by the three group *O*, *Le*(*a* +), *Tj*(*a* +) Indians described by Bhatia *et al.*[4]. This variety of anti-*H* resembles anti-Tj^a in its regular occurrence with a specific and very rare genotype and its reactions with all random bloods tested. Of the thirteen individuals producing or possessing anti-Tj^a, nine are in group *O* and four in group *A*, and with one exception all those tested with anti-Le^a are negative.

The occurrence of six consecutive miscarriages of the propositus of the Japanese family is very remarkable, and their etiological relationship to the presence of anti-Tj^a is suggested by a history of miscarriages in each one of eleven pregnancies of three patients (4, 4 and 3 respectively) studied by Zoutendyk and Levine[5], Hirszfeld and Grabowska[6] and Levine *et al.*[7]. If one includes the Australian patient with one miscarriage (Walsh and Kooptzoff[8]), there is a total of eighteen miscarriages with no full-term pregnancies in five patients with anti-Tj^a, all of whom are in the child-bearing age. The only exceptions are the first two Virginia siblings aged sixty-six and forty-three, in one of whose sera anti-Tj^a was first identified as a new antibody. Although not found in the younger sibling in 1951, anti-Tj^a was demonstrated in 1953. The two siblings had eleven (four and seven respectively) full-term, normal and successful pregnancies with no miscarriages. It now appears that the gastric adenocarcinoma in the older sibling bears no relationship to the presence of anti-Tj^a (Walsh and Kooptzoff[8]).

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Antitubercular Effect of an Extract of *Adhatoda vasica*

Adhatoda vasica is a small sub-herbaceous bush which grows all over the plains of India and is extensively used in indigenous medicine as a remedy for colds, cough, bronchitis and asthma. Hooper (1888) carried out its chemical analysis and found that it contained an odorous volatile principle and an alkaloid called vasicine. The alkaloid was found to have no action on tubercle bacilli (Chopra *et al.*, 1925).

The antitubercular activity of the volatile principle, which was obtained by steam distillation of the leaves, was determined by the serial dilution method, and the results are shown in the accompanying table.

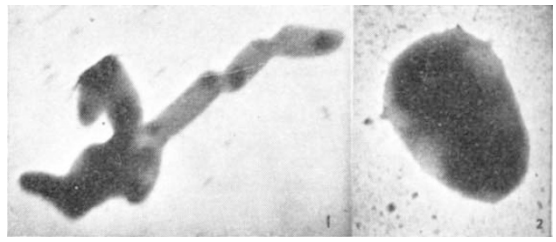
Antitubercular Activity

Drug	Strain No.	Inoculum	Inhibitory concentration (μgm./c.c.)
Volatile principle	*B*–19–4 (human)	0·01 mgm./c.c.	2
	B–19–3 (bovine)	,,	5
	B–19–1 (avian)	,,	5
Streptomycin	*B*–19–4	,,	1

The activity of the drug is thus less than half that of streptomycin.

The drug does not produce any toxic symptoms in a dose of 2·3 gm./kgm. when administered to mice orally or subcutaneously.

Various concentrations of the drug were incorporated in the culture of bovine tubercle bacilli in liquid media, and the effect was studied under the electron microscope at various intervals. Under the influence of the drug there is inhibition of growth and the bacilli swell up (Figs. 1 and 2).



(1) Bovine strain of tubercle bacilli four days old. (2) Bacilli after 4 days treatment with active extract of *Adhatoda vasica*. × 10,500. Electron micrographs by Dr. A. Pande and K. Bahadur, National Physical Laboratory, New Delhi

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Preparative Circular Paper Chromatography

From the preparative aspect, the conventional paper chromatographic technique is rather limited, in that only a few micrograms of material can be spotted on a single strip or sheet, and the labour involved in the separation of even milligram quantities in this way is enormous. From this point of view the circular paper chromatographic technique[1] offers great possibilities. By a suitable modification of this technique, it has been found possible to obtain from a single chromatogram material of individual components from a mixture of sugars sufficient for the determination of physical constants and preparation of characteristic derivatives.

The essential features of the technique consists in the use of thick and large-size circular filter paper (Whatman No. 3, 35 cm. diam.) and the application of the multiple development technique. The method consists in spotting 0·1–0·2 ml. at a time of the sample containing a mixture of sugars (about 20 per cent each of three to five sugars) at the centre of the paper and drying before another aliquot is superimposed on it until 0·5 ml. of the solution has been applied. The size of the spot can be as large as