

This solution was inoculated with *Phytophthora erythroseptica* Pethybridge,<sup>2</sup> *Phycomyces Blackesleeanus* Burgeff (+ strain), *Phytophthora fagopyri* Takimoto and *Mucor Ramannianus* Möller,<sup>3</sup> but there was no growth of these in any case, indicating that the medium was free from thiamin, pyrimidine and thiazole.

Solution B: It contained 0.1 gm. each of  $K_2HPO_4$ ,  $MgCl_2 \cdot 6H_2O$ ,  $K_2SO_4$ , 0.8 gm. of  $NH_4NO_3$ , and 1.0 gm. of dextrose per litre of distilled water.

The pH of solutions A and B was 6.8.

The author finds that *Pythium hyphalosticton* grows well in solution A and also in a dilute solution, i.e., B and is transferable in them.

In view of the fact that the fungus grows in the nutrient solution free from vitamin  $B_1$  the author thinks that it is one of those fungi, which do not require any organic growth supplement from extraneous sources but manufacture their own growth-promoting substance or substances from the elementary materials of the nutrient medium. There are indications that thiamin or its intermediates synthesized by the fungus are given off by the mycelium into the medium. These results, which require further verifications, will be published in a subsequent note.

*Pythium hyphalosticton* resembles *Pythium aphanidermatum*<sup>4,5</sup> and many other fungi in its ability to grow in a suitable synthetic liquid solution, which lacks any organic growth supplement.

#### II Series:

Solution C: This was medium C used by Robbins and Kavanagh. Its composition is given in the beginning of this note. Its pH was 4.3.

Solution D: This was made by diluting solution C five times (i.e., 100 c.c. of solution C + 400 c.c. of redistilled water). Its pH was 4.5.

Solution E: This was prepared by diluting solution C ten times. Its pH was 4.75.

Solution F: This was prepared by adding sufficient quantity of  $K_2HPO_4$  to solution C to make its reaction pH 5.3,

Solution G: This was prepared by diluting solution F five times. Its pH was 5.5.

Solution H: This was prepared by diluting solution F ten times. Its pH was about 5.6.

In solution C the organism did not grow at all, while in solution F it made no appreciable growth. In solutions D, E, G and H there was very good growth of the fungus, the colonies of which rose up to about 5 cm. in height in tubes and formed thick mycelial felts on the surface of the nutrient liquids, and in these it was transferable.

It has already been demonstrated that the fungus can grow in suitable synthetic solution without any organic growth supplement from an extraneous source. Therefore, its inability to grow in solutions C and F cannot be due to lack of some growth supplement, or to lack of some nutrient ingredients since it grows in them when they are diluted five or ten times. The experiments demonstrate that the concentration of solutions C and F interferes with the growth.

Robbins and Kavanagh have obtained similar results with *Pythium aphanidermatum*, which is also capable of unlimited growth when the solutions, used by them, are diluted.

R. K. SAKSENA.

Department of Botany,  
University of Allahabad,  
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<sup>1</sup> Robbins, W. J., and Kavanagh, F., *Am. Jour. Bot.*, 1938, 25, 231.

<sup>2</sup> Leonaiian, L. H., and Lilly, V. G., *Phytopath.*, 1938, 28, 533 and 540.

<sup>3</sup> Robbins, W. J., *Bull. Torrey. Bot. Club*, 1938, 65, 274.

<sup>4</sup> — and Kavanagh, F., *Proc. Nat. Acad. Sci.*, 1938, 87, 429.

<sup>5</sup> — — *Bull. Torrey. Bot. Club*, 1938, 65, 453-61.

#### Insecticidal Plants

WITH reference to the note on "Insecticidal Plants" appearing in *Current Science*,<sup>1</sup> we write to say that work in this direction and more especially with Derris, *Derris ferruginea*, Pyrethrum, *Chrysanthemum Cincærariefolium* and *Tephrosia* spp., is in progress at our Institute

since the last 18 months. The stock raised from our experimental nursery under control conditions has been distributed to different parts in the State to study the effects of varying soil and climatic factors. Details regarding their sylviculture, active principle content, etc., will be published elsewhere. We should like to record here that, contrary to the widespread impression that *Pyrethrum* does not flower below an altitude of 6,000 feet, the species has flowered both at Bangalore (ca. 3,100 ft.) and at Kemmangundi (ca. 5,000 ft.).

S. A. KABIR.

M. N. RAMASWAMY.

Forest Research Laboratories,  
Malleswaram, Bangalore,  
January 3, 1939.

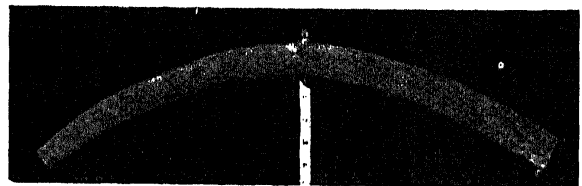
<sup>1</sup> *Curr. Sci.*, 1938, 7, 258.

### A Type of Boomerang from Palanpur

OF the two types of boomerangs used in India the so-called returning type is figured both in Egerton's<sup>1</sup> book and in Thurston's.<sup>2</sup> The other type is, as far as I can know, figured only once in Egerton's<sup>3</sup> book. The two specimens of the first type figured by Thurston differ among themselves as well as from the specimens figured by Egerton as regards their curvature. The type occurs both in Gujarat as well as in South India as seen from the description of the specimens by Egerton<sup>4</sup> and Thurston.<sup>5</sup> Gujarat specimens are made of wood while South Indian ones are either of wood or of ivory. The other type called 'Katar' or 'Katariya' and described by Egerton as used by 'Koles' (Kolis) of Gujarat is made of wood. The one specimen of this type figured by him shows rather a sharp angle at the centre. Three such specimens are recorded by him and their length on the outer curve is given to be 2' 6" to 3'. He has not given measurements of width.<sup>6</sup> Egerton lists<sup>7</sup> and describes a boomerang 'Singa' from Southern India as made of steel with a length of 18" to 21" and a width of 2½" to 3".

From the description, with width specified, it appears that this boomerang of steel from Southern India may be of the type of the simple boomerang of the second type and described by Egerton as being used by the 'Koles' of Gujarat. If it is so, and here I should mention that the specimen is not figured anywhere, this ordinary boomerang, like the other one, is in use both in the North as well as in the South. What the shape of the Southern type may be it is not possible to judge, for lack of illustration.

While on tour in the State of Palanpur in February 1938, I procured a specimen of the ordinary type of boomerang used by lower classes for hunting small game. The length of the curve on the outer side is 29.5" and the width of the two ends is 1.5" and 1.3" respectively. As the illustration makes it clear,



the specimen has a more flowing curve than the specimen illustrated by Egerton. Perhaps the nature of the curve of this implement depended more on the natural curve of the wood used than on conscious selection.\*

G. S. GHURYE.

School of Economics and Sociology,  
University of Bombay,  
February 14, 1939.

<sup>1</sup> *An Illustrated Handbook of Indian Art*, 1880, Fig. 15, 4, p. 73.

<sup>2</sup> *Ethnographic Notes in Southern India*, 1907, Pl. XXXVII.

<sup>3</sup> *Loc. cit.*, Fig. 15, 1.

<sup>4</sup> *Loc. cit.*, pp. 78-81.

<sup>5</sup> *Loc. cit.*, p. 56.

<sup>6</sup> *Loc. cit.*, p. 78.

<sup>7</sup> *Loc. cit.*, p. 81, No. 70.

\*The specimen is deposited in the Government Museum, Madras.