PREFACE
This work is devoted to a comprehensive probe of the role of *Mucuna pruriens* Baker seeds in male fertility. The active constituents of the seeds were extracted and isolated, and purified to study their role in male reproductive physiology. The plant drug is claimed to be an aphrodisiac and a performance enhancer as mentioned in Ayurvedic and pharmacognostic literature. Ayurvedic physicians purport it to be a corrective in male fertility disorders such as oligozoospermia and azoospermia, even though these claims are not buttressed by a comprehensive pharmacological probe of this plant alone.

Investigations of marketed formulations such as Speman Forte of Himalaya Drug Company, Bombay, for its role in spermatogenesis, have been carried out and published, but *Mucuna pruriens* Baker as total plant extract figures in the formulation as just one of some fifteen ingredients, and, therefore, the study cannot be deemed to be accurate or conclusive in respect of *Mucuna pruriens* alone. Claims from physicians of herbal drugs as also village-folk, based on their knowledge and experience of herbal remedies, needed substantiation by an in-depth study of the plant seeds, the most important medicinal part of the plant. Therefore, a comprehensive study was undertaken to ascertain the role of seeds, as also of its individual active principles,
in male reproductive physiology, covering several aspects of male fertility such as weight changes in testes and secondary sex organs, changes in sperm count, sperm motility, as also in biochemical factors i.e. levels of fructose and glycerylphosphocholine (GPC) in sex organs.

For isolation of alkaloids the seeds of the plant were collected from the wild. It was learned earlier that the collected seeds were preferable to the marketed seeds as the latter are separated, in practice, from the itchy bristled pods upon burning them. The yield of the total alkaloids from the marketed sample, isolated by the same procedures as in the present work, was found to be poorer by forty per cent; the cause for which was found to be partial destruction of alkaloids by burning and the adulteration of the sample.

The seeds were collected for the work from the forests of Sagar district when the pods ripened and dried between February and April.

Although the collected drug could be identified taxonomically as well as pharmacognostically, it was identified by the former method as it offered quick comparison of the plant shoots (collected with their flowers and maturing pods, in various parts of the plant season) with the authentic plant of *Mucuna pruriens* Baker in the herbarium of the Department
of Botanical Sciences of this University. The plant was found identical to the reference specimen.

As it is known that pharmacologically active entities predominate in the seed as alkaloids, attempts were made to isolate the seed alkaloids along with some non-alkaloidal principles, employing four isolation procedures for alkaloids to obtain their maximal yield and to individualise them in their pure forms for characterisation and male reproductive pharmacology.