

A RED-FLOWERED *CALTHA* FROM TIBET

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Caltha rubriflora Burtt & Lauener, **species nova** proxima *C. scaposae* Hook f. & Thoms. a qua inflorescentiis unifloris, sepalis roseis, foliis reniformibus, carpellis sessilibus differt. A *C. palustri* L. habitu nano et (etiam a subsp. *minore* (Mill.) Clapham) staminibus et carpellis paucioribus, foliis profundius crenato-lobulatis differt.

Planta parva ad 6 cm alta. *Radix* fibrosa. *Folia* plerumque radicalia (interdum 1-2 caulina redacta), breviter petiolata; petioli ad 2.5 cm longi basi in vaginam membranaceam apice triangulari-acuminato libero 4 mm longo antepetiolari expansi; lamina orbicularis, reniformis, basi profunde cordata, toto margine crenato-lobulato, 1.2-1.7 cm lata. *Flores* solitarii, parvi. *Sepala* 5, oblongo-obovata, ad 1.2 cm longa, 4-6 mm lata, roseo-magentina. *Stamina* c. 11, coccinea, 5 mm longa interiora paulo breviora, filamentis planis, antheris 1.5-2 mm longis. *Carpella* 3-4, sessilia, 5 mm longa stylo 1 mm longo apice stigmatoso incluso, ovulis 8-10.

TIBET: Kongbo, Doshong La, 29° 29' N, 94° 59' E, 4115 m, on mossy slopes beside melting snow, perianth deep magenta pink, filaments crimson, anthers dark crimson, carpels green at base, crimson at apex, stigmas pale green, 14 vii 1938, Ludlow, Sherriff & Taylor 5263 (holo. BM, iso. E).

This remarkable new species of *Caltha* is distinct from all other Asiatic species by virtue of its red flowers; it finds its nearest affinity in the Himalayan and W Chinese *C. scaposa* Hook. f. & Thoms. and the widespread *C. palustris* L.

C. scaposa shows considerable variability in the size of the individual plant and flowers and in the number of flowers and leaves to each plant. The type specimen of *C. rubriflora* has only one flower and 2 or 3 leaves to each plant, but further collections might show it to have the same degree of variability as *C. scaposa*. Nevertheless, the two species can be separated readily apart from flower colour by the shape of the leaves, ovate in *C. scaposa*, reniform in *C. rubriflora*.

Although the mature carpels of *C. scaposa* are obviously stipitate, this is not so apparent in the flower; they are, however, clearly narrowed to the base: in *C. rubriflora* they are rounded. The difference in the number of carpels, moreover, 3-4 in *C. rubriflora*, 8-30 in *C. scaposa* appears to be a reliable character.

C. rubriflora also has a close relationship with *C. palustris*, particularly in the fact that both species have sessile carpels. *C. palustris* has more numerous (5-20) carpels and also more numerous (40-80) stamens and is usually a much taller plant with larger leaves and flowers with a large leaf subtending the cyme. *C. rubriflora* can be compared in size with *C. palustris* subsp. *minor* (Mill.) Clapham, a Scottish montane form which is smaller than subsp. *palustris* and often only one-flowered. These dwarf one-flowered forms of *C. palustris* do not seem to occur in the Sino-Himalayan region although the species goes up to 4700 m.

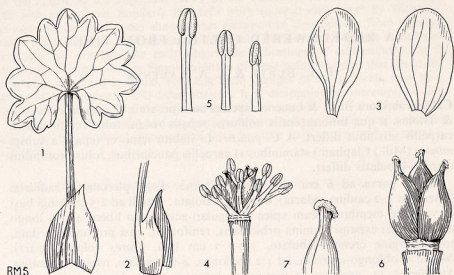


FIG. 1-7. *Caltha rubriflora* Burtt & Lauener.

1, leaf, $\times 2$; 2, sheath, lateral view, $\times 2$; 3, sepals, $\times 2$; 4, flower with sepals removed, $\times 2$; 5, stamens, $\times 4$; 6, gynoecium, $\times 4$; 7, stigma, $\times 9$.

Another distinctive feature of *C. rubriflora* seems to be the sharply triangular free apex of the leaf-sheath (Figs. 1 and 2). A more detailed survey of this character in the genus as a whole should, however, be made before too much reliance is placed on it.

It is interesting and important to note that on his very last journey in 1930, Farrer collected a red-flowered form of *C. palustris* (F. 1764) at the Moku-ji Pass near the Burma-Yunnan border, some 350 miles south-east of Doshong La, the type locality of *C. rubriflora*. His field note states that "the flowers are of a bright rose purple", and in a letter to E. H. M. Cox (see Cox, Farrer's Last Journey, 199: 1926) they are described as "of so lovely a magenta-rose colour".

Apart from this pink form, the normal golden-yellow colour of *C. palustris* varies to greenish on the outside of the sepals in a number of Sino-Himalayan specimens, while in the Western Himalayas the flowers are commonly white (var. *alba* Hook. f. & Thoms.).

Another record of a *Caltha* with red in the flowers is the specimen of *C. scaposa* collected by Ludlow & Sherriff (L. & S. 8793) in the hills south of Lhasa at 4725 m. Their field note states "flowers bright yellow with a reddish tinge on the under surface of some of the perianth segments".

Despite the common factor of reddish flowers there is no doubt that the Farrer and the Ludlow & Sherriff specimens have been correctly named as *C. palustris* and *C. scaposa* respectively.