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Trichoptera fra ytre Sør-Trøndelag

JOHN O. SOLEM
Det Kgl. Norske Videnskabers Selskab, Museet, Trondheim
(Mottatt 14. mai, 1967)

Norges vårfluefauna er meget ufullstendig kjent, og det foreligger få faunistiske oppgaver over denne gruppen. Jeg vil i det følgende gi en liste over arter samlet i ytre strøk av Sør-Trøndelag (STy) (Strand 1943). Av det jeg kan se i litteraturen er det ikke publisert noen funn av vårfluer fra dette området før. R. Brekke (1946) oppgir i sin oversikt over vårfluer i Norge bare funn fra indre strøk (STi).

Materialet som denne listen bygger på tilhører Videnskabsselskabets Museum, Trondheim. Det er i overveiende grad samlet av R. Dahlby, Ørland, men noe er også samlet av M. Opheim, Oslo. I følge Brekke (1946, 1965) ble det funnet en ny art for Norge, *Notidobia ciliaris* L., og 11 nye for Sør-Trøndelag. Nye for S-T. er *Hydroptila femoralis* Eat., *Neureclipsis bimaculata* L., *Hydropsyche pellucidula* Curt., *Agrypnia varia* F., *Agrypnia pagetana* Curt., *Beraea pullata* Curt., *Athripsodes alboguttatus* Hag., *Mystacides longicornis* L., *Oecetis ochracea* Curt., *Limnophilus elegans* Curt. og *Limnophilus incisus* Curt.

Notidobia ciliaris L. er for første gang rapportert fra Norge, men den er kjent fra våre naboland Finnland og Sverige hvor den opptrer som en sørlig art. I Finnland er den funnet nordover mot polarsirkelen (Nybom 1960), og i Sverige er den funnet i hele området fra Skåne og nordover til og med den sørligste delen av Dalarne. (Forsslund et Tjeder 1942, Tjeder 1938). I begge land regnes den for en vanlig art i de nevnte områder (Nybom 1960, Tjeder 1938).

Et individ, en hunn av *N. ciliaris* L. ble funnet i dette materialet fra STy. Den er ikke sammenlignet med annet bestemt materiale av arten, men er bestemt etter Mosely (1939), Esben-Petersen (1916) og Ulmer (1909). Den er også kontrollert etter McLachlan (1874–80).

Forkortelser som er brukt: RB. – Reidar Brekke, RD. – Rolf Dahlby, MO. – Magne Opheim og JS. – John O. Solem. Alle arter er bestemt av meg unntatt der det står anført noe annet.

RHYACOPHILIDAE

Rhyacophila nubila Zett., Ørland, Reitbekken 4/7., Leg. RD. Det. RB., Bjugn, Reitbekken 16/7—64, Leg. RD., Ørland, Reitbekken 29/8—65, Leg. RD.
Diploglossa nylanderi McLach., Åfjord, Stordalen 29/6—50, Leg. MO.
Agapetus comatus Pict., Åfjord, Stordalen 25/6–50, Leg. MO., Åfjord, Stordalselv 28/6–50 og 29/6–50, Leg. MO.

HYDROPTILIDAE

Hydroptila femoralis Eat., Åfjord, Stordalselv 28/6–50, 29/6–50 og 30/6–50, Leg. MO.
Oxyethira costalis Curt., Bjugn, Dragvatnet 24/7–64, Leg. RD.

PHILOPOTAMIDAE

Philopotamus montanus Don., Ørland, Rusaseter 7/7–63, Leg. RD., Bjugn, Reitebekken 26/7–64, Leg. JS., Ørland, Karlsenget, bekk 5/8–64, Leg. RD.

POLYCENTROPIDAE

Neureclipsis bimaculata L., STy, Leg. RD., Det. RB.
Plectrocnemia conspersa Curt., Bjugn, Reitbekken 4/7–62, Leg. RD., Det. RB., Ørland, flystasjon 20/7–64, Leg. RD., Bjugn, Reitbekken 26/7–64, Leg. JS., Bjugn, Reitbekken 11/7–65, Leg. RD., Bjugn, Dragvatnet 29/7–65, Leg. RD.
Polycentropus flavomaculatus Pict., Bjugn, Dragvatnet 18/8–62, Leg. RD., Det. RB., Jøssund, Jøvatnet 7/7–64, Leg. RD.
Holocentropus picicornis Steph., Ørland, Hoøybakken 4/7–64, Leg. RD.
Cyrnus trimaculatus Curt., Bjugn, Barsetvatnet 6/8–62, Leg. RD., Det RB., Bjugn, Dragvatnet 24/7–64, Leg. RD.
Cyrnus flavidus McLach., Stjørna, Søtvikvatnet 21/7–64, Leg. RD., Ørland, Kalvåtjern 5/8–64, Leg. RD.

PSYCHOMYIDAE

Tinodes waeneri L., Bjugn, Dragvatnet 24/7–64 og 29–6/65, Leg. RD.

HYDROPSYCHIDAE

Hydropsyche pellucidula Curt., STy, Leg. RD., Det. RB.

PHRYGANEIDAE

Agrypnia varia F., Bjugn, Dragvatnet 30/6–65, Leg. RD.
Agrypnia obsoleta Hag., Ørland, Rusasetervatnet 7/8–58, Leg. RD., Ørland, Rusasetervatnet 9/7–62, Leg. RD., Det. RB., Ørland, Kalvåtjern 5/8–64, Leg. RD.
Agrypnia pagetana Curt., STy, Leg. RD., Det. RB.

MOLANNIDAE

Molanna angustata Curt., Ørland, Rusasetervatnet 7/8–58, Leg. RD., Ørland, Rønne 13/7–62, Leg. RD.
Molannodes tincta Zett., Bjugn, Brekvatnet 22/7–62, Leg. RD., Bjugn, Dragvatnet 24/7–64, Leg. RD.

BERAEIDAE

Beraea pullata Curt., Åfjord, Nord-Eidem 2/7–50, Leg. MO., Ørland, Rønne 29/6–58, Leg. RD.

SERICOSTOMATIDAE

Silo pallipes F., Ørland, Rusaseter 21/6–64, Leg. RD.
Lepidostoma hirtum F., Fillan Ryvatn 24/6–60, Leg, RD., Det. RB.
Sericostoma personatum Spence., STy, Leg. RD., Det. RB., Ørland, Rusaseter 21/7–64, Leg. RD.
Notidobia ciliaris L., Ørland, Rusasetervatnet 7/7–65, Leg. RD.

LEPTOCERIDAE

Athripsodes alboguttatus Hag., Ørland, Rusasetervatnet, Leg. RD.
Athripsodes aterrimus Steph., Bjugn, Dragvatnet, Leg. RD., Bjugn, Brekvatnet 22/7 –62, Leg. RD.
Athripsodes cinereus Curt., Ørland, Rusasetervatnet 11/7–62, Leg. RD., Det. RB.
Mystacides azurea L., Bjugn, Dragvatnet, Leg. RD., Bjugn, Dragvatnet 18/8–62, Leg. RD., Det. RB.
Mystacides longicornis L., Bjugn, Dragvatnet 14/8., Leg. RD., Det. RB., Ørland, Rusasetervatnet 7/7–60, Leg. RD., Det. RB.
Oecetis ochracea Curt., Bjugn, Dragvatnet 14/8., Leg. RD., Det. RB., Ørland. Rusasetervatnet 7/7–60, Leg. RD., Det. RB.

LIMNOPHILIDAE

Limnophilus elegans Curt., Ørland, Rusasetervatnet 20/6–60, Leg. RD., Det. RB·
Limnophilus extricatus Mc.Lach., Bjugn, Dragvatnet 20/6–60, Leg. RD.
Limnophilus incisus Curt., Bjugn, Brekvatnet 22/7–62, Leg. RD.
Limnophilus griseus L., Ørland, Rønne 9/8–64 og 25/8–64, Leg. RD.
Limnophilus pantodapus McLach., STy, Leg. RD., Det. RB.
Limnophilus rhombicus L., Bjugn, Dragvatnet 24/7–64, Leg. RD.
Limnophilus stigma Curt., Bjugn Dragvatnet 24/7–64, Leg. RD.
Halesus radiatus Curt., Ørland, Reitbekken 29/8–65, Leg. RD., Ørland, Rønne 20/9–65, Leg. RD.

SUMMARY

A list of Trichoptera collected in Sør-Trøndelag county, Norway, is given, and *Notidobia ciliaris* L. is reported new to Norway. The distribution of *N. ciliaris* in Finland and Sweden is mentioned.

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Wesmaelius balticus Tjeder, 1931 (Neuroptera, Planipennia) New to Norway

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(Received July 6, 1967)

During the examination of approximately 500 specimens of Neuroptera belonging to the collection of the late Mr. F. Jensen, one of the specimens was identified as *Wesmaelius balticus* TJEDER, 1931, a species not earlier recorded in Norway. The locality was Reve, Jæren, Rogaland, the date 29.5.1936, no other information is given. The specimen, a female, was hitherto undetermined, but nearly all the other specimens in the collection have already been recorded by Tjeder (1945). The collection is now deposited in Zoological Museum, University of Oslo.

W. balticus was described by Tjeder (1931) from Gotska Sandøen in the Baltic. With one exception (Killington 1936/1937; Aspöck & Aspöck 1964) all records of this species are from coastal sanddunes. This kind of habitat is present at Reve, but is scarce in most places of Norway. Fig. 1 presents the hitherto known distribution, see also map by Ohm (1965).

ACKNOWLEDGEMENTS

Dr. B. Tjeder has kindly verified my identification and Fig. 1 has also been drawn by him.

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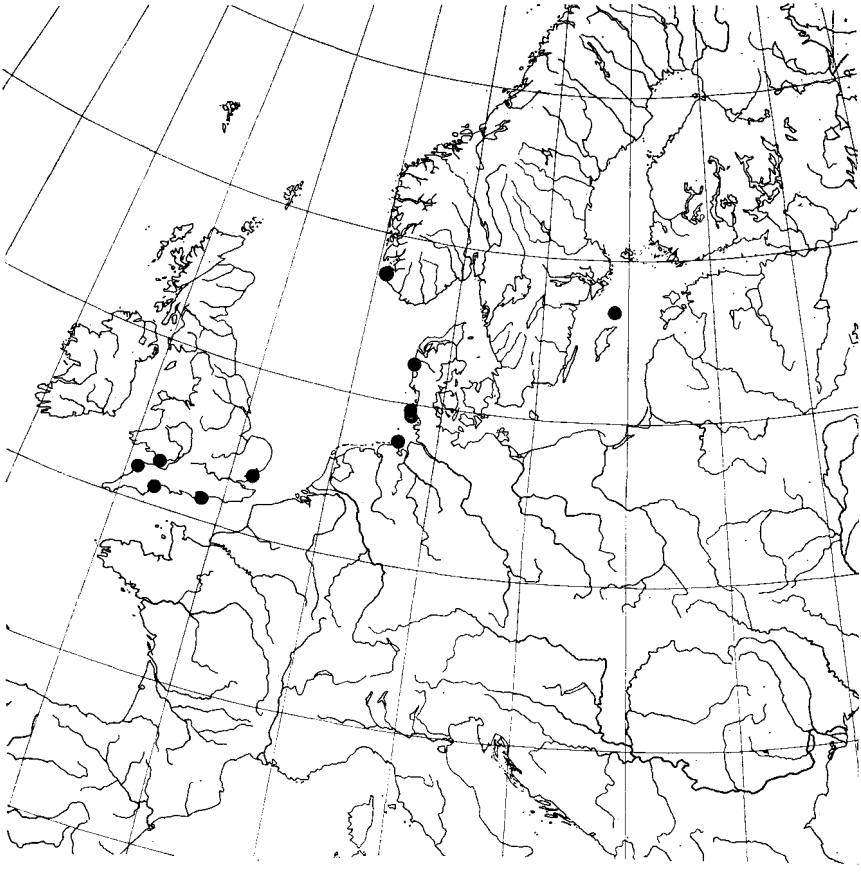

Fig. 1. The records of *Wesmaelius balticus* showing the present distribution of the species.

Coleoptera in Southern Nordland

COLIN JOHNSON
Manchester Museum, England
(Received August 14, 1967)

In the summer of 1965 the writer was privileged to act as an assistant leader (primarily in the capacity of Entomologist) on the British Schools Exploring Society's expedition to North Norway, and the present paper contains an account of all the species of Coleoptera found during the course of the expedition.

Base Camp was established on 2 August not far from the south-eastern corner of the lake ned. Navervatnet, some five kilometres from Glomen, in the parish of Meløy, south-west Nordland (Nsy). Until we left the area on 7 September, members of the natural history fire studied various subjects of zoological and botanical interest, working into the neighbouring parishes of Gildeskål and Beiarn. The collecting of Coleoptera was supervised by the writer, who was assisted particularly by Messrs. J. Belk, R. W. Davies, H. Mead, C. Moorcraft, C. Walker and T. Wilson, whilst other members of the expedition (which totalled sixty-six boys and ten other leaders) contributed occasional specimens.

LOCALITIES

A sketchmap (not to scale) of the general area covered by the expedition as a whole is given below (Fig. 1). The localities where collecting was carried out (dotted on the map) fall naturally into two distinct zones — the *Regio subarctica*, which includes the densely forested valleys of Ruffudalen and Beiardalen, the wooded north side of Fykanvatnet and the vicinity of the Glomen power station at the head of Glåmfjorden; and the *Regio arctica*, which comprises the higher exposed land above the tree line. This latter includes Base Camp, the numerous small lakes ned. Navervatnet, Fiskvatnet, Seglvatnet, Isvatnet and Namnlausvatnet, as well as the large glacial lake Storglomvatnet. It also includes the valleys Gråtåga, Glåm-

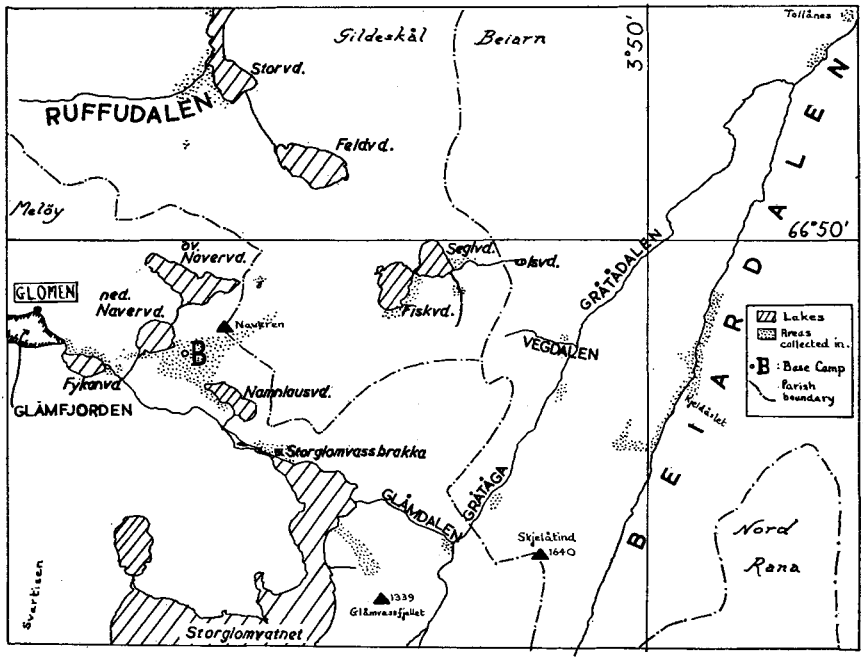

Fig. 1. The area covered by the expedition.

dalen and Vegdalen, and of course the mountains Naveren (775 m) and Glåmvassfjellet (1339 m).

The wooded areas consist primarily of birch together with an assortment of other trees such as sallow, hazel, alder, mountain ash, and a few pines. In the lower parts of Beiardalen however, pines become the dominant type, particularly north of the valley's confluence with the Gråtådalen, although there are moderate stands a little higher up, in the vicinity of Kjeldåslet for example. In the higher *Regio arctica* the ground (where vegetation can get a hold) is mainly covered with a dense carpet of various mosses, lichens and heaths, as well as (in the more favourable situations) creeping plants like the reticulate willow and shrubby birch. A notable feature of this higher ground of course is the lakes, and although the main rock component, at any rate in the vicinity of Base Camp, is a type of limestone, there is no shortage of surface water, particularly in the form of temporary snow-melt pools and streams resulting from the melting snow. The edges of the smaller lakes were usually profitable for collecting, but the glacial Storglåmvatnet, bordered on nearly half its length by the northern tip of the Svartisen Glacier, was very barren. As there was a high strand line visible at some height above the present level of this lake, however, it was presumed that

an unstable water level was the cause. At the north-west tip of the lake, near to the 'brakker', a pool of stagnant water produced a number of waterbeetles which had not been met with elsewhere.

Mention must be made of one particular habitat which is worthy of note. This consisted of a large quantity of cut grass, with moss mixed in with it, which, after having originated from the lawn in front of the Glomen power-station, had been left to decompose on the quayside. This proved extremely productive and was visited continuously over a period of three days. In the species-list of the present paper, the locality is given merely as Glomen, and the habitat as 'grass heap'.

One or two records of species found at Ørnes, where we embarked from the coastal steamer, are also included in the list, although it was not possible to do any serious collecting in that vicinity owing to lack of time.

LIST OF SPECIES

South-west Nordland is very poorly known compared with most other vice-provinces of the north, and so it is only to be expected that many species found on the expedition will not have been recorded previously from the vice-province. In contrast, south-east Nordland has been well worked by other coleopterists in the past, so that it is not surprising that the number of species new to that vice-province is very small. The vice-provinces have been abbreviated to the usual symbols, Nsy for south-west Nordland, Nsi for south-east Nordland, and an asterisk (*) before these symbols indicates that the species has not been previously recorded from that particular vice-province. To save space it has been necessary to make further abbreviations in the list. These are a) in lake names where the old abbreviation has been used – eg. Fykanvd. for Fykanvatnet; b) dates of capture – eg. 3/viii for August 3rd; c) ex(x). preceded by a numeral for the number of examples of a species found (only used in the case of small numbers).

CARABIDAE

Carabus glabratus Payk. Nsy: Ruffudalen 11/viii, remains by lake; Base Camp 16/viii and various dates, on paths, heaths and under stones, frequent; Fykanvd. 16/viii on path, 1 ex. Nsi: Beiardalen 27/viii in birch forest, 1 ex.

C. problematicus Herbst. Nsy: near Base Camp 21/viii on path, 1 ex.

C. violaceus L. Nsi: Beiardalen 27/viii in birch forest, 1 ex.

Cychrus caraboides L. Nsy: Fykanvd. 16/viii under stones by stream, 2 exx. Nsi: Beiardalen 27/viii in rotten birch log, 1 ex.

Nebria rufescens Str. (*gyllenhali* Schoen.). Nsy: Base Camp 2/viii and various dates under stones, at edge of snow, common; Fiskvd. 5/viii at edge of lake, common; Fykanvd. 16/viii at edge of lake and streams, common; Glåmvassfjellet 18/viii at edge of snow, common. Nsi: Beiardalen 24/viii amongst shingle at edge of river, common.

N. nivalis Payk. Nsy: Glåmvassfjellet 18/viii at edge of snow, 2 exx.

Notiophilus aquaticus L. Nsy: Base Camp 3/viii and various dates on paths and heats, frequent. Nsi: Gråtåga 22/viii on heath, not uncommon.

N. biguttatus Nsy: Glomen 2/ix in grass heap, common. Nsi: Beiardalen 27/viii in birch forest, 1 ex.

Elaphrus riparius L. Nsy: Fiskvd. 6/viii at edge of lake, 2 exx.; small lake 1 km east of øv. Navervd. 9/viii on wet ground by stream, 1 ex.

Clivina fossor L. Nsy: Base Camp 21/viii amongst damp earth, 1 ex.

Miscodera arctica Payk. Nsy: Seglvd. 4/viii under stone on heath, 1 ex.; Base Camp 16/viii and various dates, frequent under stones on heath. Nsi: Gråtåga 22/viii beneath stones on heath, 3 exx.

Bembidion bipunctatum L. Nsy: Ruffudalen 10/viii on shingle bank of river, 1 ex.; Base Camp and Naveren 21/viii and various dates, near water courses formed by melting snow, common.

B. prasinum Dufts. *Nsy: Ruffudalen 9/viii amongst shingle bank of river, 1 ex.

B. virens Gyll. Nsy: Fykanvd. 16/viii amongst shingle at edge of lake, several exx.

B. hasti Sahlb. *Nsy: Ruffudalen 10/viii amongst shingle and sand banks of river, not uncommon; Fykanvd. 16/viii amongst shingle at edge of lake, not uncommon. Nsi: Beiardalen 24/viii amongst shingle and sand bank of river, not uncommon.

B. fellmani Mannerh. *Nsy: Base Camp and Naveren 3/viii and various dates, mainly about snow-melt streams, common; Fykanvd. 16/viii amongst shingle at edge of lake and amongst stones at stream side, not uncommon; Glåmvassfjellet 18/viii at edge of melting snow, numerous.

B. petrosum siebkei Müll. Nsi: Beiardalen 24/viii amongst shingle and sand bank of river, several exx.

B. femoratum Sturm. *Nsy: Ruffudalen 10/viii on sand at edge of river, 1 ex. *Nsi. Beiardalen 24/viii amongst sand bank of river, numerous.

Trechus obtusus Erichs. *Nsy: Fykanvd. 16/viii in moss, 1 ex.

Patrobus septentrionis Dej. Nsy: Base Camp 3/viii and various dates, in a variety of situations, common; Seglvd. 4/viii on heath, 5 exx.; Fiskvd. 5/viii amongst rejectamenta by lake, 4 exx.; Fykanvd. 16/viii beneath stones and river shingle, numerous; Glåmvassfjellet 18/viii under stones near snow, numerous. Nsi: Gråtåga 22/viii on heath, several exx.

P. assimilis Chaud. Nsy: Base Camp 3/viii and various dates, fairly common; Fykanvd. 16/viii under stones by stream, 2 exx. Nsi: Beiardalen 24/viii under stone by road, 1 ex.

Bradycellus collaris Payk. Nsy: near Base Camp 2/viii under stone on heath, 1 ex. Nsi: Beiardalen 24/viii under pine log, 1 ex.

Trichocellus cognatus Gyll. Nsi: Beiardalen 24/viii at roots of heather, 1 ex., 25/viii amongst rotting hay, 3 exx.

Amara quenselii Schoen. Nsy: Base Camp 14/viii and various dates, on sandy tracks and often in tents, frequent; Glåmvassfjellet 18/viii, beneath stones amongst heath, 3 exx. Nsi: Gråtåga 22/viii, on sandy heath, 5 exx.

A. brunnea Gyll. Nsy: Base Camp, 7/viii, 14/viii, 5/ix, single specimens on heath and along sandy tracks.

A. praetermissa Sahlb. Nsy: Base Camp, 7/viii, 14/viii single examples on sandy tracks.

A. apricaria Payk. Nsi: Beiardalen 24/viii in rotten grass, 1 ex.

A. alpina Payk. *Nsy: Base Camp 3/viii to 14/viii, on *Empetrum* heath, frequent; Seglvd. 4/viii, under stone on *Empetrum* heath, 1 ex.

A. torrida Ill. Nsy: Glåmvassfjellet, 18/viii, under stone near snow, 1 ex. Nsi: Beiardalen 24/viii by sweeping rough pasture, 1 ex.

Pterostichis adstrictus Esch. Nsi: Beiardalen 24/viii, beneath birch log, 2 exx.

P. oblongopunctatus F. Nsi: Beiardalen 24/viii and 27/viii in rotten birch logs, 1 and 2 exx. respectively.

P. strenuus Panz. Nsy: Ruffudalen 11/viii in damp moss, not uncommon. Nsi: Beiardalen 25/viii on pathway, 1 ex.

Calathus melanocephalus L. Nsy: Base Camp 3/viii and many dates, beneath stones

in most situations, and at rotten fish bait, fairly common. Nsi: Beiardalen 24/viii at base of rotten stumps, not uncommon.

C. micropterus Dufts. Nsy: Ruffudalen, 11/viii in rotten birch logs, not uncommon. Nsi: Beiardalen 24/viii in rotten birch stump, 1 ex.

Agonum fuliginosum Panz. Nsi: Beiardalen 24/viii in damp moss and sphagnum, fairly common.

HALIPLIDAE

Haliplus lapponum Thoms.* Nsy: near Storglomvassbrakka 19/viii in stagnant pool, 1 ex.

DYTISCIDAE

Deronectes multilineatus Falkenstr.: Nsynear Storglomvassbrakka, 19/viii in stagnant pool, fairly common.

D. alpinus Payk. *Nsy: Fiskvd. 6/viii in lake, common.

Hydroporus palustris L. Nsy: near Storglomvassbrakka 19/viii in stagnant pool, common.

H. memnonius Nic. *Nsy: near Storglomvassbrakka 19/viii in stagnant pool, 1 ex.

Agabus solieri Aubé. Nsy: near Storglomvassbrakka 19/viii in stagnant pool common.

Colymbetes dolabratus Payk. Nsy: near Storglomvassbrakka 19/viii, in stagnant pool, fairly common.

HYDROPHILIDAE

Helophorus flavipes F. Nsy: Base Camp 3/viii in mossy pools, 3 exx.; Ruffudalen 11/viii in damp sphagnum, 1 ex.

H. glacialis Villa. Nsy: Base Camp 3/viii and many dates, characteristic of the temporary snow-melt pools, common.

Cercyon litoralis Gyll. Nsy: Glomen 4/ix in grass heap at edge of fjord, 1 ex.

C. melanocephalus L. Nsi: Beiardalen 25/viii in cow dung, 1 ex.

Megasternum obscurum Mars. (= *boletophagum* auctt.) Nsy: Ruffudalen 11/viii at grass roots, 1 ex.

SILPHIDAE

Thanatophilus lapponicus Hbst. Nsy: Base Camp 20–30/viii on rotten fish bait, not uncommon.

Choleva septentrionis Jeann. *Nsy: Glomen 3/ix in grass heap, 1 ex. perhaps from a nearby mouse or vole nest.

Catops alpinus Gyll. *Nsy: Glomen 3/ix in grass heap, 1 ex.

C. fuliginosus Erichs. *Nsy: Glomen 3/ix. in grass heap, 3 exx.

C. coracinus Kelln. Nsi: Beiardalen 27/viii by sweeping at edge of birch wood, 1 ex.

C. tristis Panz. *Nsy: Base Camp 30/viii on rotten fish bait, 4 exx.

LEIODIDAE

Hydnobius spinipes Gyll. *Nsy: Base Camp 16/viii, swept from *Salix* scrub, 1 ex.

Anisotoma humeralis F. Nsi: Beiardalen 25/viii under fungoid pine bark, 1 ex.

A. glabra Kugel. *Nsy: Ruffudalen 10/viii under fungoid birch bark, 1 ex. Nsi: Beiardalen 25/viii under fungoid pine bark, 2 exx.

A. castanea Hbst. Nsi: Beiardalen 28/viii under pine bark, 1 ex.

Agathidium arcticum Thoms. *Nsy: near Base Camp 6/viii on leaf of *Salix*, 1 ex.

A. rotundatum Gyll. Nsi: Beiardalen, 25 and 28/viii on *Reticularia* growing under bark of dead pines, common.

SCYDMAENIDAE

Stenichnus bicolor Denny. *Nsy: Ruffudalen 11/viii under bark of birch log, 1 ex. *Nsi: Beiardalen 28/viii, under bark of pine stump, 1 ex.

PTILIIDAE

Pteryx suturalis Heer. *Nsy: Ruffudalen 11/viii under birch bark, 2 exx.
Acrotrichis rugulosa Rossk. Nsi: Beiardalen 25/viii in rotten hay, 3 exx.

STAPHYLINIDAE

Olisthaerus megacephalus Zett. Nsi: Beiardalen 25/viii under pine bark, 3 exx.
Phloeocharis subtilissima Manner. Nsi: Beiardalen 28/viii, under pine bark, 1 ex.
Megarthrus depressus Payk. Nsy: Glomen 3/ix in grass heap, 1 ex. Nsi: Beiardalen 23 and 25/viii singly in cow dung and rotten hay respectively.
Proteinus brachypterus F. *Nsy: Glomen 3/ix, in grass heap, 2 exx.
Eusphalerum minutum F. Nsy: Ruffudalen 12/viii, by sweeping herbage by stream, 3 exx. Nsi: Beiardalen 24/viii and other dates, on flowers of *Filipendula*, common.
E. luteum Mars. (*ophthalmicum* Payk.) *Nsy: Fykanvd. 16/viii and 2/ix, on flowers of a small Umbelliferae, common.
Acrulia inflata Gyll. *Nsy: Ruffudalen 10/viii, on fungoid birch stump, 1 ex. Nsi: Beiardalen 25/viii on fungoid pine chippings, 3 exx.
Phyllodrepa ioptera Steph. *Nsy: Ruffudalen 11/viii under birch bark, 1 ex.; Fykanvd. 2–3/ix, under bark of dead hazel, common.
Omalium rivulare Payk. *Nsy: Glomen 4/ix, in grass heap, 1 ex.
O. septentrionis Thoms. *Nsy: Base Camp 30/viii on rotten fish bait, 4 exx.
O. caesum Grav. *Nsy: Base Camp 16/viii in decaying *Salix* leaves, 1 ex.
Omalium excavatum Steph. * Nsy: Glomen 3/ix in grass heap, 2 exx.
Phloeonomus lapponicus Zett. Nsi: Beiardalen 28/viii on piles of timber in small timber yard, 5 exx.
Xylodromus concinnus Mars. Nsi: Beiardalen 27/viii on wing, 1 ex.
Deliphrum tectum Payk. *Nsy: Base Camp 20/viii in reindeer dung, several exx., 30/viii on rotten fish bait, numerous. Nsi: Beiardalen 25/viii and other dates, in cow dung, fairly common.
Olophrum boreale Payk. Nsy: Fiskvd. 5&6/viii in refuse at edge of lake, 1 ex.; Namnlausvd. 17/viii under stone by edge of lake, 1 ex.
O. fuscum Grav. *Nsy: Glomen 3/ix. in grass heap, 4 exx.
Arpedium brachypterum Grav. *Nsy: Fiskvd. 5/viii in refuse at edge of lake 4 exx. Nsi: Beiardalen 28/viii, 3 dead exx. embedded in resin on pine stumps.
A. quadrum Grav. *Nsy: Base Camp 3/viii and other dates, not uncommon beneath stones. Nsi: Beiardalen 24/viii in sphagnum at edge of birch wood, 5 exx.
Acidota crenata F. *Nsy: Ruffudalen 11/viii, 1 dead ex. beneath loose birch bark.
Lesteva monticola Kies. *Nsy: Base Camp 14/viii, 21/viii and 7/ix. in damp moss by streams and under stones by water trickles, fairly common; Glåmvassfjellet 18/viii in sphagnum by stream, 2 exx; Fykanvd. 16/viii, streamside, 1 ex.
Geodromicus plagiatus F. *Nsy: Ruffudalen 9/viii on shingle bank of river, 1 ex.
G. longipes Manner. Nsy: Base Camp 13/viii and many dates, fairly common in damp moss by temporary pools and streams; Fiskvd. 5/viii in refuse at edge of lake, 4 exx.; Namnlausvd. 17/viii under stone by lake edge, 1 ex.; Glåmvassfjellet 18/viii in moss by stream, 2 exx.
Boreaphilus henningianus Sahlb. *Nsy: Glåmvassfjellet 18/viii in wet sphagnum, 1 ex.; Base Camp 21/viii amongst damp moss and lichens, 1 ex. Nsi: Beiardalen 24/viii in sphagnum at edge of birch forest, 1 ex.
Anthophagus alpinus F. *Nsy: Base Camp 3/viii in flowers of *Ranunculus*, common; Fiskvd. 5/viii, 1 ex. in tent.

A. caraboides L. Nsy: Ruffudalen 10/viii, on birch and other foliage, scarce. Fykanvd. 16/viii on foliage, 1 ex.

A. omalinus Zett. Nsy: Ruffudalen 10/viii on foliage of various trees, very common.

Aploderus caelatus Grav. *Nsy: Glomen 3/ix. in grass heap, not uncommon. *Nsi: Beiardalen 27/viii in farm dung heap, common.

Platystethus arenarius Geoff. Nsi: Beiardalen 27/viii in farm dung heap, not uncommon.

Bledius fuscipes Rye. *Nsy: Base Camp 3/viii and other dates, numerous persistent colonies along the damper parts of sandy tracks; near Storglomvassbrakka 19/viii, a large colony along a damp track.

Stenus clavicornis Scop. Nsi: Beiardalen 25/viii in rotten hay, 2 exx.

S. strandi Benick. *Nsy: Base Camp 21/viii amongst damp moss and lichens, 1 ex.

S. nanus Steph. (*declaratus* Erichs.). Nsy: Glomen 3/ix. in grass heap, 3 exx.

S. carbonarius Gyll. Nsy: Fykanvd. 4/ix. in sphagnum, 1 ex. Nsi: Beiardalen 24/viii in sphagnum in birch forest, 4 exx.

S. impressus Germ. Nsi: Beiardalen 24 & 26/viii, single exx. in damp moss at edge of birch forest.

S. coarcticollis Epp. Nsi: Beiardalen 25/viii in rotten hay, 1 ex.

S. palustris Erichs. Nsi: Beiardalen 25/viii in rotten hay, 1 ex.

Lathrobium brunnipes F. *Nsy: Ruffudalen 10/viii in moss and rotten stumps, fairly common; Glomen 3/ix. in grass heap, 1 ex.

L. longulum Grav. Nsy: Fykanvd. 4/ix. in sphagnum, 1 ex.

Xantholinus tricolor F. Nsi: Beiardalen 26 & 27/viii under bark of birch stumps, single exx.

X. linearis Oliv. Nsi: Beiardalen 26/viii in rotten hay, 1 ex.

Baptolinus pilicornis Payk. *Nsy: Ruffudalen 10 & 11/viii under bark of pine and birch stumps, scarce. Nsi: Beiardalen 24/viii and other dates, fairly common beneath bark, especially of pine.

Gyrohypnus angustus Steph. (*melanocephalus* Grav.). *Nsy: Base Camp 2/viii under fence post near snow. Nsi: Beiardalen 24/viii in moss in birch forest, 1 ex.

G. myrmecophilus Kies. Nsi: Beiardalen 24/viii in moss in birch forest, 1 ex.

Philonthus politus L. Nsi: Beiardalen 26/viii in rotten hay, 1 ex.

P. varians Payk. *Nsy: Glomen 2/ix. in grass heap, 1 ex. Nsi: Beiardalen 26 & 27/viii in rotten hay and dung heap respectively, single exx.

P. marginatus F. *Nsy: Glomen 3/ix. in grass heap, 2 exx.

P. sordidus Grav. Nsi: Beiardalen 26/viii in rotten hay, 1 ex.

Gabrius trossulus Nord. Nsi: Beiardalen 24/viii in grass heap, 1 ex.

Creophilus maxillosus L. Nsi: Beiardalen 26–7/viii in farm dung heap, fairly common.

Quedius mesomelinus Mars. Nsy: Glomen 3/ix. in grass heap, 2 exx.

Q. xanthopus Erichs. Nsi: Beiardalen 25/viii under pine bark, 1 ex.

Q. plagiatus Manner. (*laevigatus* Gyll.) Nsi: Beiardalen 28/viii under pine bark, 1 ex.

Q. molochinus Grav. Nsy: Ruffudalen 11/viii in damp moss, 1 ex. Nsi: Beiardalen 24/viii under stones, 2 exx.

Q. pseudoumbrinus Lohse (*umbrinus* auctt.). Nsy: Glomen 2/ix. in grass heap, 1 ex.

Q. limbatus Heer. *Nsy: Glomen 2 & 3/ix. in grass heap, fairly common.

Q. boops Grav. Nsy: Glomen 2 & 3/ix. in grass heap, common.

Q. boopoides Munst. *Nsy: Ruffudalen 11/viii in sphagnum, 1 ex.; Glåmvassfjellet 18/viii in moss by streams, 2 exx. Nsi: Beiardalen 24/viii in sphagnum in birch forest, fairly common.

Mycetoporus baudueri Muls. *Nsy: Base Camp 3/viii and other dates, under stones and beneath moss and lichens, rather scarce.

M. splendidus Grav. Nsi: Beiardalen 24/viii in moss in birch forest, 2 exx.

Bryoporus rugipennis Pand. Nsi: Beiardalen 24/viii in sphagnum in birch forest, 1 ex.

Tachyporus chrysomelinus L. Nsy: Glomen 3/ix. in grass heap, numerous.

Tachinus proximus Krtz. Nsy: Base Camp 21/viii on wing, 1 ex., and 30/viii on rotten fish bait, 3 exx. Nsi: Beiardalen 25/viii in cow dung, numerous.

T. pallipes Grav. Nsy: Glomen 3/ix. in grass heap, 2 exx.; Ruffudalen 10/viii in moss, 1 ex. Nsi: Beiardalen 25/viii in cow dung, numerous.

T. rufipes DeG. Nsy: Glomen 3/ix. in grass heap, 1 ex.

T. marginellus F. Nsy: Glomen 3/ix. in grass heap, numerous. Nsi: Beiardalen 24/viii in moss, 1 ex., 25/viii in cow dung, not uncommon.

T. corticinus Grav. Nsy: Glomen 3/ix. in grass heap, not uncommon. Nsi: Beiardalen 24/viii in grass heap, 1 ex.

Myllaena brevicornis Matth. *Nsy: Fykanvd. 4/ix. in sphagnum, fairly common.

Leptusa pulchella Manner. *Nsy: Fykanvd. 2/ix under hazel bark, 1 ex. Nsi: Beiardalen 25/viii under pine bark, not uncommon.

Autalia puncticollis Sharp. *Nsy: Glomen 2–3/ix in grass heap, common.

Gnypeta coerulea Sahlb. *Nsy: Base Camp 13/viii and other dates, amongst moss at edge of streams, scarce.

Atheta (Philhygra) arctica Thoms. Nsy: Base Camp 3/viii in moss, 1 ex.; Glåmvassfjellet 18/viii in sphagnum, 1 ex. Nsi: Beiardalen 24/viii in sphagnum in birch forest, 2 exx.

A. (Dinaraea) arcana Erichs. *Nsy: Ruffudalen 10/viii under birch bark, 3 exx.; Fykanvd. 2/ix under hazel bark, 3 exx.

A. (Liogluta) granigera Kies. *Nsi: Beiardalen 24/viii in moss in birch forest, 3 exx.

A. (L.) alpestris Heer. Nsy: Base Camp 3/viii and various dates, in moss and under stones on heath, not uncommon; Fiskvd. 6/viii in refuse at edge of lake, 2 exx.; Glomen 3/ix in grass heap, 1 ex. Nsi: Beiardalen 24/viii in moss in birch forest, 2 exx. and 25/viii in rotten hay, 1 ex.

A. (Bessobia) excellens Krtz. *Nsy: Glomen 3/ix in grass heap, 1 ex.

A. (Traumoecia) depressicollis Fauv. *Nsy: Glomen in grass heap, 2 exx.

A. (T.) frigida Sahlb. *Nsy: Glåmvassfjellet 18/viii in sphagnum, 2 exx.

A. (Microdota) subtilis Scriba. *Nsy: Glomen 3/ix in grass heap, 2 exx.

A. (Atheta) euryptera Steph. *Nsy: Glomen 3/ix in grass heap, 2 exx.

A. (A.) nigricornis Thoms. *Nsy: Glomen 3/ix in grass heap, 1 ex.

A. (A.) picipennis Manner. Nsy: Ruffudalen 10/vii in moss, 1 ex.; Glomen 3/ix in grass heap, 2 exx.

A. (A.) cinnamoptera Thoms. *Nsy: Ruffudalen 10/viii in moss, 1 ex.

A. (A.) islandica Krtz. Nsy: Base Camp 3/viii amongst moss, 2 exx.

A. (A.) atramentaria Gyll. Nsy: Glomen 3/ix in grass heap, 3 exx.

A. (*Acrotona*) *lateralis* Manner. Nsi: Beiardalen 24/viii in grass heap, 2 exx. and 25/viii in cow dung, 1 ex.

A. (A.) fungi Grav. Nsy: Glomen 3/ix. in grass heap, not uncommon. Nsi: Beiardalen 24/viii in moss in birch forest, common.

Drusilla canaliculata F. Nsi: Beiardalen 25/viii in rotten hay, 1 ex., and 27/viii in tent, 1 ex.

Ocyusa nivicola Thoms. *Nsy: Fiskvd. 6/viii in refuse at edge of lake, 1 ex.

Oxypoda nigricornis Motsch. *Nsy: Glomen 3/ix in grass heap, 1 ex. Nsi: Beiardalen 24/viii in moss, 1 ex.

O. funebris Krtz. Nsi: Beiardalen 24/viii in moss in birch forest, 1 ex.

Aleochara lanuginosa Grav. *Nsy: Glomen 3/ix in grass heap, 1 ex.

A. bipustulata L. *Nsy: Ruffudalen 10/viii on shingle bank of river, 1 ex.

PSELAPHIDAE

Euplectus karstenii Reich. *Nsi: Beiardalen 25/viii under pine bark, 1 ex.

Bibloporus bicolor Denny .*Nsy: Ruffudalen 11/viii under birch bark, 1 ex.; Fykanvd. 2 & 4/ix under hazel bark, not uncommon.

Bythinus puncticollis Denny. Nsi: Beiardalen 24/viii in moss in birch forest, 1 ex.

LYCIDAE

Dictyopterus aurora Hbst. Nsi: Beiardalen 27/viii under bark of dead pine stump, several larvae and remains of adults.

CANTHARIDAE

Podabrus alpinus Payk. *Nsy: Ørnes 2/viii on foliage, 1 ex.; Ruffudalen 10/viii on foliage of birch etc., scarce.

Rhagonycha limbata Thoms. Nsy: Ruffudalen 10–11/viii on foliage, scarce.

Malthodes flavoguttatus Kies. *Nsy: Ruffudalen 10/viii on foliage, common; Fykanvd. 16/viii on foliage, 1 ex.

CLERIDAE

Thanasimus formicarius L. Nsi: Beiardalen 25/viii several larvae under bark of freshly dead pine in company with various Scolytidae.

LYMEXYLIDAE

Hylecoetus dermestoides L. *Nsy: Ruffudalen 10–11/viii in freshly cut birch stumps, many larvae; many old borings were also evident in long-dead birches.

ELATERIDAE

Elater tristis L. Nsi: Beiardalen 25/viii, 1 dead ex. under loose pine bark.

Hypnoidus hyperboreus Gyll. *Nsy: Base Camp 2 & 3/viii under stones, scarce; Glåmvassfjellet 18/viii under stones, 4 exx.

H. rivularius Gyll. Nsy: Base Camp 3/viii and many dates, under stones in a variety of situations, common; Glåmvassfjellet 18/viii under stones, numerous. Nsi: Gråtåga 22/viii under stones on sandy heath, numerous; Beiardalen 24/viii in moss in birch forest, 1 ex.

H. dermestoides Hbst. Nsy: Base Camp 21/viii and other dates, amongst damp gravel and moss near streams, common; Fykanvd. 16/viii amongst shingle at edge of lake and stream, common.

Melanotus rufipes Hbst. Nsi: Beiardalen 23–25/viii, larvae and remains of adults in birch logs, scarce.

Harminius undulatus DeG. Nsy: Ruffudalen 11/viii, larvae in old rotten birch logs, scarce; Fykanvd., 2/ix in rotten birch log, 1 larva. Nsi: Beiardalen 24–28/viii, larvae in rotten pine and birch logs and stumps, common.

Athous subfuscus Muell. Nsi: Beiardalen 26/viii, 1 larvae under old cow dung, 27/viii 1 adult swept from young pine.

Corymbites affinis Payk. Nsy: Ruffudalen 10 & 11/viii on foliage, 2 exx.

Dalopius marginatus L. Nsy: Fykanvd. 16/viii beaten from birch, 1 ex.

Denticollis linearis L. Nsi; Beiardalen 24/viii in birch log, 1 larva.

BYRRHIDAE

Simplocaria semistriata F. *Nsy: Fykanvd. 16/viii in moss by stream, 1 ex.; Glomen 2–3/ix in grass heap, common.

Cytilus sericeus Forst. Nsi: Beiardalen 25/viii in tent, 1 ex.

Byrrhus fasciatus Forst. Nsy: Base Camp 20/viii under stone amongst moss, 2 exx.; Fiskvd. 6/viii under stones, 2 exx.

B. pilula L. Nsy: Base Camp 2/viii and other dates, mainly under stones, fairly common.

B. arietinus Steff. *Nsy: Base Camp 20/viii in thick moss on heath, 3 exx.

BYTURIDAE

Byturus tomentosus DeG. *Nsy: Fykanvd. 16/viii on *Filipendula* flowers, 2 exx.

NITIDULIDAE

Epuraea boreella Zett. Nsi: Beiardalen 25–26/viii on freshly cut birch stumps, scarce.
E. placida Mäkl. *Nsy: Glomen 2 & 3/ix in grass heap, not uncommon.
Glischrochilus quadripunctatus L. Nsi: Beiardalen 26/viii under bark of sappy birch stump, 1 ex.
Pityophagus ferrugineus L. Nsi: Beiardalen 25/viii in Scolytid borings in pine logs, a few larvae.

RHIZOPHAGIDAE

Rhizophagus depressus F. Nsi: Beiardalen 25/viii in Scolytid borings in pine logs, scarce.
R. ferrugineus Payk. Nsi: Beiardalen with the preceding species, scarce.
R. dispar Payk. *Nsy: Ruffudalen 11/viii under fungoid birch bark, common. Nsi: Beiardalen 24–27/viii on sappy birch stumps, fairly common.
R. nitidulus F. *Nsy: Ruffudalen 12/viii under fungoid birch bark, fairly common. *Nsi: Beiardalen 24/viii on sappy birch stumps, fairly common.

CUCUJIDAE

Pediacus fuscus Erichs. Nsi: Beiardalen 24/viii 1 larva, and 28/viii many larvae and 2 adults, under bark of old pine stumps.

CRYPTOPHAGIDAE

Antherophagus pallens F. *Nsy: Storglomvassbrakka 29/viii, 1 ex. in a *Bombus* nest which had been constructed in an old bird nest situated on a ledge in a little-used room. Many larvae present may have been referable to this species.
Atomaria semitestacea Reitt. *Nsy: Glomen 3/ix in grass heap, common.
A. apicalis Erichs. Nsy: Glomen 3/ix in grass heap, common.
A. ruficornis Mars. *Nsy: Glomen 3/ix in grass heap, 4 exx.

LATHRIDIIDAE

Enicmus minutus L. Nsy: Glomen 4/ix in grass heap, not uncommon. (Nsi: Beiardalen 27/viii on pine plank, 1 ex. — female- which may be referable to this species).

COLYDIIDAE

Cerylon ferrugineum Steph. *Nsy: Ruffudalen 11/viii under birch bark, 1 ex.
C. histeroides F. Nsi: Beiardalen 25/viii under fungoid pine bark, common.

ENDOMYCHIDAE

Endomychus coccineus L. Nsy: Ruffudalen 12/viii in chinks of very old fungoid birch tree, 5 exx. Nsi: Beiardalen 24/viii under birch bark, 2 exx.

COCCINELLIDAE

Coccinella trifasciata L. *Nsy: Glåmdalen no data, 1 ex.
Calvia quattuordecimguttata L. Nsi: Beiardalen 24 and 26/viii on birches, very scarce.

CISIDAE

Cis boleti Scop. *Nsy: Ruffudalen 10/viii in the fungus *Polystichtus versicolor* on birch stumps, fairly common.
C. festivus Gyll. *Nsy: Fykanvd. 3/ix under hazel bark, 1 ex. *Nsi: Beiardalen 24/viii on birch stump and 25/viii on pine stump, single exx.

PTINIDAE

Ptinus fur L. Nsy: Storglomvassbrakka 29/viii in spider's web, 1 ex.

OEDEMERIDAE

Oedemera virescens L. *Nsy: Fykanvd. 16/viii, 2/ix and 4/ix on flowers of *Filipendula*, single exx.

PYTHIDAE

Pytho depressus L. Nsi: Beiardalen 25/viii under pine bark, 4 exx., 28/viii under pine bark, 6 larvae.

SALPINGIDAE

Rabocerus gabrieli Gerht. *Nsy: Fykanvd. 4/ix under hazel bark, 1 ex. Nsi: Beiardalen 24/viii under birch bark, 1 ex.

Rhinosimus ruficollis L. Nsy: Fykanvd. 4/ix under hazel bark, 1 ex.

PYROCHROIDAE

Schizotus pectinicornis L. Nsy: Ruffudalen 10–12/viii, larvae commonly under bark of birch stumps. Nsi: Beiardalen 24–5/viii larvae under birch bark, scarce.

MORDELLIDAE

Anaspis rufilabris Gyll. *Nsy: Fykanvd. 16/viii and 2/ix on flowers of *Filipendula*, 2 exx. on each occasion. Nsi: Beiardalen 24/viii and 26/viii in same habitat, single exx.

A. arctica Zett. Nsi: Beiardalen 25–6/viii on flowers of *Filipendula*, singly.

SERROPALPIDAE

Tetratoma ancora F. Nsi: Beiardalen 25/viii on birch chippings, 1 ex.

Abdera flexuosa Payk. *Nsy: Ruffudalen 10/viii on the fungus *Fomes fomentarius*, 1 ex. (Probably a stray specimen from some neighbouring alders, where its host fungus *Polyporus radiatus* occurred).

Xylita laevigata Hell. Nsi: Beiardalen 25/viii in pine stump, 1 larva.

TENEBRIONIDAE

Boletophagus reticulatus L. *Nsy: Ruffudalen 10/viii in the fungus *Fomes fomentarius* on a dead birch tree, 1 larva.

SCARABAEIDAE

Aphodius rufipes L. Nsi: Beiardalen 25/viii, not uncommon in cow dung.

A. fimetarius L. Nsy: Base Camp 14/viii in reindeer dung, 1 ex. Nsi: Beiardalen 24–6/viii in cow and sheep dung, fairly common.

A. lapponum Gyll. Nsy: Seglvd. 4/viii, and Base Camp various dates, fairly common in reindeer dung. Nsi: Beiardalen 25–7/viii not uncommon in dung.

A. borealis Gyll. Nsi: Beiardalen 25–7/viii not uncommon in dung.

A. fasciatus Oliv. (*tenellus* Say). Nsi: Beiardalen 25–&/viii not uncommon in dung.

Trichius fasciatus L. Nsy: Ruffudalen 10/viii on thistles, 3 exx.; Fykanvd. 2–4/ix on various flowers, fairly common. Nsi: Beiardalen 24–7/viii on various flowers, very scarce.

CERAMBYCIDAE

Rhagium inquisitor L. Nsy: Ruffudalen 10/viii an old characteristic pupal cell under pine bark. Nsi: Beiardalen 24–7/viii, larvae not rare under pine bark, adults occasional on freshly cut timber.

R. mordax DeG. Nsy: Ruffudalen 11–12/viii, larvae not uncommon in birch stumps, 1 adult beaten from foliage; Fykanvd. 2/ix larva under hazel bark together with 1 adult. Nsi: Beiardalen 23/viii, larva in birch stump.

Evodinus interrogationis L. Nsy: Fykanvd. 2/viii on flower of *Geranium*, 1 ex.; Ruffudalen 12/viii on flower of *Geranium*, 1 ex.; near Storglomvatnet 20/viii amongst scrub birch, 1 ex.; Base Camp 21/viii amongst scrub birch, 1 ex.

Pogonocherus fasciculatus DeG. Nsi: Beiardalen 26/viii beaten from freshly cut pine branches, 1 ex.

Acanthocinus aedilis L. Nsi: Beiardalen 25/viii, larvae very common under bark of freshly cut pine logs.

Saperda scalaris L. Nsy: Ruffudalen 12/viii on old birch tree, 1 ex.; Fykanvd. 2/ix under bark of hazel, 2 larvae. Nsi: Beiardalen 23/viii borings in hazel stump.

CHRYSOMELIDAE

Adoxus obscurus L. Nsy: Fykanvd. 12/viii, 16/viii and 2/ix on foliage of *Epilobium*, fairly common.

Cryptocephalus labiatus L. *Nsy: Ruffudalen 12/viii on birch foliage, 1 ex. Nsi: Beiardalen 26/viii on birch foliage, 1 ex.

Chrysolina staphylea L. Nsy: Glomen 7/ix amongst grass, 3 exx.

Melasoma collaris L. Nsy: near Glåmdalen 20/viii in tents, 3 exx. Nsi: Beiardalen 23/viii on small sallow bush by river, 2 exx.

M. lapponica L. Nsi: Beiardalen 23 and 25/viii on sallows, not uncommon.

Phytodecta pallida L. Nsy: Ruffudalen 10 and 12/viii, singly on mountain ash.

Phyllodecta vitellinae L. Nsy: Ruffudalen 12/viii on sallow, 1 ex.; Fykanvd. 2/ix on sallow and hazel, few specimens. Nsi: Beiardalen 23–7/viii on sallow, not uncommon.

CURCULIONIDAE

Deporaus betulae L. Nsy: Ruffudalen 12/viii on birch, not common; Fykanvd. 16/viii on birch, 2 exx. Nsi: Beiardalen 24/viii on birch, 1 ex.

Apion facetum Gyll. Nsy: Fykanvd. 16/viii on *Vicia*, 1 ex.

Otiorrhynchus arcticus F. Nsy: Base Camp 2/viii and many dates, under stones, common; Seglvd. and Isvd. 4/viii under stones, a few specimens; Glåmvassfjellet 18/viii under stones, fairly common. Nsi: Beiardalen 24/viii on sand bank of river, scarce; Gråtåga 22/viii under stones, fairly common.

O. nodosus Muell. (*dubius* Stroem). Nsy: Base Camp 2/viii and many dates, under stones etc., fairly common; Seglvd. and Isvd. 4/viii and Fiskvd. 5/viii under stones not uncommon; Ruffudalen 11/viii under stones near lake, 2 exx.; Glåmvassfjellet 18/viii stones, fairly common. Nsi: Gråtåga 22/viii under stones, fairly common; Beiardalen 24/viii under stones by river and in moss, scarce.

Barynotus schoenherri Zett. Nsy: Glomen 2/ix in grass heap, 1 ex.

Tropiphorus obtusus Bonsd. Nsy: Glomen 3–4/ix in grass heap, not uncommon.

Eremotes ater L. *Nsy: Ruffudalen 10/viii in rotten pine stump, 2 exx. Nsi: Beiardalen 24–5/viii in pine stumps, not uncommon.

Grypus equiseti F. Nsy: Base Camp 14/viii under stone by stream, 1 ex.

Pissodes pini L. Nsi: Beiardalen 25 and 27/viii on pine stumps, single exx.

Magdalis phlegmatica Hbst. Nsi: Beiardalen 25/viii under pine bark, 1 dead ex.

Lepyrus arcticus Payk. Nsy: Base Camp 7, 14 and 16/viii, under stones on heath by stream, single exx.

Hylobius abietis L. Nsi: Beiardalen 25/viii remains of 1 ex. on pine stump.
Anoplus plantaris Naez. Nsy: Fykanvd. 2/ix on birch, 1 ex. Nsi: Beiardalen 27/viii on birch, 1 ex.

SCOLYTIDAE

Scolytus ratzeburgi Jans. Nsi: Beiardalen 27/viii, numerous borings in dead birch trees.
Blastophagus piniperda L. Nsi: Beiardalen 25/viii galleries with larvae and adults in enormous numbers under the bark of freshly cut pine logs.
Hylurgops palliatus Gyll. Nsi: Beiardalen 25/viii, under the same conditions as the preceding species, fairly common.
Hylastes brunneus Erichs. Nsi: Beiardalen 28/viii under pine bark, 2 exx.
Dryocoetus alni Georg. *Nsy: Fykanvd. 4/ix in bark of hazel, not uncommon.
Trypodendron lineatum Oliv. Nsi: Beiardalen 25/viii in pine log, 1 ex.

SUMMARY

The foregoing paper contains a list of beetles collected during the summer of 1965 in southern Nordland on the British Schools Exploring Society's annual expedition. Of the species found, eighty-seven had not been previously recorded from the viceprovince of south-west Nordland, nor seven from that of south-east Nordland.

ACKNOWLEDGEMENTS

I would like to express my deep gratitude to the officials of the British Schools Exploring Society for the opportunity afforded to visit southern Nordland on their 1965 expedition, and to all the fellow leaders and other members who helped to make the expedition such a success; to Inga and Jenny Kjeldåslet and Ole Hammer and his wife of Tollå, Beiarn who made our stay in Beiardalen an unforgettable experience, and to all the other friends we made who helped us in so many ways. Especially I owe a great debt of gratitude to my colleague Dr. Andreas Strand of Oslo for his unfailing generosity with specimens, reprints, and information, and who has also kindly read through the manuscript.

Some New Finds of Stoneflies, Plecoptera

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(Received 16 September, 1967)

Two of the species here mentioned are new to Norway, and *Isogenus nubecula* Newman is new to the geographical region 'Boreales Hochland' (Illies 1967). A preliminary report is given here; the material will be dealt with in greater detail in a later work.

FAMILY NEMOURIDAE Klápalek 1905

Genus Protonemura Kempny, 1898

P. intricata Ris, 1902. Fø: Oterbekken, Korpfjell, Sør-Varanger 9.7.1966, 1 ♂ leg. Lillehammer (new to Norway). The male agrees closely with Illies' (1955), and Aubert's (1959) descriptions.

Meinander (1965) mentions some finds of *P. intricata*, from the eastern parts, as the only records in Fennoscandia. In Limnofauna Europea however, Illies (1967) suggests that the occurrence of the species in Fennoscandia is doubtful.

FAMILY PERLODIDAE Klápalek 1912

Genus Isogenus Newman, 1833

I. nubecula Newman, 1833. Bø: Sokna, Ringerike 23.4.67, 1 nymph leg. Lillehammer. The nymph agrees closely with Brinck's (1949) description. Earlier records in Norway, only 1 skin from Kläraelven HEn at Plassen 18.7.46 leg. Brinck.

Genus Perlodes Banks, 1903

P. dispar (Rambur, 1842). Ø: Berbyelva Idd, 30.5.66, 1 ♀ leg. J. Solem, AK: Hafstenelva Østby, Søndre Høland 24.5.67, 1 ♂ leg. Lillehammer (new to Norway). The adults agree with Brinck's (1952) descriptions. In the wing veins, however, there are some lesser variations.

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Koleopterologiske bidrag XIII

ANDREAS STRAND
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(Mottatt 27. september 1967)

Aëpus marinus Strøm. Av denne arten, som er knyttet til havstrender og i sin utbredelse er begrenset til den sydvestligste del av Norge, de Britiske øyer og den nordligste del av Frankrike, tok Semb Johansson 5/8 1966 et eksemplar på Ø:S. Sandøy nær grensen mot Sverige.

Ptiliolum wüsthoffi Rossk. Jeg har tidligere (Strand 1950) nevnt at denne arten, som Wüsthoff og Rosskothen tok i utlagt duelort i Aachen og i Hohe Venn i Rheinland, og som ble beskrevet i 1934, allerede noen år tidligere var funnet i Pälkäne i Finland av H. Söderman, og av Victor Hansen erklært for å være en ny art.

Ifølge Israelson (1966a) er arten tatt i utlagt gress på torvbunn ved Hässleholm i Sverige i oktober-november, og den 25/6 1967 tok jeg som ny for Norge et eksemplar i utlagt duelort på AK: Brønnøya i Asker.

Andre funn enn de her nevnte kjenner jeg ikke til, men arten er utvilsomt videre utbredt og sannsynligvis blandet sammen med den nærstående *schwarzi* Flach.

Acrotrichis lucidula Rossk. Av denne arten, som normalt ser ut til å være knyttet til våt mose i nærheten av oppkommer, har jeg tatt flere eksemplarer i tang på AK: Ostøya.

Ptomaphagus variicornis Rosh. Av denne overalt sjeldne art, som sikkert er knyttet til dyrebol og dyreganger, og som fra Norge tidligere bare er oppgitt i to eksemplarer som Munster fant i omegnen av Oslo, har jeg på AK: Røa tatt en del eksemplarer dels flygende og dels på et vindu. Lektor Hanssen har tatt to eksemplarer ved å sikte gammelt løv i AK: Oslo og AK: Asker.

Coryphium angusticolle Steph. Av denne art, som bl. a. er karakterisert ved kraftig punktering på hode, brystskjold og dekkvinger, fant jeg 20/6 1958 på STi: Røros et eksemplar med sterkt utvisket punktering både på brystskjold og dekkvinger og særlig på holdet. Det skiller seg ellers ikke fra *angusticolle* og er neppe annet enn et misdannet eksemplar av denne art.

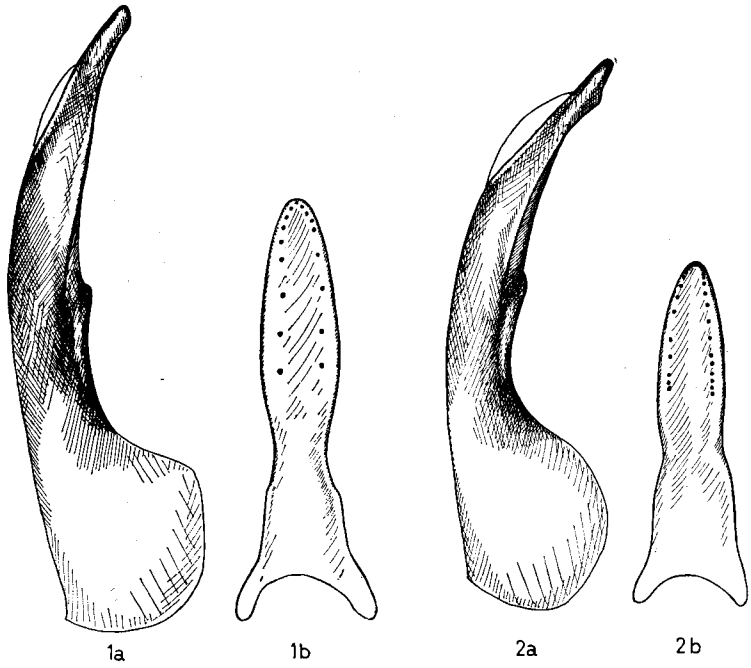

Fig. 1. *Philonthus parcus* Sharp.
Fig. 2. *Philonthus sordidus* Gr.
a. Penis, sett fra siden (Lateralansicht)
b. Paramerer.

Anders Vik del.

Stenus europaeus Puthz. Ifølge Puthz (1966) skal den art som hos oss er regnet som *cautus* Er. ikke være denne art, men den nylig beskrevne *europaeus*.

Philonthus parcus Sharp. Fra Stig Lundberg fikk jeg for noen år siden til bestemmelse noen svenske eksemplar av en *Philonthus* som jeg ikke kjente, og senere sendte Colin Johnsen meg en ♂♀ av samme art, bestemte som *parcus* og tatt i Manchester-trakten 6/12 1964. Den 10/8 1964 fant Anders Vik en ♂♀ av arten på fuktig bunn ved On: Vålåsjø på Dovre i ca. 1000 m høyde. Smetana har bekreftet bestemmelsen.

Arten er beskrevet i 1874 etter et eksemplar fra Japan. Den står meget nær *sordius* Gr., men er noe større og følehornene er noe tykkere, ellers er det neppe noen sikker forskjell i ytre karakterer. Som fig 1 og 2 viser, er derimot både penis og paramerene forskjellige.

Quedius mesomelinus Marsh. a. *matinai* Roub. Den 21/5 1936 fant jeg i hønselort på AK. Blindern i Oslo et eksemplar som Gridelli bestemte som «? *mesomelinus*» og Korge som «? *mesomelinus* a. *matinai* Roub.». Eksemplaret skiller seg fra hovedformen ved at dekkvingene er påfallende lyst brunrøde.

Quedius umbrinus Er. (*pseudoumbrinus* Lohse). Korge (1963) har gjort oppmerksom på at de to former som har vært holdt for egne arter, i virkeligheten viser så stor variasjon i de karakterer som skulle kjennetegne dem, at de ikke kan opprettholdes som forskjellige arter. Det norske materiale fra såvel sør som nord bekrefter denne oppfatning. En rekke genitalundersøkelser som jeg har gjort, viser at både penis og paramerene varierer betraktelig.

Quedius sublimbatus Mäkl. (*arcticus* Munst.). Smetana (1965) har ved typeundersøkelse av *sublimbatus* brakt på det rene at denne art er den samme som den senere beskrevne *arcticus* Munst.

Mycetoporus altaicus Luze. Av denne nordlige art, som fra Sør-Norge tidligere var kjent i bare to eksemplarer, tok jeg den 18/4 1966 et eksemplar på AK: Røa ved å sikte gammelt løv ved roten av en bjørk, og den 21/5 1966 fant jeg to eksemplarer i oppskyll på elvebredd ved HEs: Kongsvinger.

Et eksemplar som jeg den 17/10 1937 tok på AK: Røa har flygevinger, kjennetegnet ved lys hårbrem på 5. frie ryggledd, mens alle andre kjente norske eksemplarer har rudimentære flygevinger og mangler den lyse hårbrem.

Tachyporus quadriscopulatus Pand. Kerstens og Lohse har meddelt meg at det er denne art, og ikke *signifer* Pand., som vi har.

Meligethes subaeneus Sturm. Et eksemplar av denne arten, som er ny for Norge, håvet jeg på AK: Brønnøya den 11/8 1965. Victor Hansen har kontrollert bestemmelsen.

Cryptophagus plagiatus Popp. Av denne arten, som tidligere hos oss var kjent i bare to eksemplarer, ett som Lysholm fant i TRi: Målselv, og ett som jeg fant i en utløe på en holme i elven ved TRi: Rundhaug i Målselv, tok Vik og jeg den 11/7 1965 og den 28/6 1966 et par eksemplarer i en utløe ved HEn: Tolga.

Cryptohagus quercinus Kr. Om denne arten sier Bruce (1936) at den er ytterst sjelden og i stor utsrekning har vært forvekslet med andre arter. Blant det svære *Cryptophagus*-material han har hatt til bearbeidelse, har han, selv med tvilsomme eksemplarer, ikke funnet mer enn 20, derav ett fra Sverige, som er det eneste fra Fennoskandia. I den nordiske katalogen er imidlertid arten ført opp fra en rekke områder i Sverige, men hverken fra Danmark, Finland eller Norge.

Den 28/6 1966 tok jeg i en utløe i HEn: Tolga 4 eksemplarer som stemmer godt med beskrivelsen av *quercinus*. Ytterligere noen eksemplarer har jeg tatt i HEn: Gutulia, Bø: Vassfaret, TRi: Rostavatn og TRi: Sappen i Nordreisa.

Victor Hansen, som har sett to av mine eksemplarer og sammenliknet dem med eksemplarer som Bruce og Ganglbauer, har bestemt, og den

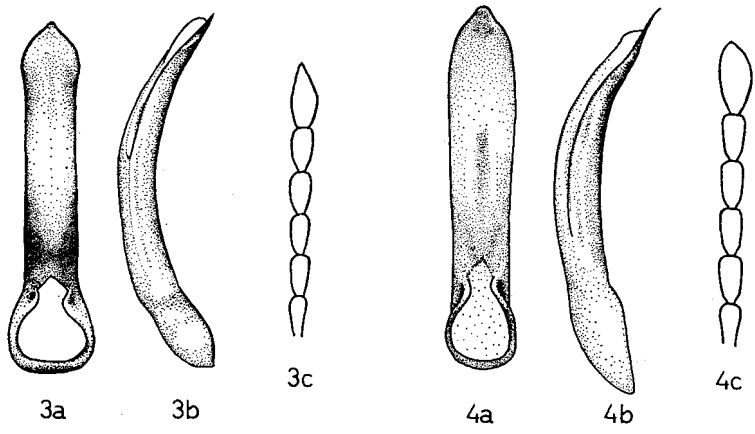

Fig. 3. *Chaetocnema heikertingeri* Ljub.
Fig. 4. *Chaetocnema concinna* Marsh.
a. Penis, sett fra undersiden (Ventralansicht).
b. Penis, sett fra siden (Lateralansicht).
c. Følehorn, ledd 6–11 (Fühler, Glieder 6–11).

engelske *Cryptophagus*-spesialist Woodroffe, som har sett ett av eksemplarene, har bekreftet bestemmelsen.

Dyrene er, foruten i utløer, funnet i sopp på gamle bjørketrær.

Cis quadridens Mell. Benick (1952) oppgir at Munster (1922) har nevnt at han har tatt denne arten på *Placoderma betulinum*. Dette er feilaktig, Munster sier at han har tatt den «paa sop paa grantrær». Det er *dentatus* Mell. som han har tatt på den nevnte soppen.

Mordella brachyura Muls. Et eksemplar som jeg den 27/6 1933 tok ved AAy: Risør, har Ermisch bestemt til denne art, som er ny for landet.

Mordella hütheri Ermisch. Denne arten, som også er ny for landet, har jeg fra følgende steder: Ø: Skjeberg (Hanssen), AK: Hvalstad, Brønnøya, Ostøya og Røa (A. Strand), Os: Gjøvik (Hanssen) og AAy: Landvik og Gjerstad (Hanssen). Samtlige er bestemte av Ermisch.

Melasoma collaris L. (*alpina* Zett.). Den 24/6 1930 tok lektor Hanssen og jeg på fjellet Kalvhodet (Kalvhau) i TRi: Målselv 145 eksemplarer, som alle hadde blågrønne dekkvinger. Litt senere, den 14/7 1930, tok vi på Björkeng, som ligger i dalbunnen under Kalvhodet, 75 eksemplarer, alle med fiolette dekkvinger. Noen andre forskjelligheter har det ikke vært mulig å finne.

Chaetocnema heikertingeri Ljub. Folwaczny (1964) har gjort oppmerksom på

denne nylig beskrevne art, som står meget nær *concinna* Marsh. Forskjellen i ytre karakterer er meget vake. Hos *heikertingeri* skal følehornene være mørkere, men denne karakter varierer adskillig. Hos ♂ er første ledd på fortarsene bredere enn hos *concinna*, og penis er forskjellig som vist i fig. 3a, 3b, 4a og 4b.

Israelson (1966b), som har gjennomgått mit material og nylig har redegjort for sine funn av arten i Sverige, har påvist en karakter, som skulle gjøre det mulig å skille også hunnene fra hverandre, nemlig bygningen av siste følehornsledd, som hos *heikertingeri* er smalere og mer tilspisset, mens det hos *concinna* er tydelig bredere og mer rundet, se fig. 3c og 4c.

Utbredelsen av de to artene i Norge er i hovedtrekk slik:
concinna: Ø, AK, HEs, VE, TEy, AAy, VAy, Ry, Ri, HOy, HOi.
heikertingeri: Ø, AK, Os, Bø, VE, TEy, AAy.

De er følgelig begge funnet på en rekke steder på Østlandet og Sørlandet, *concinna* er også tatt flere steder på Vestlandet, hvor *heikertingeri* ser ut til å mangle.

Ceuthorrhynchus viridanus Gyll. Denne arten har hittil vært kjent bare fra Irtysch i Sibir, Thorenc i Alpes-Maritimes og en del steder i det sentrale Norge (Os og On) (Strand 1966). Dieckmann har nylig meddelt meg at i en bestemmelsessending fra Korge var det en ♂ fra Anatolia centr. Erciyas-Dagi 2000 m leg. Korge & Heinz den 24/7 1965. Genitaliene hos dette eksemplar er nøyaktig som hos et norsk eksemplar jeg har sendt ham, derimot er det noen små avvikelser i de ytre karakterer. Dieckmann nærer imidlertid ingen tvil om at det dreier seg om én og samme art.

ZUSAMMENFASSUNG

Der Verfasser teilt einige interessante, norwegische Funde von Käfern mit, u. a. von *Philonthus parcus* Sharp, mit Zeichnungen von Penis und Parameren von dieser Art und von *sordidus* Gr., wie auch von *Chaetocnema heikertingeri* Ljub., mit Zeichnungen von Penis und Fühlern von dieser Art und von *concinna* Marsh. Die folgenden Arten sind neu für Norwegen: *Ptiliolum wüsthoffi* Rossk., *Philonthus parcus* Sharp, *Meligethes subaenus* Sturm, *Cryptophagus quercinus* Kr., *Mordella brachyura* Muls., *Mordella hütheri* Ermisch, und *Chaetocnema heikertingeri* Ljub.

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Norsk ent. Tidsskr. 13:82. Overskriften skal lyde: Koleopterologiske bidrag XII (ikke XI).

A Collection of Spiders from Son, Norway

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(Received 16 October 1967.)

A collection of 256 spiders made during the summers of 1964–1967 at Son, Akershus (AK 2) has resulted in the identification of 67 different species. Of these, a list of 24 species is given below. Son is situated on Oslofjord, 60 kilometres south of Oslo.

Species marked with an asterisk are new to Norway. Most of the species have not been recorded from Akershus previously, the records from that area being in any case very scattered.

The majority of the species were collected on steep, essentially rocky ground immediately bordering on the sea. The vegetation consists for the most part of heather, juniper, scattered birch, oak and conifers. Some of the species were collected in pine-forest up to a few hundred metres inland.

Centromerus arcanus (O.P.-Cambr.), moss (Sphagnum) in pine-forest 200 metres inland: 29 V 66,1 ♀; 10 VII 66,3 ♀♀.

C. incilium (L. Koch), found in a similar habitat to that of *C.arcanus:* 10 VII 66,2 ♀♀.

Dipoena inornata (O.P.-Cambr.), litter and pine-needles, about 20 meters from the sea: 29 V 66,1 ♀. Only one previously published locality from Norway, notably Suldal (Strand 1902).

Diplocephalus latifrons (O.P.-Cambr.), moss in pine-forest: 29 V 66,1 ♀. Hitherto recorded from only one locality in Norway, notably the forests of Nordmarka, Oslo, (Palmgren 1963).

Episinus truncatus Latr., in its web in carline heather about 20 metres from the sea: 14 VII 64,1 ♀, also on the lower branches of a pine tree: 3 VII 66,1 imm.

Erigonella hiemalis (Blw.), moss (Polytrichum) in pine-forest 200 metres inland: 10 VII 66,1 ♂. Only one previously published record from Sogn (Kauri 1966).

Heliophanus dubius C. L. Koch, sweep-net in lower vegetation, open landscape with a few conifers near by: 29 V 66, 1 ♀, 1 ♂.

H. Tambs-Lyche drew my attention to some specimens of *H. dubius* which he had identified, but the records of which had never been published. By kind permission of the Museum of Zoology, University of Bergen, where the specimens are kept, I had the pleasure of confirming these determinations. The species were: 1 ♂ from Ulvik, Hardanger 27 V 1939, 1 ♀ collected at Jamstøl, v. Slidre 11 VII 1944 and 1 ♀ and 1 imm. collected at Sekse, Hardanger 23 VII 1945.

Lephtyphantes cristatus (Menge), on grass, open place in conifer forest: 19 V 66,1 ♀.

L. minutus (Blw.): 12 VIII 65,1 ♀.

**Liocranum rupicola* (Walck.), in moss, pine-forest: 29 V 66,1 ♂. This spider is reported to be a rather rare species by Locket & Millidge (1951). The only previously

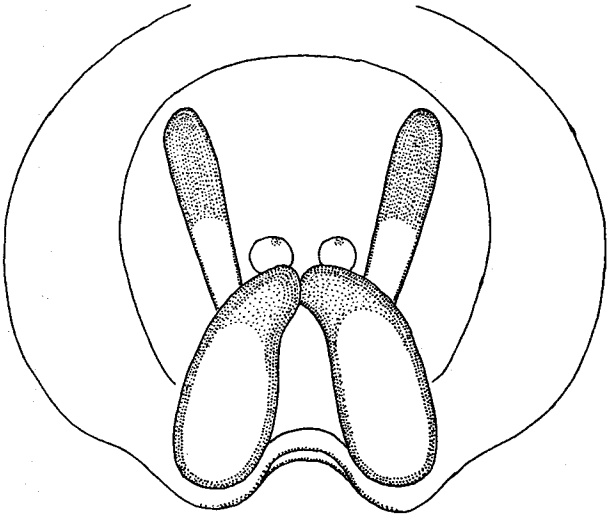

Fig. 1. Epigyn of *Salticus zebraneus* (C. L. Koch.)

known occurrence in Norway is recorded by A. Semb Johansson (unpublished), who found 1 ♂ and 2♀♀ on the Hvaler islands, Østfold, 2 VIII 1962. (The specimens identified by the author.)

Macrargus rufus (Wider), in pine needles and dead leaves: 29 V 66,1 ♀.

Maso sundevalli (Westr.) ,sweep-net in grass, open land: 29 V 66,1 ♀, also in moss (Polytrichum), pine-forest: 3 VII 66,2 ♀♀.

Oxyptila atomaria (Panz.), undergrowth; ? 1966, 1 ♀. Identification kindly confirmed by H. Kauri.

Pachygnatha listeri Sundevall, grass stem, open land: 17 VII 66,1 ♀.

**Salticus zebraneus* (C. L. Koch): 29 V 66,1 ♀; 23 V 65, 1 ♀, 19 V 66, 2 ♀♀. Previously the genus Salticus was, according to the author's file, only represented in Norway by *S. scenicus* (Cl.) and *S. cingulatus* (Panz.). Some finds of a third species *S. zebraneus* (C. L. Koch) at Son have now been made. One of the specimens caught 19 V 66 was found in a silk cell under the bark of Betula odorata suggesting that adult spiders may hibernate in this way. The epigyn of *S. zebraneus* is shown in Fig. 1.

**Syedra gracilis* (Menge), moss in pine-forest: 10 VII 66, 1 ♀. H. Kauri has kindly confirmed the identification of this interesting find. Locket & Millidge (1953) consider it a rarity in England. Å. Holm (personal communication) states that it has not, so far, been recorded in Sweden.

Stylophora concolor (Wider), in moss, pine-forest: 30 IV 67, 2 ♀♀, 1 ♂.

* ? *Theridion bimaculatum* (L.): 10 VII 66, 14 ♀♀; 3 VII 66, 2 ♀♀, 1 ♂. This spider was found to be quite common on the lower branches of oak trees. The 3 above specimens were found on a spruce adjacent to an oak. *T. bimaculatum* is only recorded by Becker (1896): "Suède- Norvège".

T. pallens Blw.: 3 VII 66, 6 ♀♀. *T. pallens* seems restricted to oak trees where all the 6 specimens were collected. The only previously published record is by H. Tambs-Lyche (1938) when a female with its characteristic egg-sacs was found at Blommenholm near Oslo.

T. tinctum (Walck.), low branches of spruce in open land: 3 VII 66,1 ♀.

For the following species, I am indebted to H. Tambs-Lyche and the Museum of Zoology, University of Bergen for permission to examine specimens kept there,

viz. 2 ♀♀ of *T. tinctum* collected on the Hvaler islands 9 VII 1944, and 12 VII 1945, and 1 ♂ of *T. vittatum*, 14 IX 1945.

T. vittatum C. L. Koch, lower branches of oak tree: 3 VII 66, 3 ♀♀.

Wideria antica (Wider), moss (Sphagnum), in pine forest: 19 V 65,1 ♂.

Xysticus erraticus Blw., sweep-net in grass, open land: 18 IX N66, 1 ♀.

X. lanio C. L. Koch., under stone, 20 metres from the sea: 27 VI 65, 1♀.

SUMMARY

A list of spiders collected at Son, Akerhus, Norway is given. Four species, marked with asterisks, are new to Norway. Most of the remaining species are new to Akershus.

ACKNOWLEDGEMENTS

I am indebted to Professor H. Kauri and cand. real H. Tambs-Lyche for valuable help with the manuscript, and also for the kind loan and use of specimens kept at the Museum of Zoology, University of Bergen.

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The Present Distribution of *Hylotrupes bajulus* L. (Col., Cerambycidae) in Norway and its Abundance in some Districts

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(Received October 10 1967.)

INTRODUCTION

Hylotrupes bajulus L. has been native to Norway for more than a hundred years. A brief review on the occurrence of the species in Norway, based on literature, museum materials and other information, has been published earlier (Bakke 1960).

During the period 1961–65 the investigation of wood-boring insects was intensified in Norway, and the knowledge of the distribution of *Hylotrupes* has increased. Surveys were carried out in the areas under attack. Further, the abundance of the species was investigated in some districts. These investigations have given valuable information on the economic importance of *Hylotrupes* in Norway.

GEOGRAPHICAL DISTRIBUTION

The map (Fig. 1) shows the present distribution of *Hylotrupes*. Most of the surrounding districts have been surveyed without the discovery of any attack.

The largest area where *Hylotrupes* is distributed extends from the inner parts of Telemark to the districts adjacent to the west side of Kristiansand. In Aust- and Vest-Agder the species was found along the coast, in a belt of land varying in width between 10 and 20 kilometres.

The inland localities of Telemark where the species occurs are lowland districts with comparatively high summer temperatures. The species seems to be limited to the lower parts of the districts both in Telemark and Agder. Two main limiting factors may be involved; an elevation of the landscape which creates a colder climate, and a decreasing density of buildings.

In West Norway attacks were located in the middle and inner areas along

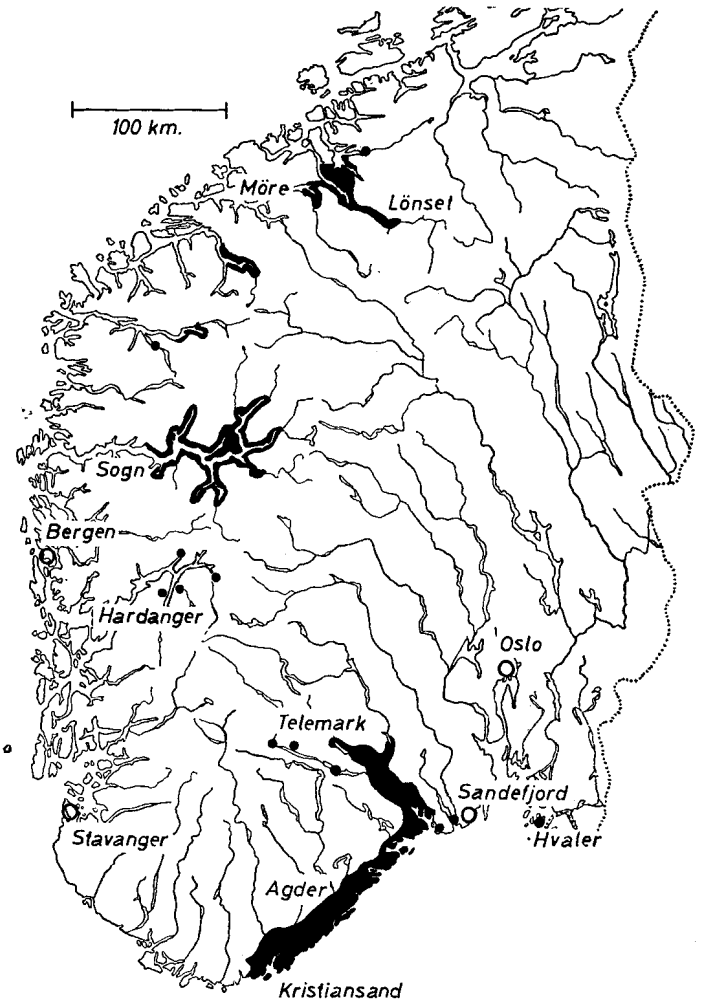

Fig. 1. The distribution of *H. bajulus* in Norway.
●: Localities with general occurrence.
○: Localities with a single house infested.

the fiords in the counties of Hordaland, Sogn & Fjordane, and Møre & Romsdal. The situation in the Sognefjord is described separately (Knudsen 1967). Even if the species is generally found to be distributed in lower parts of the country, attacks have been found at comparatively high altitudes. In Telemark and Sogn & Fjordane *Hylotrupes* occurs at an altitude of about 400 m, and in Lønset in Sør-Trøndelag infestation is recorded in a timber building 600 m above sea level.

Active attacks were found at several new localities compared to the distribution earlier described (Bakke 1960). In Østfold, the species was recorded on the islands of Hvaler about 60 years ago, but the location was not regarded as a *Hylotrupes*-area in recent years. In 1963, however, one beetle was found, and when investigated, attacks were discovered in buildings all over one of the islands. In Vestfold the species was observed for the first time at different locations in 1964–66; in the municipality of Brunlanes *Hylotrupes* occurs in some localities; in Larvik one attack was found in a building several hundred years old. Attacks in the most eastern locality in this county, situated south of Sandefjord, have been quite recently detected.

In Vest-Agder, *Hylotrupes* appeared to be more frequently distributed than earlier assumed. The species seems to be quite common in the south-eastern part of the county while the attacks vanish some 20 kilometres west of Kristiansand. Investigations in Evje and Fjotland in Vest-Agder and Moi in Rogaland, previously regarded as *Hylotrupes*-localities, did not reveal any new attacks.

SPREADING THROUGH BUILDING MATERIALS

In the years 1962–66 a single house infested by *Hylotrupes* was found in each of the localities Oslo and Sandefjord in East Norway and Stavanger and Bergen in West Norway. The attacks in the eastern part of the country had developed over a period of 20 years, while those in West Norway took 13 years. It is evident that these attacks were a consequence of removing infested timber, new or old, from localities where *Hylotrupes* occurs. Examination of buildings in the neighbourhood did not produce evidence of other infestations in the area. In the case in Oslo, at the Norwegian Folk Museum, the infestation was introduced with an old building from Telemark. Earlier, parts of the timber were destroyed by larvae, and new materials logged near Oslo were used at the restoring. The most heavy attacks had developed in the new materials, while the activity in the original constructions was poor. This fact has been observed before, and the connexion between attacks and age of timber is discussed by several authors (Wichmand 1941, Schuch 1954 and Kørting 1961).

In Stavanger and Bergen *Hylotrupes* does not generally occur. Common to the attacks at these localities was the following: (i) the beetles left the constructions after 12–13 years; (ii) the infested beams were concealed, indicating that the oviposition took place before the houses were raised.

To explain an infestation of a new building, it seems necessary to examine the handling of the wooden materials before used in a house. Usually, the materials are stored for some months before being used for building purposes. At many sawmills and with most wood dealers this storage will take

place in special types of stock houses. An investigation of such houses in 1962, at 10 sawmills situated on the south-east coast, showed attacks in all buildings examined, some being severely infested. Beetles emerging from these constructions will probably deposit their eggs in the new materials stored during the summer. There is, therefore, reason to assume that eggs or smaller larvae are present when the materials reach the construction site. In this way *Hylotrupes* may be introduced to new areas and frequency of infestations will increase inside its range. The problem has also been dealt with in Denmark (Wichmand 1963).

THE ABUNDANCE IN SOME DISTRICTS

Inside the distribution area of a species there may be favourable zones where a high level of abundance is maintained. The frequency of infested buildings may give a picture of the abundance of *Hylotrupes* in an area.

Previous investigations (Bakke 1960) have dealt with the geographical distribution of *Hylotrupes* in Norway, while the frequency of attacked buildings has not been examined.

Investigations of dwellings and other types of buildings from Telemark and Vest-Agder were therefore executed to get information on the abundance at different locations. In Sogn the main purpose was to make a comparison between the occurrence in dwellings of *Hylotrupes* and *Anobium punctatum* de Geer, and to study a possible connexion between the macroclimate and the geographical distribution of *Hylotrupes* (Knudsen 1967).

Houses have been investigated at the following localities: Telemark: Brevik, Eidanger, Gjerpen, Porsgrunn and Solum; Vest-Agder: Tveit (Fig. 2).

Material and methods

The houses examined in Eidanger and Tveit were sampled in some settlements, comparatively far apart inside the communities, as opposed to the other localities. The sampling of houses at these two locations was not as strictly carried out as at the others. The material from Eidanger and Tveit is, therefore, not as homogeneous as could be desired. Nevertheless, the results are given as the trend observed is similar to that in the rest of the investigated places.

The method used for sampling at the study plots in Telemark was similar to the one used in Sogn (Knudsen 1967). The investigation was carried out in the parts of settlements where the density of dwellings was highest. Houses were chosen so that most of the limited area was represented in the material. Between 20 and 30 per cent of the houses within the investigation area were examined at each locality.

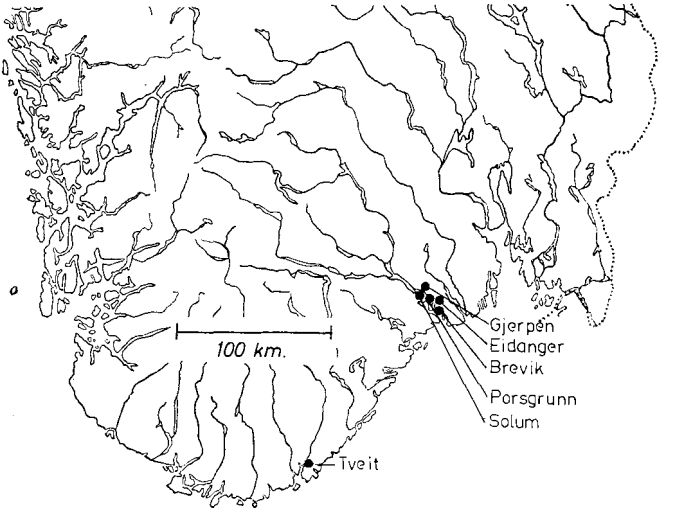

Fig. 2. The location of study plots.

The buildings were divided into five groups according to age:

Group	I:	5–10 years
”	II:	11–20 ”
”	III:	21–30 ”
”	IV:	31–50 ”
”	V:	Above 50 ”

Houses belonging to one or two of the age groups might be very frequent at the locality. This group or groups were, therefore, more often represented in the material (Table I).

The results include lofts examined — this part of houses seems to be best suited for comparison of attacks between localities. There is usually great similarity in the construction of lofts. Unpainted rafters are favourable to the beetles as to oviposition, and lofts are probably the part of the house where *Hylotrupes* has the best developmental possibilities.

To characterize the abundance of the species at each locality the frequency and extent of attack were used (Knudsen 1967).

Results

The material seemed to exhibit a general tendency: attacks in dwellings less than 10 years old were rare; *Hylotrupes* appeared to become particularly important when the houses were older than 20 years; and the frequency of attack increased with increasing age. The results from the individual lo-

TABLE I. Number of lofts examined which were infested by *H. bajulus* in houses at localities in Telemark and Vest-Agder, and total number of lofts infested in percentages in each age group

	Age of lofts in years												
	5–10		11–20		21–30		31–50		>50		Total		
Locality	No. exam.	No. inf.	No. exam.	No. inf.	No. exam.	No. inf.	No. exam.	No. inf.	No. exam.	No. inf.	No. exam.	No. inf.	% inf.
Brevik	8	2	9	2	7	6	17	12	9	3	50	25	50
Eidanger	10	—	38	4	14	7	22	12	8	7	92	30	33
Gjerpen	8	—	11	2	6	3	18	16	6	6	49	27	55
Porsgrunn	9	1	6	—	9	2	16	10	14	11	54	24	44
Solum	10	—	10	1	7	4	17	6	6	4	50	15	30
Tveit	7	—	9	3	8	2	11	6	34	24	69	35	51
Total	52	3	83	12	51	24	101	62	77	55	364	156	43
Total number %	6		14		47		61		71				

TABLE II. Infested lofts grouped according to location and extent of damage

Locality	Extent of damage: Slight %	Moderate %	Severe %
Brevik	71	25	4
Gjerpen	73	23	4
Porsgrunn	88	8	4
Solum	80	20	—

calities showed a similar trend (Table I). In Brevik there were few attacks in houses over 50 years old, when compared to the other localities, but the total frequency of attack in Brevik was rather high. The relative low frequency of attack in Eidanger may be explained by a certain predominance of new houses in the material (Table I).

The attacks at some of the localities were graded, and the extent of damage was generally slight or moderate. The results did not show any considerable differences between the localities (Table II).

An investigation of barns and storage huts in Tveit indicated that this kind of building is earlier and more frequently infested (Table III). The attacks were usually found in roofs and outer walls, both in bearing constructions and panelling; in walls the most severe attacks occurred on the south side of the buildings.

TABLE III. Number of buildings[1] examined which were infested by *H. bajulus* in Tveit

	Age of buildings in years: 5–10	11–20	21–30	31–50	>50	Total
No. examined	8	9	16	7	26	66
No. infested	2	8	13	7	25	55

[1] Storage huts, barns etc.

DISCUSSION

At present the problem of the limited geographical distribution of *Hylotrupes* cannot be given a satisfactory explanation. In West Norway there are reasons to assume that low temperatures at the coast limit the species to the inner part of the fiords (Knudsen 1967), though the distribution in the eastern districts of the country cannot be explained by means of temperature differences.

In Agder, apparently, the distribution along the coast is conditional on the climate. The increasing occurrence of *A. punctatum* in outer walls of

buildings situated outside the distribution area of *Hylotrupes* supports this assumption. Previous knowledge of the temperature preference of the two species also confirms a probable relation between climate and distribution (Steiner 1937, Schuch 1938, Becker 1943).

The instances of attacks described from Oslo, Sandefjord, Stavanger and Bergen demonstrate that *Hylotrupes* may complete its life cycle outside the present distribution area. At Oslo and Sandefjord, a re-infestation has probably taken place as small larvae were found in the constructions. In the attacks in Stavanger and Bergen a few *Hylotrupes* adults appeared, but there was no sign of young larvae in the beams. This observed difference between the eastern and western locations may be due to various factors. Among others the following are of special importance: the original number of larvae which entered the house; the period between infestation and discovery of the attacks; any possible differences in developmental conditions as to climate or nutrition. However, the information is not sufficient to suggest that climate is the determining factor in this case.

The five locations in Telemark and the one at Tveit are situated at each end of the distribution area along the coast (Fig. 2). The abundance seems to be of similar extent in these districts (Table I). It was suggested earlier that the frequency of attack decreased considerably in the western part of the distribution area.

The frequency of attack was found to be higher in Sweden than in Norway. The Swedish results also showed a decreasing frequency of attack in the group of houses over 50 years old (Butovitsch 1951), similar to that found in Brevik. This decrease may be due to the great number of houses of rather advanced age in the material of the investigation in Sweden. Often the construction in very old buildings shows slight damage caused by an infestation which has ceased after a few years because of scarcity of essential nourishment.

A current problem in recent years has been whether the occurrence of the species is increasing or not. The total areas of distribution have probably not increased considerably in this century. About a hundred years ago *Hylotrupes* already occurred in Telemark and in the northern part of Møre (Siebke 1875), locations which are far apart. However, inside *Hylotrupes*-localities the species seems to be spreading to an increasing extent.

SUMMARY

The investigations on the geographical distribution of *Hylotrupes bajulus* L. in Norway have been carried out more methodically in the last 10 years than formerly. Detailed information is now available about its occurrence in different parts of the country.

Hylotrupes occurs in a widely distributed area, extending from the inner parts of Telemark along the coast of Agder to Kristiansand. In West Norway the distribution is limited to the middle and inner parts of the fiords. In addition there are some *Hylotrupes*-localities outside these continuous areas. In Central and Northern Norway the species is not distributed.

Dwelling houses and other types of buildings were examined. About 50 per cent of the settlements were infested at some locations.

At the present time this limited distribution cannot be satisfactorily explained. *Hylotrupes* is not considered to have increased its range during this century.

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Polydesmus angustus Latzel 1884, (Diplopoda), New to Norway

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(Received 18 October 1967.)

Near Alvøen, HOy: Laksevåg, ca 20 km west of Bergen, on 28.5. and 19.9. 1967 I found 12♂♂ and 7♀♀ of a, to Norway, new species of Polydesmidae, *Polydesmus angustus* Latzel.

The biotope faces west and is of high humidity. The vegetation is dominated by *Betula odorata* Bechst, *Corylus avellana* L., *Rosa* sp., and oak and beech.

On 28.5. the animals were found among leaf foerna, chiefly oak and beech leaves, while those collected on 19.9. were concentrated under stones.

The figures below show the maximum and the minimum measurements:

8♂♂	taken	28.5.	Length	17.4–20.0	mm;	Width	1.8–2.1 mm
4♂♂	"	19.9.	"	14.0–21.4	"	"	1.4–2.2 "
7♀♀	"	19.9.	"	7.6–16.6	"	"	1.4–2.8 "

General appearance: head light brown, darker at the bases of the antennae, antennae red-brown; otherwise, dorsally shining brown, ventrally almost grey-yellow.

The metazonites are laterally pronounced from the thirteenth joint into teeth-like processes pointing backwards.

Fig. 1 shows the gonopods which differ from the gonopods of the allied species *P.complanatus* (L.) presented in Fig. 2.

The distal part of tibiotarsus is bent, shorter than the proximal part, and armed with a subapical tooth.

Contrary to *P.complanatus* the femur part is distinctly pronounced and the solenomerite is apically pointed and diverging from tibiotarsus. Verhoeff (1893) divided *P.complanatus* (L.) into two species with mainly different ranges. He kept the Linnean designation *P.complanatus* for the species distributed in Western Europe. The species with an Eastern distribution he named *P.illyricus*. Von Porath, however, had already, in 1870, used the name *P.complanatus* (L.) for the eastern species, which occurs in Sweden.

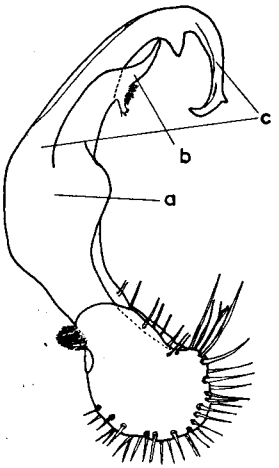

Fig. 1. *Polydesmus angustus* Latzel, from Alvøen, gonopod. a. The femur part. b. The solenomerite. c. The tibiotarsus.

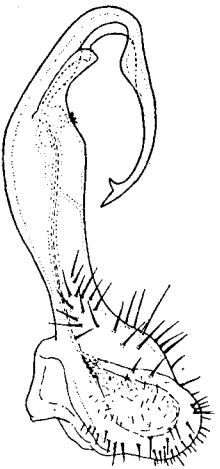

Fig. 2. *Polydesmus complanatus* (L.) from Skåne (Sweden), gonopod.From Lohmander (1925).

Lohmander (1925) points out that the drawing in von Porath's work concerns the eastern species. The Linnaean designation must therefore be retained for this species. Lohmander gives the western species the name *Polydesmus verhoeffi*. He emphasizes at the same time that this species is mainly West-European and certainly does not occur in Scandinavia.

Schubart (1934) draws attention to the fact that *P.complanatus* var. *angustus* (Latzel 1884), from Normandy in France, is identical with *Polydesmus verhoeffi* Lohmander.

The valid name therefore will be *Polydesmus angustus* Latzel, and *P.verhoeffi* must be regarded as a junior synonym.

Polydesmus angustus Latzel occurs, according to Schubart (1934), in England, Scotland, Ireland, the Netherlands, Belgium, France and the northwestern part of Switzerland. In Germany it has been found as far east as Thuringia, where *P.complanatus* also occurs. *P.angustus* has been introduced in Mexico and have a synantropic distribution in North America.

I have examined the material of Polydesmidae (leg. et det. Verhoeff), at the Zoological Museum, University of Bergen which includes *P.angustus* Latzel (= *P.complanatus* Verhoeff) from Baden and *P.complanatus* (L.) (= *P.illyricus* Verhoeff) from Austria. These specimens agree with the above descriptions and Figures. *P.angustus* has been found neither in Denmark nor in Sweden.

During my investigations in Hordaland and the northern parts of Rogaland I have not found any *P.complanatus*.

Von Porath (1887) has collected *P.complanatus* in the Botanical Garden, Oslo. According to Ellingsen (1891) it has been found Os: near Lillehammer; TEy: Bamble, Herre; TEi: Hjartdal, Sauland; Lårdal, Trisæt and AAy: Grimstad (♀).

The same author mentions (1896) Os: Ringebu, Tromsnes and (1903) Os: Sør Aurdal, Hedalen On: Nordre Fron; Bø: Krødsherad and Ø: Hvaler. Storm (1898) reports *P.complanatus* from STi: Trondheim and STy: Stadsbygd. Strand (1910) indicates Ø: Idd, Kornsjø and HEn: Tynset, Brekkeseteren. The geographical divisions and the abbreviations of their names is in accordance with Strand (1943).

SUMMARY

Polydesmus angustus Latzel 1884, is reported new to Norway.

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Freude, H. Harde, K. W. und Lohse, G. A. Die Käfer Mitteleuropas. Bind 7. Clavicornia. (310 p.) Pris DM 48.—. 1967. Bind 9. Cerambycidae. (299 p.) Pris DM 45.—. 1967. Goecke & Evers Verlag, Krefeld.

Med disse bind er fire av de planlagte elleve utkommet. Arbeidet er fordelt på en rekke spesialister, bl. a. K. Spornraft for Nitidulidae, G. A. Lohse for Cryptophagidae og Cisidae, A. v. Peez for Lathridiidae, H. Fürsch for Coccinellidae, K. W. Harde for Cerambycidae og K. H. Mohr for Chrysomelidae.

Som det tidligere utkomne bind 4 består også disse bind av mer eller mindre omfattende bestemmelsestabeller og i stor utstrekning opplysninger om funnforhold samt omrisstegning av en representant for de enkelte slekter. Men det som er av særlig interesse, og som også de nordiske coleopterologer vil ha stor nytte av, er de mange, og i stor utstrekning originale, detaljtegninger, særlig av genitaliene.

Under *Longitarsus* har Mohr *plantagomaritimus* Doll. og *kutscherae* Rye som former av *melanocephalus* Deg. med bemerkning om at noen forfattere regner dem som egne arter. Men hvorfor har han ikke tegnet genitaliene av disse to formene, men bare av *melanocephalus* til tross for at alle tre har forskjellig aedeagus, som jo støtter oppfatningen av at det dreier seg om egne arter?

For *Phyllodecta atrovirens* Corn. har Mohr to forskjellige tegninger av aedeagus, med bemerkning om at den ene er slik som Palmén har tegnet den. Det er jo denne tegning som viser det normale organ hos *atrovirens*.

Andreas Strand

Mandahl-Barth, G. 1967. Dyreliv i skog og mark — den lavere fauna. Norsk utgave ved konservator Albert Lillehammer. J. W. Cappelens Forlag, Oslo. (194 p. 686 figurer.)

I de siste årene er det kommet på det norske markedet en rekke bøker som presenterer forskjellige dyregrupper med fargeillustrasjoner og en kortfattet tekst. Dette er viktige bidrag til å øke interessen for dyreriket hos nye grupper av folk og dermed svært positivt sett fra et zoologisk synspunkt.

Denne boken er utarbeidet i Danmark, og fargetegningene er utført av Henning Anthon. Tegningene, som utgjør en vesentlig del av boken, er utmerkede og vil være til stor hjelp for den som vil orientere seg i skogsfaunaen.

Den norske teksten følger i hovedtrekkene den danske. Enkelte danske plantenavn, som f.eks. rødgran, er også med i den norske utgaven (s. 151) i stedet for det norske navnet gran.

Den norske oversetteren har forbedret boken ved å foreta en mer detaljert systematisk oppdeling av dyregruppene og ved å innføre authornavn etter de vitenskapelige navnene. Denne oppgaven har han løst på en god måte selv om det kan pekes på en del små feil. *Coleophora laricella* er feilplasert under Psychidae (s. 127) og authornavnene er uteglemt hos to arter (s. 127 og s. 113). Oversetteren har også korrigert en del av de vitenskapelige navnene for å gjøre dem mer i pakt med de som vanligvis nyttes i dag. Han burde da også ha forandret *Chermes* til *Sacchiphantes* og *Cnaphalodes* til *Adelges* (s. 176) og gjennomført forandringer av *Evetria* til *Rhyacionia* og *Lyda* til *Acantholyda*. Nå står det forskjellige slektsnavn for samme arten (s.s. 115 og 177, 157 og 177).

Norske navn er nyttet for flere av artene, men sløyfet for mange arter som i lengre tid har hatt et godt norsk navn, f.eks. *Dioryctria abietélla* Schiff. — grankonglemøll (s. 176), *Evétria resinélla* L. — kvaevikler (s. 177) og *Eucósma tedélla* Clerck. — granbarvikler (s. 176).

Disse innvendingene er av underordnet betydning for de grupper av folk boken i første rekke er laget for. Den vil være av stor betydning for alle som skal skaffe seg en oversikt over virvelløse dyregrupper i skog og mark og egner seg utmerket som hjelpebok for alle zoologistudenter.

Alf Bakke

Lautouche, Y., Raymond, P. og Rostand, J. 1967. Sommerfugler — europeiske arter. Til norsk ved Nils Knaben. (160 p.) Fredhøis Forlag, Oslo. Pris kr. 7.—.

Utvalget av populærvitenskapelige bøker i entomologi er meget begrenset på norsk, og nye bidrag imøtesees med glede. Denne lille boken gir en orientering om de vanligste europeiske sommerfugler, og er en nyttig innføring i denne omfattende insektorden. Innledningsvis finner man en kortfattet, men dekkende, beskrivelse av de viktigste trekk ved sommerfuglenes biologi. Derpå følger en beskrivelse av litt over to hundre forskjellige sommerfugler, vesentlig Macrolepidoptera. Omtrent seksti av disse artene er ikke funnet i Norge, og en del av de andre er sjeldne hos oss. Mange ville kanskje foretrekke at det var lagt større vekt på norske arter, men oversetteren har av tekniske grunner vært bundet til originalens utvalg. I enkelte tilfelle fører dette til at vanlige norske arter er utelatt, mens en rekke beslektede arter, som ikke fins hos oss, er beskrevet. For de artene som fins i Norge kunne det vært ønskelig med en kort beskrivelse av deres utbredelse her i landet. Dyrenes størrelse er desverre ikke nevnt for alle arter.

Til tross for bokens rimelige pris er samtlige arter illustrert i farger. Figurene er ikke alltid helt klare, men i de fleste tilfelle har man fått frem viktige kjennetegn. Et avsluttende kapittel om fangst og montering av sommerfugler vil være nyttig for en som vil starte en samling. Det er å håpe at boken vil stimulere leseren til videre studier av sommerfugler.

Lauritz Sømme

Clark, L. R. Geier, P. W., Hughes, R. D., and Morris, R. F. 1967. The ecology of insect populations in theory and practice. — Methuen & Co. Ltd., London (232 p.). Pris kr. 52.00.

Denne boka er i følgje forordet ein freistnad på å summere opp kor ein står i dag når det gjeld å forstå populasjonsdynamikken hos insekt og dei økologiske sider av kampen mot skadedyr.

Heilt sentralt i forfattarane sitt eige bidrag til denne forståinga står omgrepet «livssystem» ('life system'). Med eit livssystem meiner dei ein populasjon saman med dei faktorar i økosystemet som avgjer eksistensen, storleiken og utviklinga til populasjonen. I praksis vil det seie dei biotiske og abiotiske faktorane ein kan sjå og helst også måle verknaden av.

Over halvparten av boka er nytta til eit kapittel som ved hjelp av eksempel skal vise korleis livssystem kan funksjonere. Her er mange kjende populasjonsgranskingar tatt opp til analyse, mellom anna Nicholson's kjende arbeid med fluearten *Lucilia cuprina*.

Eit kortfatta, men svært opplysande og velbalansert oversyn over dei mest kjende teoriar i populasjonsdynamikken er også tatt med.

Boka er velgjerande konsis og klar i framstillinga av stoffet. Den er utan tvil eit vektig innlegg i dei teoretiske drøftingane i populasjonsdynamikken. Likevel har ho truleg størst verde på grunn av dei idear og impulase ho kann gi til alle som driv med økologisk feltarbeid med insektpopulasjonar.

Gudmund Taksdal

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Eksempler:

Løken, A. 1964. Social wasps in Norway (Hymenoptera, Vespidae). *Norsk ent. Tidsskr.* 12: 195–218.

Schwarts, R. J. 1955. *The complete dictionary of abbreviations.* T. Y. Crowell Co., New York. (211 p.).

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Det henstilles til forfatterne at de ved angivelse av den geografiske utbredelse av norske arter benytter den inndeling i faunistiske områder som er utarbeidet av A. Strand, 1943. *Norsk ent. Tidsskr.* 6: 208–224.

Tilføyelser eller *rettelser* i korrekturen, som belaster trykningskontoen uforholdsmessig, vil bli debitert forfatteren. Forfatteren får 75 særtrykk gratis. Bestilling på større antall må innsendes sammen med korrekturen.

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ser sin hovedoppgave i å fremme det entomologiske studium i Norge, og danne et bindeledd mellom de interesserte. Søknad om opptagelse i foreningen sendes formannen. Medlemskontingenten er for tiden kr. 20.— pr. år. Medlemmer får tidsskriftet fritt tilsendt.

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SÆRTRYKK OG AVHANDLINGER TILSALGS FRA N.E.F.

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E. SUNDT: Revision of the Fenno-Scandian species of the genus *Acrotrichis* Motsch. Norsk ent. Tidsskr. 10, 1958. Kr. 4.—.

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