



Summary

The genus *Crinum* L. has earned much attention as a medicinal plant with various properties. In India it is well-known as a lily. Some of the species are very much economically important due to their attractive and showy flowers. Some of the species are being used as components of different drugs prepared in pharmaceutical industries. The both studied species are also used by different traditional medical practitioners of Bankura and Paschim Medinipur. In consideration of medicinal as well as horticultural significance of both the species of *Crinum* L. has been chosen for investigation here. In the course of procuring live plant materials of the species, two related species *Crinum asiaticum* and *Crinum latifolium* were included in the present research programme with an aim to scrutinize the availability of the medicinally important active principle, lycorine and quantity thereof. Since the presence of lycorine has been reported in a couple of species of *Crinum* too, by earlier workers and still then *C. latifolium* is given prime importance due to producing greater quantity of it, chances remain in using the plant materials of other congeneric species as substitute or adulterant. To recognize the right species through characterization of them in the light of different traits e.g. morphology, anatomy, biochemistry, chromosomal features etc. proves to be effective. Various analyses under the purview of pharmacognosy provide added advantage to it and also extend a unique facility to identify the desirable species, even from dry specimen as well as live plant materials, the form in which they are supplied in crude drugs. Moreover, a comparative approach to studying the species helps better understanding and delimiting them. Considering these rationales as the lying principles the studies of a gross habit, bulb morphology, macro and micro - morphology, anatomy, pharmacognosy, biochemistry, cytology

etc. have been done for all collected provenance. Thus, earlier part of investigation includes characterization of both species collected from different provenances with respect to several traits of different levels and also confirmation of quantitation of lycorine.

Live plants of all the provenances, worked here, were collected from different sources, however, were reared in the same garden of university. In gross appearance *C. asiaticum* and *C. latifolium* look similar in nature. Morphological distinction in different plant parts like bulb, leaf, flower etc. has been worked out to delimit the species. A close perusal also discriminates bulbs of different species, based on external morphology. Floral characteristics and anatomical studies of leaf and root have also brought out discriminating features to recognize four species dealt here with.

In addition to specific tissue orientation localization of various ergastic substances e.g. raphides, stone cells etc. also have shown difference in the studied provenance. Since the species have medicinal uses, the plant materials are often supplied in powder form. For that reason morphological and anatomical features do not come to any use to determine the species identity. Pharmacognostic analyses succour well in such state. Response of powder drug to UV light, fragmented tissue elements, unique nature of ergastic substances like raphides, stone cells etc. all as different components of pharmacognostic studies have been effectively used to discriminate powdered plant materials of studied species.

Cytological analyses of both the species have unravelled chromosomal characters

showing both relatedness amongst them as well as uniqueness to establish individuality. The entire different provenance has contained same somatic chromosome numbers ($2n = 22$) in both species. Details of karyotypic features have been recorded to be quite effectively discriminatory for the species under study.