

The Heteroptera fauna of Korshage, Zealand, II. A comparison July-August of the fauna of the herb stratum.

By
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I. Introduction.

My previous paper described the late summer aspect of the Heteropterous fauna of Korshage (Böcher 1967). In the Addendum of that paper I briefly mentioned the present investigation, which is attempting a comparison, confined to the herb stratum, between the bug faunas of July and August 1966.

Concerning situation, physiography and plant communities of the study area, see Böcher 1967. There is, however, a single correction. In the present paper the term "Carex dune grassland" is restricted to the very uniform, strongly *Carex arenaria*-dominated vegetation in the north-western part of the area (cf. Böcher 1967, pp. 43, 55, 56). The remainder of what was formerly denoted "Carex dune grassland" is now referred to as "Grey dune grassland", as it is always situated at the margins of the typical grey dune. A survey of the division into plant communities is presented in Table 1; the numbering differs a little from that used in 1967.

II. Methods etc.

The method of collection was sweeping. The unit sample was 50 strokes, but this is not strictly comparable to the samples from 1963 and 1965 because a somewhat smaller net (28 cm diameter) was used in 1966. Just as in the previous investigation (where this was not pointed out) the main guide for sampling was that every plant community should be equally well represented, relative both to the area it is covering and to its diversity. Accordingly, e.g. the "dune pasture and swamp" (3) is clearly overrepresented in rela-

tion to area, whereas the "Carex dune grassland" (4 d) is under-represented — due to the heterogeneity of the former and the homogeneity of the latter. For further information about the sampling procedure and for a short discussion on the value of sweeping, see Böcher 1967 p. 29 ff.

The samples were taken during two periods, viz. 10.—29. VII and 17.—28. VIII. Contrary to the summers 1963 and 1965 the summer of 1966 was relatively sunny, dry and warm. Sampling was performed during the interval 9³⁰ A.M. to 4³⁰ P.M. and during fairly uniform weather conditions, i.e. temperatures about 20° C, light to moderate breeze, more or less bright sunshine. Conditions were particularly constant during the August-period. Detailed information on weather conditions etc., and the yield of each sample is available on request.

III. Results.

Tables 2 and 3 give, for July and August respectively, the total caught, the average-catch per sample, the percentage of total, and the percentage of samples in which the species occurred, for each species of Heteroptera. The few samples from the beach (1) and the heath (5) are not included, because sweeping in both places is

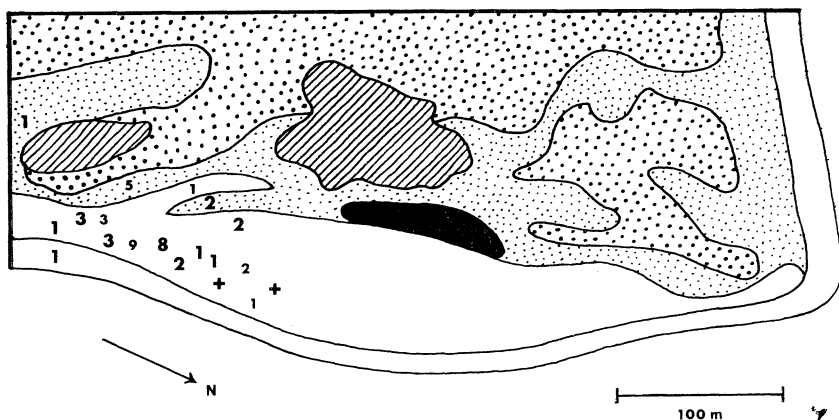


Fig. 1. Map sketch of the study-area at Korshage showing the finds of *Nabis brevis* Sz.. Small figures: 1963, large figures: 1966; crosses stand for finds from 1966 outside the quantitative samples. — The major plant communities are roughly indicated: without signature = beach and green dune, black = dune pasture and swamp, small dots = dune grassland, larger dots = dune heath, hatched = dune scrub (cf. Böcher 1967, Fig. 1).

rather difficult and not quite comparable to when practised in the other plant communities; the heath is devoid of a real herb stratum. Moreover, the bug faunas of these two communities are so distinctive from the fauna of the remainder that they must be treated separately.

Evidently the Heteropterous fauna had changed considerably from July to August. Perhaps the most conspicuous difference is the mean number per sample, namely in July 69.0 ($\pm 79.3^*$), median: 40/sample, range: 9—364/sample) contrasted with 23 (± 14.5 , median: 20/sample, range: 1—87/sample) in August**).

In July *Cymus glandicolor* Hahn and *Plagiognathus chrysanthemi* (Wff.) were the strongly dominant and constant species, whereas in August they were replaced by *Phytocoris varipes* Boh. and *Notostira elongata* (Geoffr.) (cf. Böcher 1967). The fauna was richer in July (52 spp.) than in August (38 spp.) but only 28 species were caught both months. For an explanation of the terms "dominancy" and "constancy" see Böcher 1967, pp. 35, 36.

In order to look at the differences in detail the Tables 4—13 were prepared, comprising a July—August comparison for each of the plant communities.

In the green dune communities (2) the mean number per sample was virtually unchanged from July to August and so was the number of species in each community, even though the composition and relative frequency of the species had been much altered. Only about one third of the species was in common to both months.

In the "dune pasture and swamp" (3) the yield per sample in August only amounted to 25 % of that in July, and there were more species in the latter month. The large numbers in July were chiefly due to two species, namely *Plagiognathus chrysanthemi* and *Cymus glandicolor*.

Even greater differences were found in the "dune grassland" communities (4). The catchings in August only constituted 28 % (4 a), 26 % (4 b), 23 % (4 c) and 7 % (4 d), respectively, of those in July. Again, the dissimilarity is first and foremost caused by the early abundance of *Plagiognathus* (especially 4 a

*) Standard deviation.

***) That there were taken six additional samples from the green dune communities during August introduces a bias into this comparison. Otherwise the number of samples is corresponding July—August within each community.

and 4 b) and *Cymus*, the latter to a remarkable degree in 4 d. *Nysius thymi* (Wff.), too, contributed to the high figures from July in 4, especially in 4 b. — In the “grey dune grassland” (4 c) the number of species in August was less than half the number in July; changes were slight in the other grassland communities. The grey dune grassland has a somewhat ephemeral character, flourishing in early summer, largely withered already in the beginning of August. This accounts for the serious decline in the Heteropterous population of this community during the summer.

The figures from the *Atriplex*-vegetation of the beach (1) are quite another order of magnitude than those coming from the other plant communities. They are, however, merely based on half a sample each month, so not too much reliance should be placed in the values. The composition of the fauna also greatly deviates from the other communities, strongly dominated as it is by *Piesma quadratum* (Fieb.), *Orthotylus flavosparus* (Shlbg.) (practically all the unidentified “Miridae spp. juv.” no doubt belong to this species) and *Lygus maritimus* Wagn.

Species composition was also entirely differing in the dune heath (5) where *Orthotylus ericetorum* (Fall.), *Nysius helveticus* (H.S.), *Scolopostethus decoratus* (Hahn) and *Nabis ericetorum* Sz. were the prominent species (cf. Böcher 1967, p. 45). In the heath the number of individuals per sample increased from July to August.

It is possible to divide the species into the following groupings, comparing their occurrence and frequency in July and August.

A. Species, the immature stages of which are living and feeding on the *Atriplex*-vegetation of the beach, from which they migrate as adults to the other plant communities during August.

This applies to *Piesma quadratum* (Fieb.), *Orthotylus flavosparus* (Shlbg.), and *Lygus maritimus* Wagn.

Elsewhere in Europe the three species complete two generations a year (Krczal and Völk 1956, Southwood and Leston 1959, Boness 1963). From the present figures it is, however, not possible to decide whether this is the case at Korshage. The proportion of adults rose (from 6 % to 72 %, 6 % to 79 %, and 17 % to 75 %, respectively) and the total of individuals fell on the host-plants from July to August. This seems to indicate that a second generation had not yet started by August the 28th.

Migration was most marked in *Lygus maritimus* which was found throughout the Korshage-area in August; less so in *Piesma quadratum*, and even less in *Orthotylus flavosparsus*. But *Piesma* and *Orthotylus* commenced migration already in July.

B. Species decreasing in number during July—August.

Most of the species decreased in number (or eventually completely disappeared — see C) during the space of time elapsed between the periods studied. The decrease is undoubtedly due to natural mortality as the season proceeds, many species having completed their reproductive cycle before the second sampling period. The numbers of the following species fell more or less markedly:

Eurygaster testudinaria (Geoffr.), *Dolycoris baccarum* (L.), *Myrmus miriformis* (Fall.), *Nysius thymi* (Wff.), *Cymus glandicolor* Hahn, *Nabis flavomarginatus* Sz., *Megalocoleus molliculus* (Fall.) and *Plagiognathus chrysanthemi* (Wff.)

During July *Eurygaster testudinaria* was exclusively found as nymphal instars; the two specimens from August were adults. As to *Dolycoris baccarum*, 8 % of the catching in July were adults, against 75 % in August.

The decline was most pronounced in *Cymus*, *Megalocoleus* and *Plagiognathus* which were on an average reduced by more than ninety percent per sample (22.9—1.4/sample, 1.9—0.1/sample, 17.5—0.6/sample respectively).

Cymus glandicolor shows an interesting bi-centric disposition in the area: astonishing high numbers were caught in the "Carex dune grassland" (4 d) but a second centre is constituted by the "dune pasture and swamp" (3). The species feeds exclusively on sedges (Southwood and Leston 1959) and this fact offers the explanation. In most of the area the food-plant must be *Carex arenaria* which is especially abundant and luxuriant in 4 d. However, other species of sedges are met with in 3 — namely *Carex nigra*, a dominant of that community, and *Carex panicea* (cf. Table 1). In July merely 8 % of the catch were adults, which made up 75 % in August.

Although nearly 80 % of the *Megalocoleus molliculus* caught during July were nymphs, reproduction evidently was absolutely completed by the middle of August and the adults were dying off, as only 4 adult specimens were taken during the latter period.

Regarding *Plagiognathus chrysanthemi* the large numbers were

found in the fairly damp communities, viz. 3, 4 a and 4 b; nymphs were only taken during July and exclusively in 3 and 4 a (10 % and 4 %, respectively) so these communities may represent centres of dispersal.

Myrmus miriformis only decreased from average 2.9/sample in July to 1.2/sample in August. It was full-grown in the latter month, whereas 11 % were immature in July. *Myrmus* showed a bi-centric distribution, similar to that of *Cymus* but less pronounced, with one centre in the humid part of the area (3) and another in the "Carex dune grassland" (4 d), in which a relatively large number was taken in July (cf. Böcher 1967 p. 55).

In *Nysius thymi* the mean number per sample dropped by about 80 % (from 4.9 to 1.0 per sample) and the percentage of nymphs decreased from 17 to zero. Just as in the late summers of 1963 and 1965 (Böcher 1967, p. 43), *Nysius thymi* had its maximum density in the "dune slack grassland" (4 b) during both July and August 1966, but it was frequent also in the other grassland communities.

Nabis flavomarginatus was fully matured already in the middle of July; none of the characteristic later nymphal instars (Southwood and Fewkes 1961) were taken. Contrary to the other species of *Nabis* s. str. in the area which hibernate as adults, *N. flavomarginatus* overwinters in the egg-stage (Southwood and Leston 1959). This allows it to become adult one month earlier than these, and it persists rather frequently in August (decreasing average about 50 % per sample).

C. Species disappearing completely during July—August.

This group merely carries the tendency met with in B a step further; the life-stories of the species were entirely terminated before the second sampling period in mid-August, and no immature stages were caught. This is true for *Derephysia foliacea* (Fall.), *Orthocephalus coriaceus* (F.), *Orthocephalus saltator* (Hahn), *Globiceps fulvicollis cruciatus* Reut., *Calocoris norvegicus* (Gmel.), *Lepopterna dolabrata* (L), and presumably also for *Lopus decolor* (Fall.) and *Capsus ater* (L.) of which only a few specimens were taken. *Calocoris norvegicus* was taken once in August, but not in a sample.

Regarding the two species of *Orthocephalus*, they act as "vicariant" species in the area, *O. coriaceus* practically confined to the

“dune pasture and swamp” (3) and *O. saltator* preferring the drier habitats, especially the “grey dune grassland” (4 c); the two species overlap in 4 a.

That no *Stenodema* was caught in the August-samples may be accidental as the *Stenodema* spp. on the whole are remarkably sparse in the Korshage area (cf. Böcher 1967).

D. *Species relatively unchanged in number July—August.*

This applies to *Aelia acuminata* (L.), *Chorosoma schillingi* (Schum.), *Ischnodemus sabuleti* (Fall.), *Nabis pseudoferus* Rem., *Nabis brevis* Sz., *Nabis ericetorum* Sz., and *Adelphocoris lineolatus* (Gz.)

Regarding *Aelia acuminata* the adults present in July (14 %; 81 % in August) no doubt have passed the winter in that stage (the same is true for *Dolycoris baccarum*; Jensen-Haarup 1912, Southwood and Leston 1959).

Chorosoma schillingi reached complete maturity in August against 19 % nymphs in July.

In *Ischnodemus sabuleti* the percentage of nymphs of the total catching merely declined from 31 % in July to 16 % in August; this might be related to the overlapping generations (Tischler 1960). The figures, however, are not reliable because sweeping is not fit for this species: only a small and inconsistent portion is caught of the sometimes huge assemblages of individuals on the lower parts, preferably in the leaf sheaths, of the host plants, *Elymus arenarius* and *Ammophila arenaria* (cf. Böcher 1967, pp. 39, 40).

During July the three species of *Nabis*, *N. pseudoferus*, *N. brevis* and *N. ericetorum* were present practically exclusively as immature stages. Due to their red tinge it is possible to distinguish nymphs of *N. ericetorum*, but immature *N. pseudoferus* and *N. brevis* (and possibly a few *N. ferus* which is exceedingly rare in the area) have to be pooled under the heading “*Nabis* spp. juv.”. During August most of the individuals reached maturity (59 % of *N. ericetorum*, 75 % of *N. pseudoferus* + *N. brevis*).

Nabis brevis deserves special mentioning. In 1963 this species showed a peculiar distribution, being confined to the south-eastern part of the study area, and it was attempted to explain this by a recent immigration from the south in connexion with the limited dispersal powers of the species (Böcher 1967, p. 54). Fig. 1 shows

the disposition in the area of all the finds from 1963 (small figures) and 1966 (large figures, the single specimen from 1965 included). It is seen that the species had advanced (if the interpretation is correct) no further during the three years.

Adelphocoris lineolatus had on the whole grown up from July (87 % juv.) to August (10 % juv.). In the latter month it appeared more widespread than in July, where it seemed confined to the "grey dune grassland" (4 c). Here *Trifolium* spp. and possibly *Lotus corniculatus* must be the food-plants.

E. Species increasing in number during July—August.

This is true for only five species, namely *Scolopostethus decoratus* (Hahn), *Lygus pratensis* (L.), *Orthops kalmi* (L.), *Phytocoris varipes* Boh., and *Notostira elongata* (Geoffr.)

Scolopostethus decoratus overwinters as an adult and it is unknown whether there are one or two generations a year (Southwood and Leston 1959). The present evidence seems to indicate two generations at Korshage, as nymphs were found both in July (45 %) and, more frequently (92 %), at the end of August. In 1965 a large number of nymphs were swept even later in the season (on 10. IX. — cf. Böcher 1967).

Lygus pratensis. In July only a single nymph most likely belonging to this species was taken. During August, however, adults were fairly frequent and found in as good as all the plant communities, possibly migrating into the area from outside.

In *Orthops kalmi* a number of nymphs together with a few adults were caught in some of the grassland communities (4 c, 4 d) during August. Only a single adult, presumably of the overwintered generation, was found in July.

Phytocoris varipes increased in number from average 1.1/sample in July to 3.8/sample in August, where it was the dominating species in most of the plant communities. The proportion of immature stages at the same time fell from 19 % to zero. It is difficult to explain the increase in the catching of this species during the season; perhaps the nymphs preferably stay near the base of the grasses where they would largely escape the sweep-net.

Notostira elongata is bivoltine (Woodward 1950) and of the 29 females caught in July only one belonged to the ochreous autumn generation, which made up 8 of the 9 females from August. The nymphs taken in July (47 %) may originate from both genera-

tions, whereas those caught in August (81 %) must belong to the autumn generation. The rise in number (from average 1.9/sample in July to 3.5/sample in August) may be due to a difference in frequency between the generations.

It might seem as if *Stygnocoris pedestris* (Fall.), of which merely five adult specimens were caught, should be placed in a group of its own — including species exclusively present in August. The species is, however, predominantly a ground dweller only occasionally ascending the vegetation, and this is especially true for the immature stages reigning supreme during July.

Concerning species not mentioned above, the apportionment of nymphs and adults was as follows.

	JULY		AUGUST	
	Nymphs	Adults	Nymphs	Adults
<i>Legnotus picipes</i> (Fall.)	1	4	—	2
<i>Sciocoris cursitans</i> (F.)	—	3	—	2
<i>Rhacognathus punctatus</i> (L.)	4	—	—	—
<i>Alydus calcaratus</i> (L.)	2	2	—	3
<i>Nysius helveticus</i> (H.S.)	6	19	—	13
<i>Anthocoris nemoralis</i> (F.)	2	1	6	7
<i>Orthotylus ericetorum</i>	47	1	1	9
<i>Polymerus brevicornis</i> (Reut.)	—	4	—	1
<i>Stenodema calcaratum</i> (Fall.)	5	—	—	+
<i>Stenodema laevigatum</i> (L.)	—	4	—	—

IV. Conclusions.

The fauna of Heteroptera changed considerably during summer, both in species composition and in the relative frequency of the species. It is accordingly possible to distinguish a “mid-summer aspect” and a “late-summer aspect” of the bug fauna inhabiting the herb stratum of Korshage, taking into account that the establishment of the former is based on the investigations of only one summer.

Leaving out the beach and the dune heath with their very distinct faunas, the mid-summer aspect is characterized by 1) the abundance of a few species, especially *Cymus glandicolor* and *Plagiognathus chrysanthemi*, which causes the number of individuals per sample to be on an average three times that in August; 2) the presence of some species (e.g. *Derephysia foliacea*, *Megalocoleus molliculus*, *Orthocephalus coriaceus*, *O. saltator*, *Calocoris*

norvegicus, *Leptopterna dolabrata*) which are entirely (or nearly so) absent in late summer. The fauna of the late summer is poorer in both species and individuals, being dominated by *Phytocoris varipes* and *Notostira elongata*.

When the Heteropterous fauna found in August 1966 is compared with the late summer fauna of 1963 (and 1965) (Böcher 1967) it will be noted that most of the conclusions arrived at in the previous paper are confirmed. But naturally there are differences, most of which may be due to the different weather conditions of the humid summers 1963, 1965 and the dry summer of 1966. Besides a number of smaller dissimilarities not worth mentioning, the following are more conspicuous. Three species, viz. *Stygnocoris pedestris*, *Polymerus brevicornis* and *Adelphocoris lineolatus*, were considerably more frequent during 1963 (+ 1965). *Adelphocoris* was dominating in some plant communities (3, 4 a, 4 b) where it was absent or playing an insignificant part in 1966. *Stygnocoris* was widespread in the area and a dominant in the heath, whereas a total of only five specimens were taken during 1966. On the other hand some species were more numerous in 1966 as compared with the previous years, namely *Aelia acuminata*, *Cymus glandicolor*, *Orthotylus flavosparsus*, *Lygus pratensis* and *Phytocoris varipes*. No absolute figures were obtained from the *Atriplex*-vegetation in 1963, but the numbers of *Piesma* and *Orthotylus* were clearly much lower than in 1966.

Concerning the "Heteroptera communities" proposed by Böcher (1967, p. 56) the distribution of the species in the area during July seems in some measure to justify their maintenance. The fauna of the "Carex dune grassland", however, must be included as a distinct "bug community" (cf. p. 289), characterized by the huge numbers of *Cymus glandicolor* and the frequency of *Myrmus miriformis*, especially during July (cf. Böcher 1967, p. 56). The "green dune bug community" should only comprise 2 a, 2 b and 2 c, as the fauna of the "grey dune grassland" has a peculiar character (see p. 292). During July many species were mainly or exclusively found here (*Dolycoris baccarum*, *Lopus decolor*, *Plagiognathus* sp., *Orthotylus saltator*, *Stenodema calcaratum*, *S. laevigatum*, *Trigonotylus ruficornis*), whereas in August the bug population was exceedingly sparse, dominated by *Chorosoma schillingi*, *Adelphocoris lineolatus* and *Nysius thymi*. Ground dwelling

species play an important part in this "bug community" (cf. Böcher 1967, pp. 44, 56).

Summary.

In the dune and heath area of Korshage, northern Zealand, the Heteropterous fauna of the herb stratum in July was compared with that in August on the basis of sweep-net collections. During July there were more species and the average density of bugs was three times higher than in August. The mid-summer fauna was characterized by the abundance of *Cymus glandicolor* Hahn and *Plagiognathus chrysanthemi* (Wff.) and by the presence of a number of forms (e.g. *Derephysia foliacea* (Fall.), *Orthocephalus saltator* (Hahn), *Calocoris norvegicus* (Gmel.), *Leptopterna dolabrata* (L.)) which, after having completed their life-cycles, disappeared entirely before the second sampling period in mid-August. The late-summer fauna, previously treated in detail (Böcher 1967), was dominated by *Phytocoris varipes* Boh. and *Notostira elongata* (Geoffr.).

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Table 1: — Plant communities of Korshage. Herb stratum.

Com- munity.	Vegetation.
	!! and ! indicate more or less dominating species. (Mosses and lichens are not included).
1. Beach.	<i>Atriplex litoralis</i> !!
2. Green dune.	
a. Outer green dune.	<i>Ammophila arenaria</i> !! <i>Festuca rubra</i> !! <i>Hieracium umbellatum</i> ! <i>Lathyrus maritimus</i> ! <i>Achillea millefolium</i> , <i>Agropyrum repens</i> , <i>Armeria maritima</i> , <i>Artemisia campestris</i> , <i>Campanula rotundifolia</i> , <i>Carex arenaria</i> , <i>Crambe maritima</i> , <i>Elymus arenarius</i> , <i>Galium verum</i> , <i>Jasione montana</i> , <i>Pimpinella saxifraga</i> , <i>Rumex thrysiflorus</i> , <i>Thalictrum minus</i> .
b. Mixed green dune.	<i>Festuca rubra</i> !! <i>Thalictrum minus</i> !! <i>Achillea millefolium</i> ! <i>Ammophila arenaria</i> ! <i>Carex arenaria</i> ! <i>Lathyrus maritimus</i> ! <i>Agropyrum repens</i> , <i>Artemisia campestris</i> , <i>Campanula rotundifolia</i> , <i>Deschampsia flexuosa</i> , <i>Elymus arenarius</i> , <i>Galium verum</i> , <i>Hieracium umbellatum</i> , <i>Jasione montana</i> , <i>Pimpinella saxifraga</i> , <i>Plantago maritima</i> , <i>Rhinanthus minor</i> , <i>Rumex thrysiflorus</i> .
c. Inner green dune.	<i>Ammophila arenaria</i> !! <i>Deschampsia flexuosa</i> !! <i>Achillea millefolium</i> ! <i>Anthoxanthum odoratum</i> ! <i>Campanula rotundifolia</i> ! <i>Carex arenaria</i> ! <i>Galium verum</i> ! <i>Hieracium umbellatum</i> ! <i>Pimpinella saxifraga</i> ! <i>Polypodium vulgare</i> ! <i>Artemisia campestris</i> , <i>Cerastium semidecandrum</i> , <i>Chamaenerium angustifolium</i> , <i>Festuca rubra</i> , <i>Gnaphalium arenarium</i> , <i>Jasione montana</i> , <i>Lathyrus maritimus</i> , <i>Rhinanthus minor</i> , <i>Rumex thrysiflorus</i> , <i>Solidago virga-aurea</i> , <i>Thalictrum minus</i> .
3. Dune pasture and swamp.	<i>Potentilla anserina</i> !! <i>Vicia cracca</i> !! <i>Agrostis tenuis</i> ! <i>Carex nigra</i> ! <i>Festuca rubra</i> ! <i>Holcus lanatus</i> ! <i>Lythrum salicaria</i> ! <i>Achillea millefolium</i> , <i>Anthoxanthum odoratum</i> , <i>Deschampsia flexuosa</i> , <i>Carex panicea</i> , <i>Cirsium palustre</i> , <i>Epilobium palustre</i> , <i>Galium uliginosum</i> , <i>Geranium sanguineum</i> , <i>Heleocharis palustris</i> , <i>Juncus articulatus</i> , <i>J. compressus</i> , <i>J. conglomeratus</i> , <i>Lathyrus montanus</i> , <i>Lycopus europaeus</i> , <i>Pimpinella saxifraga</i> , <i>Poa pratensis</i> , <i>Potentilla erecta</i> , <i>P. reptans</i> , <i>Ranunculus acer</i> , <i>Scirpus tabernaemontani</i> , <i>Stellaria graminea</i> , <i>Thalictrum minus</i> , <i>Trifolium repens</i> , <i>Veronica chamaedrys</i> .
4. Dune grassland.	
a. <i>Thalictrum</i> dune grassland.	<i>Pimpinella saxifraga</i> !! <i>Thalictrum minus</i> !! <i>Achillea millefolium</i> ! <i>Anthoxanthum odoratum</i> ! <i>Festuca rubra</i> ! <i>Geranium sanguineum</i> ! <i>Potentilla reptans</i> ! <i>Agrostis tenuis</i> , <i>Ammophila arenaria</i> , <i>Artemisia campestris</i> , <i>Campanula rotundifolia</i> , <i>Carex arenaria</i> , <i>Hieracium umbellatum</i> , <i>Hypochoeris maculata</i> , <i>Lotus corniculatus</i> , <i>Plantago lanceolata</i> , <i>Pulsatilla pratensis</i> , <i>Veronica chamaedrys</i> .
b. Dune slack grassland.	<i>Agrostis tenuis</i> ! <i>Armeria maritima</i> ! <i>Festuca rubra</i> ! <i>Pimpinella saxifraga</i> ! <i>Trifolium repens</i> ! <i>Achillea millefolium</i> , <i>Anthoxanthum odoratum</i> , <i>Carex arenaria</i> , <i>C. nigra</i> , <i>Lotus corniculatus</i> , <i>Plantago lanceolata</i> , <i>P. maritima</i> , <i>Potentilla reptans</i> , <i>Thalictrum minus</i> .
c. Grey dune grassland.	<i>Anthoxanthum odoratum</i> ! <i>Carex arenaria</i> ! <i>Corynephorus canescens</i> ! <i>Festuca ovina</i> ! <i>F. rubra</i> ! <i>Galium verum</i> ! <i>Hieracium umbellatum</i> ! <i>Pimpinella saxi-</i>

Table 1 continued.

fraga! Pulsatilla pratensis! Achillea millefolium, Agrostis tenuis, Armeria maritima, Artemisia campestris, Avena pratensis, Campanula rotundifolia, Geranium sanguineum, Gnaphalium arenarium, Hieracium pilosella, Hypochoeris maculata, Jasione montana, Lotus corniculatus, Plantago maritima, Polypodium vulgare, Thalictrum minus, Thymus serpyllum, Trifolium arvense, T. repens.

d. Carex dune grassland..

Carex arenaria!! Agrostis tenuis, Anthoxanthum odoratum, Armeria maritima, Avena pratensis, Campanula rotundifolia, Deschampsia flexuosa, Hieracium umbellatum, Pulsatilla pratensis, Thalictrum minus, Thymus serpyllum.

5. Dune heath.

Calluna vulgaris!! Empetrum nigrum! Deschampsia flexuosa, Salix repens, Vaccinium uliginosum.

Explanation to the Tables 2—13.

A cross (+) means that the species was taken by supplementary sweeping in the locality concerned, but not in a quantitative sample.

D = dominant, I = influent (the species is constituting more than 10 %, and 4—10 %, respectively, of the total of individuals caught from the plant community, or the plant communities, in question).

C = constant, Acs = accessory (the species is present in more than 50 %, and 25—50 %, respectively, of the samples in question).

The limits given for the mean number per sample are standard deviations.

Table 2. — Whole area. July. 40 samples.

	Individuals caught	Per sample	% of total	In % of samples
<i>Cymus glandicolor</i> Hahn	916	22.9	33.2 D	65 C
<i>Plagiognathus chrysanthemi</i> (Wff.)	700	17.5	25.4 D	70 C
<i>Nysius thymi</i> (Wff.)	196	4.9	7.1 I	45 Acs
<i>Myrmus miriformis</i> (Fall.)	116	2.9	4.2 I	55 C
<i>Nabis</i> spp. (juv.)	104	2.6	3.8	80 C
<i>Chorosoma schillingi</i> (Schum.) . . .	94	2.4	3.4	70 C
<i>Ischnodemus sabuleti</i> (Fall.)	91	2.3	3.3	28 Acs
<i>Notostira elongata</i> (Geoffr.)	77	1.9	2.8	68 C
<i>Megalocoleus molliculus</i> (Fall.) . . .	76	1.9	2.8	30 Acs
<i>Calocoris norvegicus</i> (Gmel.)	53	1.3	1.9	40 Acs
<i>Nabis flavomarginatus</i> Sz.	48	1.2	1.7	48 Acs
<i>Phytocoris varipes</i> Boh.	43	1.1	1.6	50 Acs
<i>Aelia acuminata</i> (L.)	37	.9	1.3	45 Acs
<i>Dolycoris baccarum</i> (L.)	24	.6	.9	38 Acs
<i>Adelphocoris lineolatus</i> (Gz.)	23	.6	.8	15
<i>Leptopterna dolabrata</i> (L.)	22	.6	.8	43 Acs
<i>Orthocephalus saltator</i> (Hahn)	19	.5	.7	15
<i>Eurygaster testudinaria</i> (Geoffr.) . .	15	.4	.5	10
<i>Derephysia foliacea</i> (Fall.)	13	.3	.5	20
<i>Globiceps fulvicollis</i> cruc. Reut. . . .	13	.3	.5	18
<i>Miridae</i> spp. (juv.)	11	.3	.4	15
<i>Orthocephalus coriaceus</i> (F.)	8	.2	.3	18
<i>Nabis pseudoferus</i> Rem.	7	.2	.3	13
<i>Legnotus picipes</i> (Fall.)	5	.1	.2	8
<i>Lopus decolor</i> (Fall.)	5	.1	.2	5
<i>Stenodema calcaratum</i> (Fall.)	5	.1	.2	5
<i>Alydus calcaratus</i> (L.)	4	.1	.1	10
<i>Stenodema laevigatum</i> (L.)	4	.1	.1	5
<i>Sciocoris cursitans</i> (F.)	3	.1	.1	8
<i>Capsus ater</i> (L.)	3	.1	.1	8
<i>Geocoris grylloides</i> (L.)	2	.1	.1	5
<i>Charagochilus gyllenhali</i> (Fall.) . .	2	.1	.1	5
Other species*)	20	—	.7	—
Total	2759	69.0	100.1	

*) Only one specimen was taken of each of the following species: *Eurydema oleracea* (L.), *Picromerus bidens* (L.), *Peritrechus nubilus* (Fall.), *Rhyparochromus pini* (L.), *Stygnocoris fuliginus* (Geoffr.), *Lygaeidae* sp. (juv.), *Piesma quadratum* (Fieb.), *Nabis ferus* (L.), *Nabis brevis* Sz., *Nabis ericetorum* Sz., *Anthocoris nemorum* (L.), *Tytthus pygmaeus* (Zett.), *Plagiognathus* sp. (*albipennis* group), *Strongylocoris leucocephalus* (L.), *Orthotyplus flavosparus* (Shlb.), *Lygus pratensis* (L.), *Orthops kalmi* (L.), *Polymerus unifasciatus* (F.), *Polymerus brevicornis* (Reut.), *Trigonotylus ruficornis* (Geoffr. in Fourcr.), *Monosynnumma bohemani* (Fall.) and *Pithanus maerkeli* (H.S.) were found but not in a sample.

Table 3. — Whole area. August. 46 samples.

	Individuals caught	Per sample	% of total	In % of samples
<i>Phytocoris varipes</i> Boh.	176	3.8	16.6 D	74 C
<i>Notostira elongata</i> (Geoffr.)	161	3.5	15.2 D	67 C
<i>Ischnodemus sabuleti</i> (Fall.)	89	1.9	8.4 I	28 Acs
<i>Chorosoma schillingi</i> (Schum.) ...	89	1.9	8.4 I	67 C
<i>Nabis pseudoferus</i> Rem.	66	1.4	6.2 I	46 Acs
<i>Cymus glandicolor</i> Hahn	64	1.4	6.1 I	15
<i>Myrmus miriformis</i> (Fall.)	60	1.2	5.7 I	48 Acs
<i>Nysius thymi</i> (Wff.)	44	1.0	4.2 I	26 Acs
<i>Nabis</i> spp. (juv.)	30	.7	2.8	37 Acs
<i>Plagiognathus chrysanthemii</i> (Wff.)	29	.6	2.7	22
<i>Lygus maritimus</i> Wagn.	29	.6	2.7	33 Acs
<i>Aelia acuminata</i> (L.)	26	.6	2.5	28 Acs
<i>Nabis flavomarginatus</i> Sz.	25	.5	2.4	43 Acs
<i>Lygus pratensis</i> (L.)	25	.5	2.4	30 Acs
<i>Nabis brevis</i> Sz.	23	.5	2.2	20
<i>Orthops kalmi</i> (L.)	20	.4	1.9	4
<i>Adelphocoris lineolatus</i> (Gz.)	20	.4	1.9	20
<i>Piesma quadratum</i> (Fieb.)	15	.3	1.4	15
<i>Miridae</i> spp. (juv.)	14	.3	1.3	22
<i>Nabis ericetorum</i> Sz.	12	.3	1.1	13
<i>Dolycoris baccarum</i> (L.)	8	.2	.8	13
<i>Stygnocoris pedestris</i> (Fall.)	5	.1	.5	9
<i>Megalocoleus molliculus</i> (Fall.) ...	4	.1	.4	7
<i>Orthotylus flavosparsus</i> (Shlb.) ..	4	.1	.4	7
<i>Polymerus brevicornis</i> (Reut.)	4	.1	.4	7
<i>Alydus calcaratus</i> (L.)	3	.1	.3	7
<i>Eurygaster testudinaria</i> (Geoffr.) ..	2	.0	.2	4
<i>Sciocoris cursitans</i> (F.)	2	.0	.2	4
<i>Anthocoris</i> spp. (juv.)	2	.0	.2	2
Other species*)	7	—	.7	—
Total	1058	23	100.2	

*) Only one specimen was taken of each of the following species: *Legnotus picipes* (Fall.), *Picromerus bidens* (L.), *Stygnocoris rusticus* (Fall.), *Berytinus crassipes* (H.S.), *Piesma capitatum* (Wff.), *Stalia major* (Costa), *Adelphocoris seticornis* (F.). *Calocoris norvegicus* (Gmel.) and *Stenodema calcaratum* (Fall.) were found, but not in a sample.

Table 4. — 1. Beach, ½ + ½ sample.

	JULY		AUGUST	
	Per sample	% of total	Per sample	% of total
<i>Eurydema oleracea</i> (L.)	+	—	—	—
<i>Piesma quadratum</i> (Fieb.)	1114	46.6 D	188	29.2 D
<i>Anthocoris nemoralis</i> (F.)	6	.03	26	4.1
<i>Orthotylus flavosparsus</i> (Shlb.)	64	2.8 (D)	310	48.6 D
<i>Lygus maritimus</i> Wagn	132	5.9	32	5.0
<i>Lygus pratensis</i> (L.)	—	—	2	.3
Miridae spp. (juv.)*	932	41.5	80	12.5
Total	2248	99.8	638	99.7

*) Practically all no doubt *Orthotylus flavosparsus* (Shlb.).

Table 5. — 2 a. Outer green dune. 6 + 9 samples.

	JULY		AUGUST	
	Per sample	% of total	Per sample	% of total
<i>Aelia acuminata</i> (L.)	.3	1.2	.2	.8
<i>Eurydema oleracea</i> (L.)	.1	.6	—	—
<i>Dolycoris baccarum</i> (L.)	—	—	.1	.4
<i>Pieromerus bidens</i> (L.)	—	—	.1	.4
<i>Myrmus miriformis</i> (Fall.)	1.8	6.5 C	.8	2.9
<i>Chorosoma schillingi</i> (Schum.)	2.3	8.3 C	2.2	8.2 C
<i>Ischnodemus sabuleti</i> (Fall.)	12.3	44.0 D C	8.4	31.1 D C
<i>Nysius thymi</i> (Wff.)	2	7.1	1.1	4.1
<i>Cymus glandicolor</i> Hahn	.3	1.2	—	—
<i>Berytinus crassipes</i> (H.S.)	—	—	.1	.4
<i>Piesma quadratum</i> (Fieb.)	—	—	.4	1.6
<i>Nabis flavomarginatus</i> Sz.	.3	1.2	.6	2.0 C
<i>Nabis pseudoferus</i> Rem.	—	—	2.2	8.2 C
<i>Nabis brevis</i> Sz.	—	—	.7	2.5
<i>Nabis</i> spp. (juv.)	1	3.6	.3	1.2
<i>Stalia major</i> (Costa)	—	—	.1	.4
<i>Megalocoleus molliculus</i> (Fall.)	.5	1.8	—	—
<i>Tytthus pygmaeus</i> (Zett.)	.1	.6	—	—
<i>Plagiognathus chrysanthemi</i> (Wff.)	.7	2.4	—	—
<i>Orthotylus flavosparsus</i> (Shlb.)	—	—	.2	.8
<i>Lygus maritimus</i> Wagn.	—	—	1.8	6.6 C
<i>Lygus pratensis</i> (L.)	—	—	.3	1.2
<i>Calocoris norvegicus</i> (Gmel.)	1.8	6.5 C	—	—
<i>Adelphocoris lineolatus</i> (Gz.)	—	—	.1	.4
<i>Phytocoris varipes</i> Boh.	.5	1.8	4.3	16.0 D C
<i>Capsus ater</i> (L.)	.1	.6	—	—
<i>Notostira elongata</i> (Geoffr.)	3.1	11.3 D C	2.9	10.6 D C
<i>Leptopterna dolabrata</i> (L.)	.3	1.2	—	—
Total	28	99.9	27.1	99.8
	(± 22.4)		(± 23.5)	

Table 6. — 2 b. Mixed green dune. 5 + 6 samples.

Legnotus picipes (Fall.) . . . . .	.6	2.1	+	—
Eurygaster testudinaria (Geoffr.) ..	—	—	.2	.7
Aelia acuminata (L.) . . . . .	.6	2.1	.2	.7
Dolycoris baccarum (L.) . . . . .	.4	1.4	—	—
Myrmus miriformis (Fall.) . . . . .	.8	2.8	1	3.9 C
Chorosoma schillingi (Schum.)	2.6	9.0 C	1.3	5.3
Ischnodemus sabuleti (Fall.) . . . .	.4	1.4	.2	.7
Nysius thymi (Wff.)	1	3.5 C	—	—
Stygnocoris pedestris (Fall.)	—	—	.2	.7
Cymus glandicolor Hahn	3.8	13.2 D	—	—
Piesma quadratum (Fieb.)	—	—	.8	3.3
Derephysia foliacea (Fall.) . . . . .	.6	2.1	—	—
Nabis flavomarginatus Sz.	1.4	4.9 C	.8	3.3 C
Nabis pseudoferus Rem. . . . .	.2	.7	3.2	12.5 D C
Nabis brevis Sz.	—	—	.3	1.3
Nabis ericetorum	—	—	.2	.7
Nabis spp. (juv.)	2.8	9.7 (C)	1.5	5.9 (C)
Megalocoleus molliculus (Fall.) . . .	1.8	6.2	.2	.7
Plagiognathus chrysanthemi (Wff.)	2.6	9.0	—	—
Orthocephalus saltator (Hahn) . . . .	.4	1.4	—	—
Lygus maritimus Wagn.	—	—	.5	2.0
Lygus pratensis (L.) . . . . .	.2	.7	1.2	4.6
Calocoris norvegicus (Gmel.)	5.4	18.7 D C	—	—
Phytocoris varipes Boh. . . . .	.4	1.4	8.3	32.9 D C
Capsus ater . . . . .	.2	.7	—	—
Notostira elongata (Geoffr.)	2.4	8.3 C	4.2	16.4 D C
Leptopterna dolabrata (L.) . . . . .	.2	.7	—	—
Miridae spp. (juv.)	—	—	.5	2.0
Total	28.8	100.0	25.2	100.2
	(± 14.2)		(± 8.9)	

Table 7. — 2 c. Inner green dune. 6 + 8 samples.

	JULY		AUGUST	
	Per sample	% of total	Per sample	% of total
<i>Legnotus picipes</i> (Fall.)	—	—	.1	.5
<i>Aelia acuminata</i> (L.)	1.2	4.3 C	.3	.9
<i>Picromerus bidens</i> (L.)	.2	.6	—	—
<i>Alydus calcaratus</i> (L.)	.3	1.2	—	—
<i>Myrmus miriformis</i> (Fall.)	1.8	6.8	.8	2.8
<i>Chorosoma schillingi</i> (Schum.)	4.8	17.9 D C	3.6	13.3 D C
<i>Ischnodemus sabuleti</i> (Fall.)	2.5	9.3 C	1.5	5.5 C
<i>Nysius thymi</i> (Wff.)	—	—	.3	.9
<i>Stygnocoris pedestris</i> (Fall.)	—	—	.4	1.4
<i>Cymus glandicolor</i> Hahn	3.8	14.2 D C	—	—
<i>Piesma quadratum</i> (Fieb.)	—	—	.6	2.3
<i>Derephysia foliacea</i> (Fall.)	.7	2.5 C	—	—
<i>Nabis flavomarginatus</i> Sz.	1.7	6.2	.5	1.8
<i>Nabis pseudoferus</i> Rem.	.3	1.2	1.1	4.1
<i>Nabis brevis</i> Sz.	—	—	1.6	6.0
<i>Nabis ericetorum</i> Sz.	—	—	.1	.5
<i>Nabis</i> spp. (juv.)	3.3	12.3 (D) (C)	1	3.7 (C)
<i>Plagiognathus chrysanthemi</i> (Wff.)	.3	1.2	—	—
<i>Strongylocoris leucocephalus</i> (L.)	.2	.6	—	—
<i>Orthocephalus saltator</i> (Hahn)	.3	1.2	—	—
<i>Globiceps fulvicollis</i> cruc. Reut.	.2	.6	—	—
<i>Orthotylus flavosparsus</i> (Shlbg.)	—	—	.3	.9
<i>Lygus maritimus</i> Wagn.	—	—	.1	.5
<i>Lygus pratensis</i> (L.)	—	—	.1	.5
<i>Polymerus brevicornis</i> (Reut.)	—	—	.3	.9
<i>Charagochilus gyllenhali</i> (Fall.)	.2	.6	—	—
<i>Adelphocoris lineolatus</i> (Gz.)	—	—	.8	.2
<i>Phytocoris varipes</i> Boh.	2.3	8.6 C	5	18.3 D C
<i>Notostira elongata</i> (Geoffr.)	2	7.4 C	8.5	31.2 D C
<i>Leptopterna dolabrata</i> (L.)	.3	1.2	—	—
<i>Miridae</i> spp. (juv.)	.5	1.9	.4	1.4
Total	27	99.8	27.3	100.2
	(± 8.3)		(± 9.3)	

Table 8. — 3. Dune pasture and swamp. 7 + 7 samples.

	JULY		AUGUST	
	Per sample	% of total	Per sample	% of total
<i>Eurygaster testudinaria</i> (Geoffr.) ..	2.1	1.7 C	.1	.5
<i>Sciocoris cursitans</i> (F.) .....	.1	.1	—	—
<i>Aelia acuminata</i> (L.)	1.6	1.2 C	1.7	5.6 C
<i>Dolycoris baccarum</i> (L.) .....	.3	.2	.1	.5
<i>Myrmus miriformis</i> (Fall.)	5.9	4.6 C	3.7	12.0 D C
<i>Chorosoma schillingi</i> (Schum.) ...	1.1	.9	.7	2.3
<i>Rhyparochromus pini</i> (L.) .....	.1	.1	—	—
<i>Stygnocoris pedestris</i> (Fall.)	—	—	.1	.5
<i>Cymus glandicolor</i> Hahn	32.4	25.7 D C	6.1	19.9 D C
<i>Derephysia foliacea</i> (Fall.) .....	.1	.1	—	—
<i>Nabis flavomarginatus</i> Sz.	2	1.6	1	3.2 C
<i>Nabis pseudoferus</i> Rem. ....	.6	.5	1.9	6.0
<i>Nabis ericetorum</i> Sz.	—	—	.4	1.4
<i>Nabis</i> spp. (juv.)	3.7	3.4 (C)	1.1	3.7 (C)
<i>Anthocoris</i> spp. (juv.)	—	—	.3	.9
<i>Megalocoleus molliculus</i> (Fall.) ...	4.9	3.9 C	.3	.9
<i>Plagiognathus chrysanthemi</i> (Wff.)	64.1	50.8 D C	3.4	11.1 D C
<i>Monosynamma bohemani</i> (Fall.) ..	+	—	—	—
<i>Orthocephalus coriaceus</i> (F.) .....	.9	.7 C	—	—
<i>Globiceps fulvicollis</i> cruc. Reut. ...	1.3	1.0	—	—
<i>Lygus pratensis</i> (L.)	—	—	.4	1.4
<i>Polymerus unifasciatus</i> (F.) .....	.1	.1	—	—
<i>Charagochilus gyllenhali</i> (Fall.) ..	.1	.1	—	—
<i>Calocoris norvegicus</i> (Gmel.) .....	.1	.1	—	—
<i>Adelphocoris seticornis</i> (F.)	—	—	.1	.5
<i>Phytocoris varipes</i> Boh. ....	.7	.6	4.1	13.4 D C
<i>Capsus ater</i> (L.) .....	.1	.1	—	—
<i>Stenodema calcaratum</i> (Fall.) ....	.1	.1	+	—
<i>Notostira elongata</i> (Geoffr.)	2.1	1.7 C	4.7	15.3 D C
<i>Miridae</i> spp. (juv.) .....	.3	.2	.3	.9
Total	126.1	100.3	30.9	100.0
	(± 50.3)		(± 10.6)	

Table 9. — 4 a. *Thalictrum dune* grassland. 4 + 4 samples.

	JULY		AUGUST	
	Per sample	% of total	Per sample	% of total
<i>Sciocoris cursitans</i> (F.)	.3	.4	.5	3.0
<i>Aelia acuminata</i> (L.)	—	—	.5	3.0
<i>Dolycoris baccarum</i> (L.)	.8	1.2	.8	4.5
<i>Alydus calcaratus</i> (L.)	—	—	.3	1.5
<i>Myrmus miriformis</i> (Fall.)	.8	1.2	2	11.9 D C
<i>Chorosoma schillingi</i> (Schum.)	1.3	2.1	2.3	13.4 D C
<i>Nysius thymi</i> (Wff.)	2.8	4.5	2	11.9 D
<i>Peritrechus nubilus</i> (Fall.)	.3	.4	—	—
<i>Stygnocoris rusticus</i> (Fall.)	—	—	.3	1.5
<i>Cymus glandicolor</i> Hahn	1	1.6	—	—
<i>Piesma capitatum</i> (Wff.)	—	—	.3	1.5
<i>Piesma quadratum</i> (Fieb.)	—	—	.3	1.5
<i>Nabis flavomarginatus</i> Sz.	2	3.0 C	.8	4.5 C
<i>Nabis pseudoferus</i> Rem.	—	—	1.3	7.5 C
<i>Nabis ericetorum</i> Sz.	.3	.4	—	—
<i>Nabis</i> spp. (juv.)	2.5	4.1 (C)	—	—
<i>Megalocoleus molliculus</i> (Fall.)	6	9.9 C	.3	1.5
<i>Plagiognathus chrysanthemii</i> (Wff.)	38	59.3 D C	.5	3.0
<i>Orthocephalus coriaceus</i> (F.)	.5	.8	—	—
<i>Orthocephalus saltator</i> (Hahn)	.3	.4	—	—
<i>Lygus maritimus</i> Wagn.	—	—	.3	1.5
<i>Lygus pratensis</i> (L.)	—	—	.5	3.0
<i>Orthops kalmi</i> (L.)	—	—	+	—
<i>Calocoris norvegicus</i> (Gmel.)	2	3.0	—	—
<i>Phytocoris varipes</i> Boh.	2.8	4.5 C	2.3	13.4 D C
<i>Notostira elongata</i> (Geoffr.)	.8	1.2	1.3	7.5
<i>Leptopterna dolabrata</i> (L.)	.5	.8	—	—
<i>Miridae</i> spp. (juv.)	.3	.4	.8	4.5
Total	60.8	99.2	16.8	100.1
	(± 35.7)		(± 5.5)	

Table 10. — 4 b. Dune slack grassland. 2 + 2 samples.

	JULY		AUGUST	
	Per sample	% of total	Per sample	% of total
<i>Legnotus picipes</i> (Fall.) .....	.5	.6	—	—
<i>Aelia acuminata</i> (L.)	1	1.3	—	—
<i>Dolycoris baccarum</i> (L.) .....	.5	.6	1	4.5
<i>Alydus calcaratus</i> (L.)	—	—	.5	2.2
<i>Myrmus miriformis</i> (Fall.)	1	1.3	1	4.5
<i>Chorosoma schillingi</i> (Schum.) ...	2	2.4 C	2.5	11.4 D C
<i>Geocoris grylloides</i> (L.) .....	.5	.6	—	—
<i>Nysius thymi</i> (Wff.)	31.5	37.3 D C	7	31.8 D C
<i>Cymus glandicolor</i> Hahn	7	8.3 C	—	—
<i>Derephysia foliacea</i> (Fall.)	1	1.3	—	—
<i>Nabis flavomarginatus</i> Sz.	1.5	1.8 C	.5	2.2
<i>Nabis ericetorum</i> Sz.	—	—	1.5	6.8
<i>Nabis</i> spp. (juv.)	1	1.3 (C)	.5	2.2
<i>Anthocoris nemorum</i> (L.) .....	.5	.6	—	—
<i>Megalocoleus molliculus</i> (Fall.) ...	3	3.6	—	—
<i>Plagiognathus chrysanthemi</i> (Wff.)	31.5	37.3 D C	1	4.5
<i>Globiceps fulvicollis</i> cruc. Reut. ...	.5	.6	—	—
<i>Orthotylus flavosparsus</i> (Shlbg.) ..	.5	.6	—	—
<i>Lygus maritimus</i> Wagn.	—	—	1.5	6.8 C
<i>Lygus pratensis</i> (L.)	—	—	3.5	15.9 D C
<i>Orthops kalmi</i> (L.)	—	—	+	—
<i>Calocoris norvegicus</i> (Gmel.)	—	—	+	—
<i>Adelphocoris lineolatus</i> (Gz.)	—	—	.5	2.2
<i>Phytocoris varipes</i> Boh.	1	1.3	—	—
<i>Notostira elongata</i> (Geoffr.)	—	—	—	—
Total	84.5	100.8	22	99.5
	(± 10.5)		(± 5)	

Table 11. — 4 c. Grey dune grassland. 8 + 8 samples.

	JULY		AUGUST	
	Per sample	% of total	Per sample	% of total
<i>Legnotus picipes</i> (Fall.)	.1	.3	—	—
<i>Sciocoris cursitans</i> (F.)	.1	.3	—	—
<i>Aelia acuminata</i> (L.)	1.1	2.9 C	—	—
<i>Dolycoris baccarum</i> (L.)	1.9	4.8 C	.1	1.4
<i>Alydus calcaratus</i> (L.)	.3	.6	.1	1.4
<i>Myrmus miriformis</i> (Fall.)	1	2.5	.1	1.4
<i>Chorosoma schillingi</i> (Schum.)	2	5.7 C	1.5	16.9 D C
<i>Geocoris grylloides</i> (L.)	.1	.3	—	—
<i>Ischnodemus sabuleti</i> (Fall.)	+	—	—	—
<i>Nysius thymi</i> (Wff.)	10.8	27.3 D C	1.3	14.1 D C
<i>Stygnocoris fuliginus</i> (Geoffr.)	.1	.3	—	—
<i>Lygaeidae</i> spp. (juv.)	.1	.3	—	—
<i>Cymus glandicolor</i> Hahn	5.4	13.7 D C	.1	1.4
<i>Piesma quadratum</i> (Fieb.)	.1	.3	—	—
<i>Derephysia foliacea</i> (Fall.)	+	—	—	—
<i>Nabis flavomarginatus</i> Sz.	.3	.6	—	—
<i>Nabis ferus</i> (L.)	.1	.3	—	—
<i>Nabis brevis</i> Sz.	.1	.3	.3	2.8
<i>Nabis</i> spp. (juv.)	2.3	5.7 (C)	.1	1.4
<i>Lopus decolor</i> (Fall.)	.6	1.6	—	—
<i>Plagiognathus</i> sp.	.1	.3	—	—
<i>Plagiognathus chrysanthemi</i> (Wff.)	1.5	3.8 C	—	—
<i>Orthocephalus saltator</i> (Hahn)	1.8	4.4	—	—
<i>Globiceps fulvicollis</i> cruc. Reut.	.3	.6	—	—
<i>Pithanus maerkeli</i> (H.S.)	+	—	—	—
<i>Lygus maritimus</i> Wagn.	—	—	.6	7.0
<i>Lygus pratensis</i> (L.)	—	—	.3	2.8
<i>Orthops kalmi</i> (L.)	.1	.3	1	11.3 D
<i>Polymerus brevicornis</i> (Reut.)	.1	.3	.3	2.8
<i>Calocoris norvegicus</i> (Gmel.)	.8	1.9	—	—
<i>Adelphocoris lineolatus</i> (Gz.)	2.9	7.3 C	1.4	15.5 D
<i>Phytocoris varipes</i> Boh.	1	2.5	.9	9.9
<i>Stenodema calcaratum</i> (Fall.)	.5	1.3	—	—
<i>Stenodema laevigatum</i> (L.)	.5	1.3	—	—
<i>Notostira elongata</i> (Geoffr.)	1.6	4.1	.5	5.6
<i>Trigonotylus ruficornis</i> (Geoffr.)	.1	.3	—	—
<i>Leptopterna dolabrata</i> (L.)	.8	1.9	—	—
<i>Miridae</i> spp. (juv.)	.6	1.6	.4	4.2
Total	39.4	99.7	8.9	99.9
	(± 13.1)		(± 3.3)	

Table 12. — 4. d. Carex dune grassland. 2 + 2 samples.

	JULY		AUGUST		
	Per sample	% of total	Per sample	% of total	
<i>Aelia acuminata</i> (L.)	1.5	.4	1.5	6.5	C
<i>Dolycoris baccarum</i> (L.) . . . . .	.5	.1	—	—	
<i>Myrmus miriformis</i> (Fall.)	18	5.3	C 2	8.7	
<i>Chorosoma schillingi</i> (Schum.) . . .	1.5	.4	.5	2.2	
<i>Nysius thymi</i> (Wff.)	9.5	2.8	C +	—	
<i>Cymus glandicolor</i> Hahn	292	86.5	D C 10	43.5	D C
<i>Derephysia foliacea</i> (Fall.)	1.5	.4	—	—	
<i>Nabis flavomarginatus</i> Sz.	1	.3	—	—	
<i>Nabis ericetorum</i> Sz.	—	—	2	8.7	
<i>Nabis</i> spp. (juv.)	4	1.2	—	—	
<i>Plagiognathus chrysanthemi</i> (Wff.)	6.5	1.9	.5	2.2	
<i>Orthops kalmi</i> (L.)	—	—	6	26.1	D
<i>Phytocoris varipes</i> Boh.	—	—	.5	2.2	
<i>Notostira elongata</i> (Geoffr.) . . . . .	.5	.1	—	—	
<i>Leptopterna dolabrata</i> (L.)	1	.3	—	—	
Total	337.5	99.7	23	100.1	
	(± 26.5)		(± 0)		

Table 13. — 5. Dune heath. 4 + 2 samples.

	JULY		AUGUST	
	Per sample	% of total	Per sample	% of total
<i>Rhacognathus punctatus</i> (L.)	1	3.7 C	—	—
Pentatomidae spp. (juv.) . . . . .	.3	.9	—	—
<i>Nysius thymi</i> (Wff.) . . . . .	.3	.9	1.5	3.2
<i>Nysius helveticus</i> (H.S.)	6.3	23.4 D C	6.5	13.7 D C
<i>Macrodema micropterum</i> (Curt.) ..	—	—	1	2.1
<i>Stygnocoris pedestris</i> (Fall.)	—	—	.5	1.1
<i>Scolopostethus decoratus</i> (Hahn) ..	2.8	10.3 D	24.5	51.5 D C
<i>Eremocoris abietis</i> (L.) . . . . .	.5	1.9	—	—
<i>Empicoris vagabundus</i> (L.) . . . . .	.3	.9	—	—
<i>Nabis pseudoferus</i> Rem.	—	—	.5	1.1
<i>Nabis ericetorum</i> Sz.	2.5	9.3 C	5	10.5 D C
<i>Nabis</i> spp. (juv.) . . . . .	.3	.9	—	—
<i>Monosynamma nigritula</i> (Zett.) ...	.3	.9	—	—
<i>Orthotylus ericetorum</i> (Fall.)	14	44.9 D C	—	—
<i>Orthotylus flavosparsus</i> (Shlb.) ..	.3	.9	—	—
<i>Lygus maritimus</i> Wagn.	—	—	+	—
<i>Lygus rugulipennis</i> Popp.	—	—	1	2.1
<i>Lygus pratensis</i> (L.)	—	—	.5	1.1
<i>Adelphocoris lineolatus</i> (Gz.) . . . . .	.3	.9	.5	1.1
<i>Phytocoris varipes</i> Boh.	—	—	1	2.1
Total	26.8	99.8	47.5	100.1
	(± 15.8)		(± 4.5)	