

MINT NOTES

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IV. MENTHA PIPERITA L. AND THE BRITISH PEPPERMINTS.

Peppermints, in spite of capitate forms, are classed as spicate mints, and differ from all other British groups in this division (except the *aquatica-longifolia* hybrids) in having clearly stalked leaves. They are considered by many authorities as hybrids of *M. spicata* L. emend. Huds. with *M. aquatica* L., and their morphological characters support this view to a considerable extent (see Fraser, 1934, *Rep. Bot. Soc. & E.C.*, 10, 590; Still, 1936, *Rep. Bot. Soc. & E.C.*, 11, 106-108). Reproduction would appear to be mainly vegetatively by runners, and the rarity of fertile seeds perhaps indicates a hybrid origin. *Mentha crispa* L. and *Mentha citrata* Ehrh. are also considered by some to have arisen as hybrids from the same two parents; these will be discussed in a later paper.

The British peppermints have been divided into several closely allied varieties, the elucidation of which is the object of this paper. As with most mint groups there is considerable variation in certain characters, and the proximity of one variety to another has led to some difficulty in determination, which is augmented by the frequency of intermediates.

It is difficult to be sure of their status—native or introduced. There has been considerable local cultivation as a crop as a source of menthol (used as a flavour in various sweetmeats and medicines, and for other purposes) and in gardens for mint sauce, though spearmint is more generally used for this purpose and is perhaps more satisfactory owing to its stronger and sweeter flavour. Peppermints, however, are found in most parts of the British Isles, often in situations where they have at least the appearance of being native.

I am indebted to Mr J. E. Dandy and Mr H. K. Airy Shaw for advice on nomenclature and typification, and to many friends who have allowed me to see their specimens. In fact, a great wealth of material has been seen during a period of over a year. I wish also to express sincere thanks to Mr S. Savage for a great measure of kindly help and advice when working at the Linnean Society during the preparation of this and other papers on mints.

MENTHA PIPERITA L., 1753, *Sp. Pl.*, ed. 1, 576.

1. var. PIPERITA.

Mentha floribus capitatis, foliis lanceolatis serratis subpetiolatis L., l.c.

Mentha spicis brevioribus et habitioribus, foliis menthae fuscae, sapore fervido piperis. Ray, *Syn.*, ed. 3, 234, t. 10, fig. 2.

Mentha piperita officinalis Sole, 1798, *Menth. Brit.*, 15. Herb. Linn., spec. No. 730/12. (Savage, 1945, *Catalogue*).

Stem greenish-purple, with a very few scattered deflexed white hairs below, almost glabrous above. *Leaves* stalked, narrow-lanceolate, acute, with a few scattered white hairs above (and with rather more hairs on the veins below) the under-surface as in all peppermints covered with yellowish glands, attenuate at the base; serratures up to about 14, shallow but sharp and rather salient, irregular in number, size and spacing. *Inflorescence* an elongated, thick spike, the lower whorls separated. *Calyx* tubular, greenish-purple, glandular, with the teeth about two-thirds the length of the tube and ciliate with white hairs, otherwise glabrous. *Pedicels* glabrous. *Corolla* glabrous, the stamens apparently included.

The above description is based on a specimen in Herb. Buddle. A certain Dr Eales was, according to Ray, the first recorded finder of this mint, and as this specimen bears his name as well as Ray's Latin description it is most probably from the original gathering. It can therefore be regarded as Ray's type. Linnaeus quoted only Ray's name (see above) under *M. piperita*, and wrote also "*Habitat in Anglia*", thus clearly defining his peppermint as a British plant. The specimen can, therefore, also be accepted as the type of *M. piperita* L.

As, however, the specimen is somewhat fragmentary and immature, it is advisable also to consult other examples of typical material, and the two specimens named as *Mentha piperita officinalis* in Sole's collection at the Linnean Society are recommended in that one of them indicates an additional character of this variety which is not apparent in the type. In var. *piperita* the leaf-bases are usually attenuate, but, occasionally specimens with a rounded leaf-base occur, as one of Sole's specimens indicates. There is, in fact, a gradation in this variety from an attenuate leaf-base to a rounded, both extremes being sometimes found on one plant.

In this variety the leaves are essentially *long and narrow*. Sometimes, however, a broadening, more usually of upper leaves, will be found. The inflorescence is typically a *long, thick, rather blunt spike* on the main axis, often deeply coloured owing to reddening of the calyces, with the lower whorls becoming separated at maturity and usually pedunculate. Sometimes, however, the spike is short, even on mature plants, and has the appearance of a capitulum though it is less broad and thick than the capitulum of a water mint. On occasions both spikes and capitula will occur on one plant, though the main axis is usually spicate. In luxuriant specimens there is considerably more branching than the type shows.

There was evidently some early confusion in references. Both Sole and Smith cited Ray in reference to var. *vulgaris* (below), but a glance at the Herb. Buddle specimen is enough to show that reference would have more correctly been made to Sole's *Mentha piperita officinalis*, which, despite Sole's references, is undoubtedly synonymous with var. *piperita*. Another specimen in this same herbarium, *Mentha aquatica nigricans, fervido sapore*, is also clearly the same sort of peppermint, and, in this case, Smith's citation is correct.

Var. *piperita* is represented in the Linnean herbarium by a specimen (No. 730/12) which bears no identification in Linnaeus' handwriting. Another specimen (No. 730/10), which Linnaeus named as *piperita*, was described by Smith as a variety of *M. hirsuta* L. with the flavour of a peppermint, which he believed to be the peppermint of northern Europe. Smith states that it came from the Uppsala garden though I can find no definite evidence for this. However, as peppermints are apparently always plants of cultivation in Sweden one must assume a garden origin. It is a strange mint, by no means easy to fit into the peppermint group. Except in its long and rather narrow leaves it bears considerable resemblance to a water mint, having also a capitate inflorescence. It is on Smith's evidence that it had a strong peppermint flavour (no longer traceable) that it must, I think, be excluded from the water mint group and be regarded as a peppermint. The stalks, calyces and pedicels are covered with hairs, and yet the leaves are nearly glabrous, thus it can scarcely be regarded as a normal hairy form of var. *piperita* (f. *hirsuta*, below). In general character it is perhaps nearest to var. *vulgaris*, from which it may have arisen as a sport. If peppermints are hybrids of the suggested parents a sport reverting to *M. aquatica* might produce a mint such as this. Whereas Smith believed this specimen to represent the mint which Linnaeus described as his *M. piperita*, he preferred to retain the name for British material which he regarded as true peppermint. This, according to modern rules of nomenclature, would be incorrect, though in the last instance Smith was right. Coincidentally this specimen agrees with Linnaeus' description, but it is clear that Linnaeus named his peppermint on the evidence provided by Ray, and his "*floribus capitatis*" is undoubtedly due to his consultation of Ray's figure which Sole correctly described as a "centaur", the artist having apparently muddled his subjects to the extent of drawing an obvious capitate head of a water mint on the stem and leaves of a typical peppermint. Moreover, there is evidence that this specimen was added to the Linnean herbarium at some date later than 1753; thus, though it may perhaps be regarded as "illustrative" of Linnaeus' opinion, it cannot be regarded as Linnaeus' type. Sole disagreed with Smith that the peppermint which Linnaeus described was different from that described by Ray, and his lively and acrimonious comments on this and other similar matters are worth reading (Savage, 1937, *Proc. Linn. Soc.*, 105, 31), though he erroneously cited Linnaeus and Ray in reference to his var. *vulgaris*, owing, no doubt, to his not having seen the important specimen in Herb. Buddle.

forma *HIRSUTA* (Fraser) comb. nov.

× *Mentha hircina* Hull var. *hirsuta* Fraser (1927, *Rep. Bot. Soc. & E.C.*, 8, 221).

This hairy peppermint, called by Still (1938, *J. Bot.*, 76, 55) "*lusus pilosus*", is clearly a hirsute form of var. *piperita*. (Fraser's treatment of *Mentha hircina* Hull was erroneous as neither the specimen from

which he drew his description nor his var. *hirsuta* are hybrids of *M. aquatica* with *M. longifolia*.) It differs from var. *piperita* only in the abundance of whitish hairs that cover the stalks, leaves (especially the undersides), pedicels and calyces; and in a somewhat reduced pungency—a normal phenomenon in *Mentha* where a glabrous or subglabrous form can be compared with a corresponding hirsute one.

It is rarer than var. *piperita*, but probably extends to all areas where this variety, with which it sometimes grows, is found.

2. var. *VULGARIS* Sole.

Mentha piperita vulgaris Sole, 1798, *Menth. Brit.*, 19.

Mentha piperita L. var. *Druceana* Briquet ex Fraser, 1925, *Rep. Bot. Soc. & E.C.*, 7, 613.

Stem purple, much branched with flexuous branches. *Leaves* rather broadly ovate-lanceolate, rounded or cuneate at the base, the larger ones 6.7 × 3.4 cms. and rather obtuse; serratures shallow but rather sharp, not salient. *Inflorescence* a blunt capitulum, rounded or, sometimes, becoming elongated at maturity. *Calyx* tube glabrous, the teeth shortly and sparsely ciliate. *Stamens* included.

Sole's description is inadequate for a critical mint, and the above description is taken from the two specimens among his set of mints at the Linnean Society. By comparison with var. *piperita* the leaves are broader, often shorter, less acute, and less sharply serrated; while the inflorescence is essentially capitulate, never an elongated spike. The flexuous branches, a character which Sole emphasises, certainly occur in this variety to which, however, they are not restricted. Hirsute forms, unless Linnaeus' named specimen is such, have not been recorded, but would be expected.

Owing to past confusion with Fraser's var. *subcordata* (see below) it is difficult to be accurate over distribution. But var. *vulgaris* is apparently rarer than var. *piperita*, though there are occurrences here and there throughout the country. I possess specimens from v.cs. 1, 3, 17, 28 and 64.

I have also a specimen of a hairy intermediate between this variety and var. *piperita*, having the rather broad, shallowly serrate leaves (lower cuneate, upper rounded) of the former, and the elongated spike of the latter. It was gathered by Francis Druce at Halton Holgate, Lincs.

The type, and probably only authentic, specimens of Briquet's var. *Druceana* are at Oxford. The original description is slightly amended in Fraser's Monograph (1927, *Rep. Bot. Soc. & E.C.*, 8, 225), but having compared these specimens side by side with var. *vulgaris* I have been unable to find sufficient evidence to warrant varietal differentiation. It therefore seems best to relegate Briquet's variety to synonymy.

3. var. *SYLVESTRIS* Sole.

Mentha piperita sylvestris Sole, 1798, *Menth. Brit.*, 53.

Mentha hircina Hull, 1799, *Brit. Fl.*, 1, 127.

Mentha spicis oblongis latioribus, interruptis, foliis latis ovatis acutis, petiolatis serratis subhirsutis, nervis albis, caude erecto rigido subramoso, ex albido rubescente piperis odore gravi, staminibus corolla brevioribus—Sole.

Stem reddish, thinly covered with deflexed hairs. *Leaves* markedly broadly ovate-lanceolate, up to 8 × 4 cms., truncate or rounded to a small wedge at the base, sometimes nearly subcordate, glabrous above and very thinly hairy beneath; serratures irregular in number and spacing, up to 12, sharp but shallow; nerves of the undersurface whitish. *Inflorescence* a strong, elongated, thick spike, the lower whorls becoming separated. *Calyx* with a few hairs on the tube, the teeth very hairy. *Stamens* included.

The above is taken from the specimen among Sole's mints at the Linnean Society, which bears the name "*latifolia sive sylvestris*." Evidently a strong-growing mint, it differs from var. *piperita* in the much broader leaves, and from var. *vulgaris* in general larger size, elongated spike and in the truncate tendency of the leaf bases; and from both in the very hairy calyx teeth. Sole's illustration gives the appearance of a very hairy mint, but this is misleading. Further specimens in Smith's herbarium show leaves with a more attenuate leaf-base, but no peppermints have an absolute monopoly in any leaf-base character. Unfortunately it is no longer possible to comment on the "goatish" smell which Sole alleges—by no means a normal character in a peppermint.

It must be noted in passing that the *Mentha hircina* described by Fraser (1927, *Rep. Bot. Soc. & E.C.*, 8, 221) is not Hull's plant, but a hairy form of the next variety.

4. var. *SUBCORDATA* Fraser, 1927, *Rep. Bot. Soc. & E.C.*, 8, 226.

In his description Fraser stresses the lower leaves as being ovate to ovate-oblong, and subcordate, and the upper ones rounded or truncate; and the inflorescence as being a shortly oblong, very obtuse spike.

There are four specimens in the type folder at Kew among Fraser's mints. What may be the original specimen seems to be a starved plant, the remaining three being derived from the cultivation of a root from the original locality. The starved specimen has long, rather narrow leaves with subcordate bases, and saw-like edges due to the many, sharp serratures; and the inflorescence on the main axis is a starved spike with lateral branches terminating in short, ± capitate heads. Generally speaking, this specimen has the appearance of a starved form of var. *piperita* but with the added character that the rounded leaf bases, which sometimes occur in this variety, are developed a stage further to become subcordate. The three cultivated specimens are remarkably

near to var. *vulgaris* in leaf shape, though the subcordate bases persist to a considerable extent, varying to cuneate; and the inflorescences are shortly spicate. In these three the saw-like edges are less apparent. There are several more specimens, not in the type folder but again from cultivation from the type locality, all of which show a subcordate base to the lower leaves, and the saw-like edges; with inflorescences either clearly spicate or short and almost capitate.

It is a most odd circumstance that among Fraser's mints there are no specimens left by him named as var. *vulgaris*, although some are certainly this variety, and one is driven to the conclusion that having named his new variety he found it difficult to separate it from var. *vulgaris*, which was then relegated to the background. Indeed, separation from both var. *vulgaris* and var. *piperita* often difficult, especially in view of intermediates. Further, some of Fraser's var. *subcordata* is undoubtedly var. *piperita*. It is very perplexing, but Fraser evidently used his new variety very widely.

The best characters of this variety are the *subcordate bases of the lower leaves* (somewhat intermediate between var. *piperita* and var. *vulgaris* in shape), and the *many small serratures*. It is clear that the inflorescence is somewhat intermediate between the two.

As with var. *vulgaris* it is hard to be accurate over distribution. Fraser's variety is less common than var. *piperita*, but would seem to be well distributed in Britain.

SUMMARY.

Peppermint varieties, undoubtedly closely allied, are distinguished by two criteria, (1) form of inflorescence, (2) leaf shape. By way of a summary I give below an analytical key to the varieties described above. Where the leaf shape is given, attention should primarily be paid to the lower or more mature leaves. But the characters given in the key should only be regarded as indicative of a variety in the first instance, and the descriptions given above should afterwards be consulted.

1	{	Inflorescence on main axis spicate	2
	{	Inflorescence on main axis capitate	5
2	{	Leaves long and narrow	3
	{	Leaves broadly ovate-lanceolate	var. <i>sylvestris</i>
3	{	Leaves attenuate or rounded at the base	4
	{	Leaves, at least the lower, subcordate at the base	var. <i>subcordata</i>
4	{	Whole plant subglabrous	var. <i>piperita</i>
	{	Whole plant hirsute	f. <i>hirsuta</i>
5	{	Leaves cuneate or rounded at the base	var. <i>vulgaris</i>
	{	Leaves, at least the lower, subcordate at the base	var. <i>subcordata</i>