This work was supported by a grant from the American Cancer Society recommended by the Committee on Growth.

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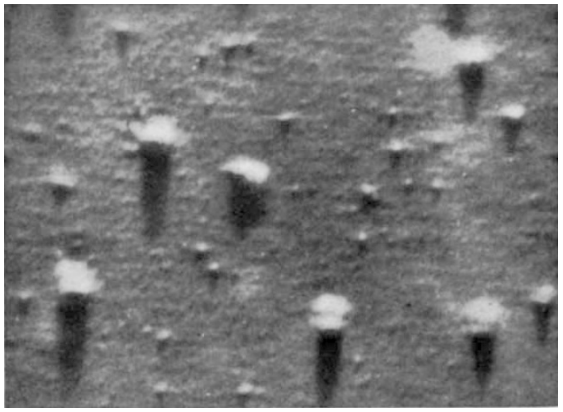
Structure of Sannhemp (*Crotalaria juncea* Linn.) Mosaic Virus with the Electron Microscope

A mosaic virus of sannhemp (*Crotalaria juncea* Linn.) was crystallized[1] at the Indian Agricultural Research Institute following the method suggested by Bawden[2]. Later, the virus was crystallized, employing the method of Markham and Smith[3] used for isolation and crystallization of turnip yellow mosaic virus. Control experiments conducted with the expressed sap of the leaves of healthy sannhemp plants and subjected to treatment similar to that given to the infective sap showed that no such crystalline substance could be obtained from healthy material. Solutions of the crystalline preparation indicated positive results in every inoculation test, and typical symptoms were produced on sannhemp plants. Raychaudhuri and Ramamoorty[4] studied the light-absorption curve of 0·11 per cent crystalline solution of sannhemp mosaic virus in a centimetre layer of the solution on a Hilger Spekker spectrophotometer *E*2, and observed two maxima, at 2770 A. and 2632 A., and a third one at 2958 A., with an inflexion point at about 2146 A. A preliminary study has now been made of the size and shape of the structures considered to be virus particles, as observed in the electron-micrographs of the crystalline preparation. The micrographs have been made with the electron microscope installed in the Institute of Nuclear Physics at Calcutta[5].

A micrograph of sannhemp mosaic virus shadowed with gold is reproduced herewith. A drop of the solution of crystalline virus in sterile water was dried on the collodion film mounted on the usual steel mesh. This was then shadowed with gold at angles ranging from $\tan^{-1}\frac{1}{5}$ to $\tan^{-1}\frac{1}{10}$. Several micrographs have been made of such shadowed specimens, and that reproduced is typical. This is a negative print; shadows are dark and the virus particles appear white. These electron micrographs seem to indicate that this virus consists of spherical particles. The measured diameter of the spherical particles varies from 40 to 26 mμ, the majority having a diameter close to 33 mμ. Further work is in progress.



Electron micrograph of shadowed sannhemp virus at a magnification of 38,000 diameters

The size and shape of different plant viruses crystallized so far are shown in the accompanying table for purposes of comparison.

Virus	Shape	Approximate size
Tobacco mosaic (ref. 6)	Rod	15 mμ × 300 mμ
Tomato bushy stunt (ref. 7)	Spherical	26 mμ
Tobacco necrosis (ref. 7)	,,	20 mμ
Southern bean mosaic (ref. 8)	,,	26 mμ
Squash mosaic (ref. 9)	,,	30 mμ
Turnip yellow mosaic (ref. 10)	,,	22 mμ
Sannhemp mosaic	,,	33 mμ

Thanks are due to Prof. M. N. Saha and Dr. J. N. Mukherji for their interest in the work, and to the Ministry of Education, Government of India, for supporting this investigation.

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Isolation of 17-Hydroxycorticosterone and 17-Hydroxy-11-dehydrocorticosterone from Hog Adrenals

The isolation of 17-hydroxycorticosterone and 17-hydroxy-11-dehydrocorticosterone from hog adrenals has been described by Kuizenga *et al.*[1,2]. The method described involved many stages and an extensive series of benzene–water partitions to effect the separation and isolation of these compounds, the fractionation being followed by means of biological assays.

In this communication we wish to report a simplified method for the preparation of concentrates of these compounds from hog adrenals, involving only four stages, and for the isolation of these compounds from such concentrates by a simple chromatographic technique, giving yields higher than those previously recorded. The following details describe a typical experiment.