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Dolerus of the high Swiss alps

(Hymenoptera Tenthredinidae)

by

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Dr. J. Aubert has found the males of another high-alpine species related to *Dolerus nitens* in Switzerland. The females of two normally obligatorily parthenogenetic species, related to *D. nitens*, are already known to me as common in the high alps above the tree line, in addition to the abundant *D. aeneus* which has both sexes in normal proportions; and now a few specimens of the males of two species are also known. The question is whether these two scarce forms of male are the occasional males of the two normally obligatorily parthenogenetic species.

On the assumption that they are, it would appear that the new type of male found by Dr. Aubert is more likely to belong to the females that I have hitherto assigned to *D. alpinus*, as both these more resemble *D. aeneus* than does the male I have called *D. alpinus*. From this it would seem that the females that I have hitherto called an obligatory parthenogenetic high-alpine race of *D. nitens* are in fact the true females of the *D. alpinus* males. The high alpine *Dolerus* now known in Switzerland are as follows: *laevigatus* HELLÉN 1955 (= *nivalis* BENSON 1963 syn. n.), *aeneus* HARTIG, *alpinus* BENSON, & *frigidus* BENSON sp. n.

***Dolerus laevigatus* HELLÉN 1955 (= *nivalis* BENSON)**

This species is known only from 1 ♂ and 3 ♀ from Ferpècle and Saas-Fee in Valais, Switzerland, and from Austria.

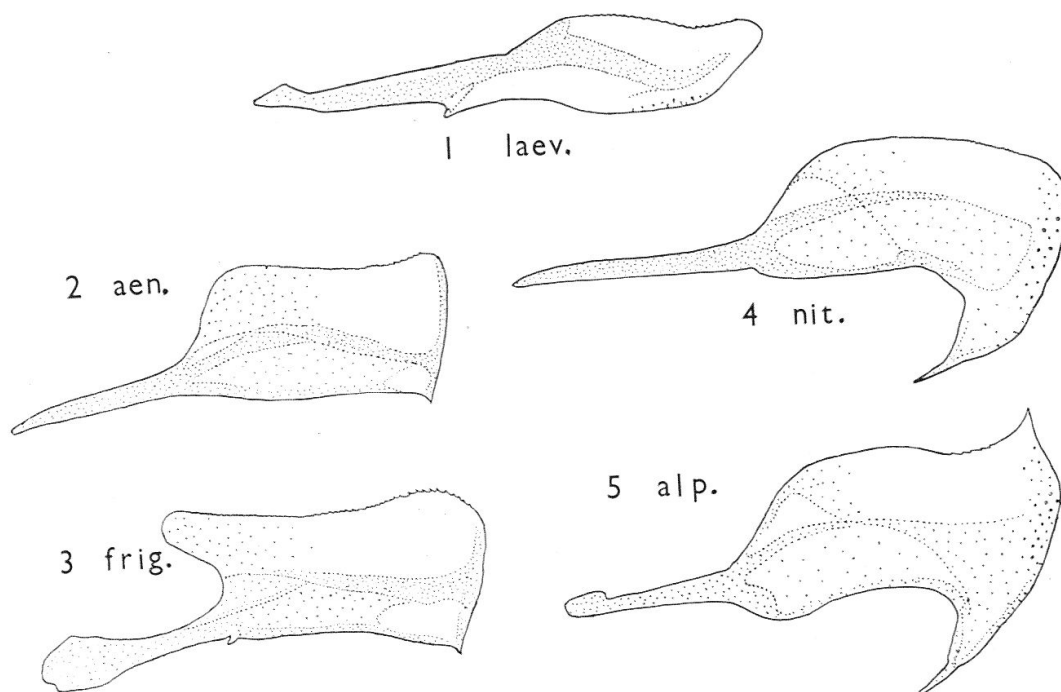
It is a melanic species of the *red group* as defined by BENSON 1952 and so readily distinguished by genitalia characters from the other high-alpine species which belongs to the *black group*, by the saw with its complicated lateral teeth (BENSON 1963 fig. 1) and by the penis valve (fig. 1).

***Dolerus frigidus* sp. n.**

♂ colour black with silvery pubescence and hyaline wings. Length 8.5–10 mm.

Head contracted slightly behind the eyes, with temporal furrows clearly marked; densely punctured all over, very finely on the face and genae, coarsely on the temples, with few interspaces as large as punctures; clypeus medially emarginate to about one-third its total length. Antenna about as long as costa + stigma of forewing; the 3 basal flagellar segments subequal, 8th segment about X 4 as long as broad.

Thorax: front lobes of mesonotum together broader than long and punctured all over, more densely and coarsely laterally, with finely shining interspaces medially; lateral lobes medially shining with obsolescent punctures only; scutellum shining between coarse regular punctures, and post-tergite without punctures; mesopleura densely punctate all over upper half, shining with obsolete punctures below. Legs normal; claws with minute inner tooth.



Figures 1-5. Penis-valves of *Dolerus* species. — 1. *D. laevigatus*. — 2. *D. aeneus*. — 3. *D. frigidus*. — 4. *D. nitens*. — 5. *D. alpinus*

Abdomen with surface sculpture obsolete on basal tergite and poorly developed on following segment. Penis valve as in fig. 3.

Pubescence dense over face and temples, and whole of thorax, up to as long as the apical breadth of the front tibia; on abdomen sparse medially on tergites 1-3 dense on rest of tergites except for a medial bare line.

Switzerland, Valais; Col de Bretolet s/Champéry (Val d'Illeiez) 1923 m. 6 ♂ 16-31.V.1964 (including holotype 30-31.V.1964) (J. AUBERT) (holotype and 3 paratypes in Musée Zoologique, Lausanne;

2 paratypes in British Museum): Bettmeralp, 1800–2100 m, 1 ♂, 5–16.VI.1959 (J. E. & R. B. BENSON) (in British Museum).

The penis valve of this species, when dissected, distinguishes it readily from all other known species of *Dolerus*, but, if not fully exposed, is easily confused with that of *aeneus*. But in its broad general build the species is more similar to the *nitens* complex and not to *aeneus*, having for example the front mesonotal lobes together broader than long, whereas in *aeneus* they are scarcely as broad as long.

Key to *Dolerus nitens* complex ♀♀.

(Species of this complex would run to couplet 23 in Benson's 1952 key to British *Dolerus* females).

- 1 Some of the pubescence on middle of the mesonotum (in profile) as long as the malar space 2
- None of the pubescence on the middle of the mesonotum longer than diameter of a lateral ocellus 3
- 2 (1) Head with metallic reflections and brownish pubescence.
Abdomen with transverse sculpture on tergites well developed. (Pubescence on mesopleura longer than apical width of front basitarsus. Normally sexual species in Europe, but N. American form (*wanda* Ross 1935) is obligatorily parthenogenetic and may perhaps be specifically distinct). **nitens** KLUG
- Head without metallic reflections and with silvery pubescence, and abdomen with sculpture on tergites \pm obsolescent.
(Pubescence on mesopleura as in *nitens*. Obligatorily parthenogenetic with only occasional males. High alps of C. Europe (Switzerland).
? **frigidus** BENSON
- 3 (1) Pubescence on middle of mesonotum (in profile) only about half as long as diameter of lateral ocellus and on mesopleura all shorter than apical width of front tibia. Tergites with normal transverse surface sculpture.
Mesosternum with shallow punctures all over. Entirely obligatorily parthenogenetic. Britain and Finland **possilensis** CAMERON
- Pubescence on mesonotum in part as long as diameter of a lateral ocellus and on mesopleura in part longer than apical width of front tibia. Tergites with transverse microsculpture \pm obsolescent.
Mesosternum impunctate laterally. Obligatorily parthenogenetic with occasional males. High alps of C. Europe (France, Switzerland and Austria) ? **alpinus** BENSON

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