

the findings of previous workers (Haagen-Smit, 1945) that the growth factors in coconut water are different from those derived from the corn kernel.

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October 11, 1949.

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#### A MOSAIC DISEASE OF SUNN HEMP IN BOMBAY

THE virus causing mosaic disease in sunn hemp (*Crotalaria juncea* L.) was found in November 1940, on some plants in an experimental plot cultivated for raising seeds of the wilt resistant variety at the Agricultural College Farm, Poonna. The disease appeared during three consecutive seasons among plants grown in the same plot and from seeds collected from the diseased crop in the previous season.

*Symptoms.*—The disease appears as distinct mosaic mottling on younger leaves in about 9 days following sap inoculation of plants. The inoculated leaves do not display any disease symptoms. As the infected plants grow the leaves, which are reduced in size and slightly malformed, develop puckering in the form of raised blister-like green areas alternating with light green areas. Occasionally thin elongated enations are also formed on the under side of leaves. Affected plants are dwarfed and produce poor seed.

*The virus.*—The virus is readily transmitted on inoculation with infective sap by the leaf rubbing method. It retains infectivity at a dilution of  $1 \times 10^{-5}$ , withstands heating for 10 minutes at 90° C. and in an undiluted crude sap was still infective after storage for 557 days. The virus also withstands contact with 90 per cent. ethyl alcohol for 24 hours. So far no insect vector of the virus has been found.

*Host range.*—In addition to sunn hemp, the virus is infectious to *Crotalaria retusa*, *C. striata*, *C. lanceolata*, *C. spectabilis*, *C. laburnifolia*, *C. usaramoensis*, *Lathyrus sativus*, *Phaseolus vulgaris*, *P. lunatus*, *Vigna unguiculata* and *V. sesquipedalis*. It causes formation of only local

lesions in *Nicotiana glutinosa*, *N. sylvestris*, *Datura stramonium* and *Capsicum frutescens*. The virus did not infect *Dolichos lablab*, *Solanum nodiflorum*, *Datura alba* and tobacco amongst many others which were inoculated with infective sap. Cowpea (*Vigna sinensis*) and tomato supported virus multiplication in them without developing any symptoms of the disease.

*Crotalaria* mosaic has been reported in the past from Poerto Rico<sup>1,2</sup> Hawaii,<sup>3</sup> Japan,<sup>4</sup> Malaya,<sup>5</sup> China,<sup>6</sup> United States<sup>7</sup> and Trinidad.<sup>8</sup> The disease dealt with in this note is the second record of a mosaic virus affecting sunn hemp in India, since a mosaic disease of *Crotalaria juncea* has been reported from Delhi in 1947.<sup>9,10</sup> Though the disease occurring in Bombay resembles that reported from Delhi<sup>9</sup> in its symptom expression, it is quite distinct from the latter in respect of its physical properties and host range. Accordingly, this virus has been designated as 'southern sunn hemp mosaic' virus in order to distinguish it from that occurring in North India.

This work is being carried out under a scheme financed by the Indian Council of Agricultural Research.

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October 17, 1949.

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#### CATALASE RATIO AS A RAPID METHOD FOR DETERMINING THE GERMINATING CAPACITY OF SEEDS

ATTEMPTS have been made in recent years to evolve a rapid and reliable method for testing the viability of seeds. The investigations of Nemec and Duchon,<sup>2</sup> Davis,<sup>1</sup> and Singh, *et al.*<sup>4</sup> reveal the close correlation between the catalase activity and the germinating capacity of the seeds.

The response of seeds and seedlings of varying biochemical constitution to hormone treatment shows that the catalase ratio (ratio of the catalase activity of the soaked