INTRODUCTION

The plants of *Tinospora cordifolia* (Millld.) Hook. f. & Thoms., and *T. malabarica* (Lamk.) Hook. f. & Thoms., known by the name of Gaduchi, are extensively used in Ayurveda, as well as a household remedy. The entire plants are used in medicine but the fresh stem is preferred. The various uses of these are, 1) as a bitter tonic, and anti-pyretic drug; 2) as an anti-inflammatory agent for the diseases like rheumatoid arthritis; 3) as an anti-diabetic drug; 4) Hartwell (1970) has mentioned that numerous preparations of *T. cordifolia* are used for various types of cancers; and 5) several medicated oils prepared from these are used for skin troubles.

The starch contained in the plants is reported to be a potent vegetable tonic and is given in diarrhoea, jaundice and diabetes etc.

Chemical studies

Flückiger (1884) was the first to report that bitter principles of the plant of *T. cordifolia* are glucosides. Pendse and Dutt (1932) ascertained the presence of an alkaloid. Joise (1941) and Bhide et al. (1941) isolated bitter principles from it. Kidwai et al. (1949) isolated a glycoside bitter, a non-glycoside bitter and a sterol, while Sehgal and Majumdar (1950) reported alkaloids, sterol and a fatty acid. Chatterjee and Ghosh (1950) detected tinosporine—the bitter principle in it. Qadirat-i-Khuda (1954) obtained two bitters, an alkaloid and sterols.
Pharmacological studies

The researches by Gupta et al. (1967) have indicated that *T. cordifolia* has marked anti-diabetic and anti-inflammatory activity. The anti-diabetic effect is confirmed by Raghunathan (1968), Raghunathan and Sharma (1969), and Bajpai et al. (1971).

Pharmacognostic studies

A good amount of work has been done on the stem of *T. cordifolia*. A brief description is available in Indian Pharmaceutical Codex (Mukerji, 1953). Namjoshi (1955) described the stem, aerial root and starch grains. Some work has been done by Deshmukh et al. (1957) also. Aiyer and Kolammal (1963) gave detailed account of the plant from South India but this was not found satisfactory by Khosa and Prasad (1971) who described both the stem and the aerial root. Raghunathan et al. (1960) have made the investigations on the leaves of *T. cordifolia* but from the account given it appears that these authors have described the leaves of *T. malabarica* instead of *T. cordifolia*, since trichomes are absent in the latter species.

From the survey given above it is evident that the underground storage roots which are a good source of the starch, have not been investigated so far, nor any work has been done on the extractive values of the various parts of the plants. Furthermore a comparison of the quantitative values as well as the fluorescence characteristics of the stem as given by Khosa and Prasad (1971) and as determined by the present writer revealed considerable differences. It may also
be stated that usually no distinction is made by the investigators between *T. cordifolia* and *T. malabarica* and this may probably account for the above mentioned discrepancies. Keeping in view the above, it was thought desirable to work out the two species separately, highlighting the important differences. A detailed account of 'Gaduchi Satva' (starch grains) is also presented at the end.