

An old question revived: "What are the stipules of Lotus?"

CHAIYA CLARA HEYN

Department of Botany, The Hebrew University,
Jerusalem, Israel

Lotus and Tetragonolobus are either accepted as two separate genera or included both in Lotus, like originally done by Linnaeus (1753).

One of the major characters by which Tetragonolobus is separated from Lotus is by the foliar stipules (e.g., Taubert, 1894; Brand, 1898). Callen (1958) who includes Tetragonolobus in Lotus as a subgenus, also retains this character as one of the differential characters of the subgenus.

There is a longstanding controversy as to the interpretation of the stipules. Irmisch (1861) records "kleine druesenfoermige Nebenblaettchen" in species of Lotus and Tetragonolobus. In the related genus Bonjeania, he found in B. hirsuta that the same small glands were sometimes "... gruen, flaechanfoermig ausgebreitet, von einem deutlichen Mittelnery durchzogen und behaart". He proposed, therefore, that all three genera should be considered as having leaves with 5 leaflets. Alefeld (1862), who contradicted Irmisch, assumed that the glands considered as stipules are, in fact, nectariferous appendages of the real stipules. He cited as a homologous structure the extrafloral nectaries of some species of Vicia which are partly or wholly separated from the main part of the stipules. He further adds that, according to his observations, the two lower leaflets

(stipules - according to his view) do not behave as leguminous leaflets as they are neither folded nor rolled inwards in the bud.

Irmisch's interpretation of the Lotus leaf has been generally accepted (McDonald, 1946; Callen, 1958 and Floras in general), but for some reason, his similar interpretation of the Tetragonolobus leaf has been more or less forgotten.

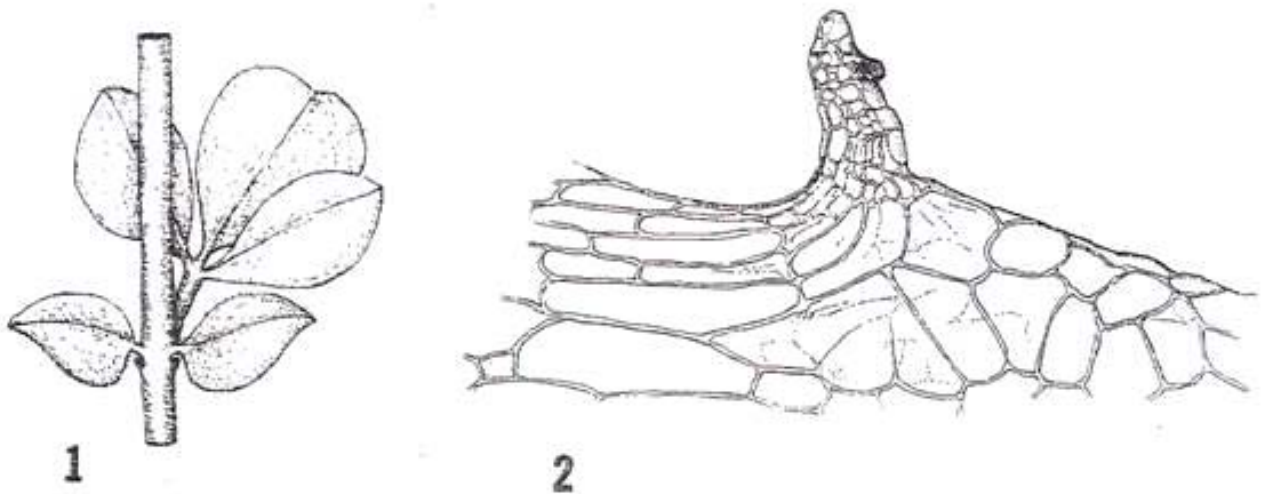


Fig. 1. Young leaf of Lotus peregrinus L. with "stipules" (X 5).

Fig. 2. Drawing of photomicrograph of one "stipule" (note the drop on its edge) of L. peregrinus L.

During the preparation of an account of Lotus and Tetragonolobus for the Flora of Turkey, I have come across this problem and consequently we looked at some young plants of both genera, took photographs and some drawings were prepared.

From these the following seems to emerge:

(1) The fact noted by Irmisch of the occurrence of glanduliform stipules in Lotus and in Tetragonolobus has been confirmed (Fig. 1).

(2) They seem to be real glands which exude small drops of liquid (nectar?) (Fig. 2).

(3) We can, therefore, either accept Irmisch's view and consider both Lotus and Tetragonolobus as having 5 leaflets, the lower pair foliar in Lotus, stipular in Tetragonolobus. Or if we accept Alefeld's view - both genera should be considered as having three leaflets - Lotus with foliar stipules, both with "nectariferous appendages" on their stipules.

Does anybody have additional suggestions or ways of proving the suggested interpretations?

References

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