup>2</sup> Lowndes, A. G., "The Twin Polygraph and Strobograph", *Nature*, 135, 1006 (1935).

### Swimming of *Monas stigmatica*

WHILE not disputing the relatively high speed attained by this organism<sup>1</sup>, exception must be taken to Mr. A. G. Lowndes' statement "thus the organism has a relative speed of more than forty, or, in other words, traverses forty times its own length in a second, and on this simple calculation the organism has a relative speed which is twice that of the most modern 'Spitfire' and a thousand times that of a modern destroyer". The figure for a destroyer is nearer two hundred in lieu of one thousand. Moreover, the 'length', for the purpose of such a comparison, should be a dimension in the same plane as the direction of motion.

As this is essentially a hydrodynamic comparison, the well-known law of corresponding speeds should be applied: the correct criterion being speed divided by the square root of the length, and not speed divided by the length as Mr. Lowndes states.

The organism as described is a screw propeller, rather than a hull. That being so, the most important criterion is the relative speed of rotation. This, by the law of corresponding speeds, is the number of revolutions per unit time, multiplied by the square root of the diameter. If Mr. Lowndes can measure the revolutions per second of the organism, it would be extremely interesting to compare its relative rotational speed with that of a 'Spitfire' airscrew or a destroyer propeller.

J. TUTIN.

31 Regent Street, London, S.W.1.

<sup>1</sup> *Nature*, 155, 579 (1945).

DR. TUTIN is a member of the Institution of Naval Architects, and I accept his statement that the relative speed of *Monas stigmatica* is only about two hundred

### Scientific Material in Occupied Europe

MANY people have been perturbed by reports that the Nazis had applied to scientific material the same process of spoliation and confiscation that they had carried out so systematically in the realm of art. For example, on the liberation of southern Holland, it was reported that the Wasmann collection of ants had been forcibly removed from Maastricht to Berlin.

Recently, however, I have received a letter from Dr. Wilhelmina van de Geijn, of the Maastricht Museum, which indicates that in this case the loss has not been so severe as was first feared, thanks to her courage and presence of mind. Readers of *Nature* will be interested to have her account of the incident.

She says (*in lit.*, May 6, 1945), "A Berlin entomologic professor, Bischof, had shown very much interest in our Museum because of the well-known ant collection of Wasmann, which they took or stole and brought it to Berlin. You can read the history in the cutting ("Time" 20 Nov. 1944). He threatened me 'Ich werde Sie sofort einsperren', because I refused to tell him where I had hidden the collection; after some discussion with the Nazi mayor they show him the ants. I had some exciting weeks, because I divided the collection and they did not notice it here, but I was afraid that the professor would pay more attention in Berlin—fortunately I never heard anything."

Reports from Belgium and Holland now coming through fortunately suggest that the theft of the Wasmann collection was the act of an individual bully rather than part of a scheme of systematic spoliation.

ERROL I. WHITE.

Department of Geology,  
British Museum (Natural History),  
Cromwell Road,  
London, S.W.7.  
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