

# THE WEEVIL GENERA *ACALLES*, *RUTERIA* AND *KYKLIOACALLES* IN THE NETHERLANDS (COLEOPTERA: CURCULIONIDAE)

Theodoor Heijerman

Species of the weevil genera *Acalles*, *Ruteria* and *Kyklioacalles* are not frequently taken by collectors as they are cryptic in habit and coloration. As a consequence the distribution of these species is poorly known. There has also been some confusion about the status of some species. Recently, significant revisionary work has been done by several authors. Inspired by their work, I reviewed the Dutch material from institutional and private collections. Furthermore, a number of field trips have been made to collect additional material. Until now, the Dutch list contained five species. The present survey has revealed that two species have to be removed from the check list and three species have to be added. In this contribution the new list is presented and all Dutch species are discussed. A simplified key to the Dutch species is provided.

## INTRODUCTION

The Cryptorhynchinae Schoenherr, 1825 are a large and cosmopolitan subfamily of the Curculionidae with four genera of two subtribes in the Netherlands. The genus *Cryptorhynchus* Illiger, 1807, subtribe Cryptorhynchina Schoenherr, 1825, is represented in our country by only one species: *C. lapathi* (Linnaeus, 1758). The subtribe Tylodina Lacordaire, 1866 contains three genera: *Acalles* Schoenherr, 1825, *Ruteria* Roudier, 1954 and *Kyklioacalles* Stüben, 1999.

Up till now the listing of Dutch species of the genera *Acalles*, *Ruteria* and *Kyklioacalles* contains five species: *Ruteria hypocrita* (Bohemian, 1837) (Syn. *Echinoderia hypocrita*), *Acalles lemur* (Germar, 1824), *A. parvulus* Boheman, 1837 (Syn. *A. turbatus* Boheman, 1844), *A. ptinoides* (Marsham, 1802) and *Kyklioacalles roboris* (Curtis, 1834) (Syn. *A. roboris*) (Brakman 1966, Heijerman 1993).

In a revision Dieckmann (1982) separated two species from *A. parvulus*, viz. *A. dubius* Solari, 1907, and *A. misellus* Boheman, 1844. In the same revision four new species were described, all related to *A. echinatus* and *A. lemur*: *A. micros* Dieckmann, 1982, *A. commutatus* Dieckmann, 1982, *A. petryszaki* Dieckmann, 1982 and *A. kippenbergi* Dieckmann, 1982. Some of these

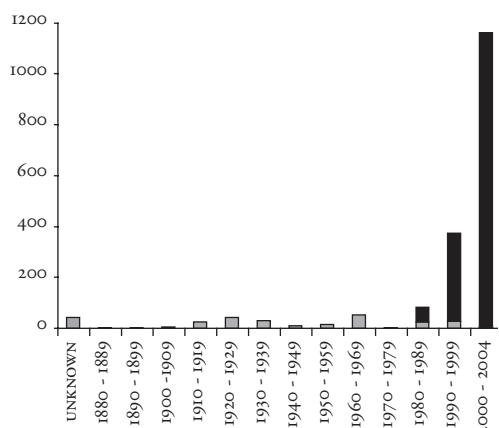


Figure 1  
Number of specimens of *Acalles*, *Kyklioacalles* and *Ruteria* collected in the Netherlands per decade. Black: specimens collected by author; grey: from other collectors.

Figuur 1  
Aantal exemplaren van *Acalles*, *Kyklioacalles* en *Ruteria* verzameld in Nederland. Zwart: exemplaren verzameld door de auteur; grijs: door andere verzamelaars.



Figure 2

Specimen of *Kyklioacalles roboris* (right) and one of *Acalles misellus* (left) on a twig. Photo Theodoor Heijerman.

Figuur 2

Exemplaar van *Kyklioacalles roboris* (rechts) en van *Acalles misellus* (links) op een twijg. Foto Theodoor Heijerman.



Figure 3

Location with *Corylus avellana* on Grebbeberg (Rhenen, Utrecht) where *Acalles dubius* was collected by litter sampling. Photo Theodoor Heijerman.

Figuur 3

Vindplaats met *Corylus avellana* op de Grebbeberg (Rhenen, Utrecht) waar *Acalles dubius* was verzameld uit bladstrooisel. Foto Theodoor Heijerman.

|                                   | FR | GR | DR | OV | GL | UT | NH | ZH | ZE | NB | LI |
|-----------------------------------|----|----|----|----|----|----|----|----|----|----|----|
| <i>Acalles roboris</i> Curt.      | -  | -  | -  | +  | +  | -  | -  | -  | -  | -  | +  |
| <i>Acalles camelus</i> F.         |    |    |    |    |    |    |    |    |    |    |    |
| <i>Acalles ptinoides</i> (Marsh.) | -  | -  | -  | +  | +  | +  | +  | -  | -  | +  | +  |
| <i>Acalles lemur</i> Germ.        | -  | -  | -  | -  | +  | -  | -  | -  | -  | -  | +  |
| <i>Acalles parvulus</i> Boh.      | -  | -  | -  | -  | +  | -  | -  | -  | +  | -  | +  |
| (= <i>Acalles turbatus</i> Boh)   |    |    |    |    |    |    |    |    |    |    |    |
| <i>Echinodera hypocrita</i> Boh.  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | +  |

Table 1

Checklist of *Acalles* and *Echinodera* species reproduced from Brakman (1966) with their occurrences per province. *Acalles camelus* is listed by Brakman (l.c.) as a species occurring in regions adjacent to our country. FR=Friesland, GR=Groningen, DR=Drenthe, OV=Overijssel, GL=Gelderland, UT=Utrecht, NH=Noord-Holland, ZH=Zuid-Holland, ZE=Zeeland, NB=Noord-Brabant, LI=Limburg.

Tabel 1

Naamlijst van soorten van *Acalles* en *Echinodera*, overgenomen uit Brakman (1966), met het voorkomen per provincie. *Acalles camelus* is opgenomen door Brakman (l.c.) als voorkomend in het aangrenzende gebied. Voor afkortingen zie boven.

|                              | FR | GR | DR | OV | FL | GL | UT | NH | ZH | ZE | NB | LI |
|------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|
| <i>Kyklioacalles roboris</i> | -  | -  | -  | +  | -  | +  | +  | -  | -  | -  | -  | +  |
| <i>Acalles dubius</i>        | -  | -  | -  | -  | -  | +  | +  | -  | -  | -  | -  | -  |
| <i>Acalles misellus</i>      | -  | -  | -  | -  | -  | -  | -  | +  | -  | -  | -  | +  |
| <i>Acalles commutatus</i>    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | +  |
| <i>Acalles ptinoides</i>     | +  | -  | +  | +  | -  | +  | +  | +  | -  | -  | +  | +  |
| <i>Ruteria hypocrita</i>     | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  | +  |

Table 2

Checklist of *Acalles*, *Kyklioacalles* and *Ruteria* species currently known from the Netherlands with occurrences per province. Abbreviations as in table 1, with the addition of FL = Flevoland.

Tabel 2

Naamlijst van soorten van *Acalles*, *Kyklioacalles* en *Ruteria* die op dit moment bekend zijn uit Nederland, met het voorkomen per provincie. Afkortingen als in tabel 1, met als toevoeging FL = Flevoland.

new species, *A. dubius*, *A. misellus* and *A. commutatus*, are meanwhile reported from the regions Weser-Ems, Westfalen and Nordrhein in Germany, close to the Netherlands (Köhler & Klausnitzer 1998). More recently members of the Curculio-Institut (Germany, Mönchengladbach) have done much revisionary work on various genera of the Cryptorhynchinae. They described a large number of new species, mainly from southern Europe, northern Africa and the Canarian

Islands, made redescriptions of known species and produced electronic keys with numerous figures and photographs (for references consult their website: [www.curci.de/curcineu.htm](http://www.curci.de/curcineu.htm)). Stüben (1999) erected the new genus *Kyklioacalles* and he later transferred *Acalles roboris* to this genus (Stüben 2003).

In this paper I present the results of a review of the Dutch species of *Acalles* and related genera. Relatively little material appeared to be present in

| Taxa                 | Time periods |                |           | Sum* |
|----------------------|--------------|----------------|-----------|------|
|                      | 1880-1925    | 1926-1965      | 1966-2003 |      |
|                      |              | # specimens    |           |      |
| <i>K. roboris</i>    | 26           | 33             | 577       | 644  |
| <i>A. dubius</i>     | 0            | 0              | 50        | 50   |
| <i>A. misellus</i>   | 0            | 0              | 642       | 642  |
| <i>A. commutatus</i> | 1            | 7              | 54        | 65   |
| <i>A. ptinoides</i>  | 27           | 43             | 391       | 491  |
| <i>R. hypocryta</i>  | 0            | 1              | 9         | 10   |
| Sum                  | 54           | 84             | 1724      | 1903 |
|                      |              | # records      |           |      |
| <i>K. roboris</i>    | 11           | 19             | 91        | 124  |
| <i>A. dubius</i>     | 0            | 0              | 7         | 7    |
| <i>A. misellus</i>   | 0            | 0              | 33        | 33   |
| <i>A. commutatus</i> | 1            | 7              | 29        | 39   |
| <i>A. ptinoides</i>  | 22           | 31             | 161       | 232  |
| <i>R. hypocryta</i>  | 0            | 1              | 7         | 8    |
| Sum                  | 34           | 58             | 329       | 382  |
|                      |              | # 10km-squares |           |      |
| <i>K. roboris</i>    | 4            | 7              | 12        | 14   |
| <i>A. dubius</i>     | 0            | 0              | 3         | 3    |
| <i>A. misellus</i>   | 0            | 0              | 8         | 8    |
| <i>A. commutatus</i> | 1            | 3              | 5         | 6    |
| <i>A. ptinoides</i>  | 16           | 15             | 37        | 51   |
| <i>R. hypocryta</i>  | 0            | 1              | 1         | 1    |
| Sum                  | 18           | 17             | 45        | 61   |

Table 3  
Number of specimens,  
records and 10km-squares  
for each species over  
three time periods.

\* Please note: sum refers  
to sum of dated and  
undated specimens.

#### Tabel 3

Aantal exemplaren, waar-  
nemingen en 10x10km-  
hokken per soort en over  
drie perioden. \* NB: de  
som betreft het totaal van  
het aantal gedateerde en  
ongedateerde exemplaren.

the Dutch collections. Therefore an effort was made to collect further specimens, which resulted in an enormous increase of number of specimens (fig. 1) and records.

#### BIOLOGY

Species of *Acalles*, *Ruteria* and *Kykliaoacalles* are generally small and inconspicuous, with a relatively concealed way of life. The adult weevils mimic the background on which they live (fig. 2). On the whole, the biology of the majority of the species is very poorly known. Adults are reported to hibernate and to be nocturnal (Dieckmann 1982). The Dutch species all live in deciduous

woods, associated with various deciduous tree species. The adults live on branches and twigs while the larvae develop within twigs. Scherf (1964) collected adults of *Acalles* or related genera from dead branches of trees, especially from *Quercus* and *Fagus*, but did not succeed in rearing them. Also Hoffmann (1958) reports that most of the *Acalles* species develop in dead branches. Dieckmann (1982) writes that the larvae develop in dead, mouldy twigs or small branches of deciduous trees, especially when these are on the forest floor. He also mentions that some species of *Acalles* were reared from larvae from dead branches of ivy (*Hedera helix*). Knutelski & Swalko (1992) found larvae of *A. pyrenaeus* Boheman,

| Taxon                | Sampling method |     |              |      |               |     |         |     |
|----------------------|-----------------|-----|--------------|------|---------------|-----|---------|-----|
|                      | pitfall traps   |     | beating tray |      | litter sample |     | unknown |     |
|                      | locs            | #   | locs         | #    | locs          | #   | locs    | #   |
| <i>K. roboris</i>    | 19              | 27  | 53           | 485  | 12            | 58  | 40      | 74  |
| <i>A. dubius</i>     | 0               | 0   | 2            | 37   | 5             | 13  | 0       | 0   |
| <i>A. misellus</i>   | 1               | 1   | 27           | 610  | 5             | 31  | 0       | 0   |
| <i>A. commutatus</i> | 7               | 10  | 13           | 23   | 8             | 20  | 11      | 12  |
| <i>A. ptinoides</i>  | 88              | 147 | 18           | 32   | 33            | 159 | 92      | 153 |
| <i>R. hypocrita</i>  | 2               | 2   | 1            | 2    | 0             | 0   | 5       | 6   |
| Sum                  | 113             | 187 | 76           | 1189 | 44            | 281 | 148     | 244 |

Table 4

Number of sampling localities (locs) and specimens (#) for each species, per sampling method.

Tabel 4

Aantal bemonsterde locaties (locs) en exemplaren (#) per soort en per vangmethode.

| Number of<br>species in<br>square | square size 10 x 10 km |                                   |                   | square size 5 x 5 km              |  |  |
|-----------------------------------|------------------------|-----------------------------------|-------------------|-----------------------------------|--|--|
|                                   | Number of squares      | In provinces                      | Number of squares | In provinces                      |  |  |
| 1                                 | 49                     | LI, GL, OV, UT,<br>NH, FR, DR, NB | 68                | LI, GL, OV, UT,<br>NH, FR, DR, NB |  |  |
| 2                                 | 8                      | LI, GL, OV, UT                    | 10                | LI, GL, UT                        |  |  |
| 3                                 | 2                      | LI                                | 5                 | LI                                |  |  |
| 4                                 | 2                      | LI                                | 2                 | LI                                |  |  |
| 5                                 | 1                      | LI                                | 2                 | LI                                |  |  |
| 6                                 | 0                      |                                   | 0                 |                                   |  |  |

Table 5

Number of squares with specified number of species. Abbreviations of provinces as in table 1.

Tabel 5

Aantal hokken waarin een bepaald aantal soorten is waargenomen. Provincieafkortingen als in tabel 1.

1844 in decaying offshoots of *Sorbus chamaemeloides* and *S. glabrata*. They describe the larva itself as well as its feeding pattern. An attempt to rear the larvae, however, failed. The larvae probably do not develop in dead or mouldy twigs at all (Stüben 2001). Bayer & Stüben (2000) observed that the adults deposit their eggs on twigs and small branches that had only recently died. The larvae develop in the cambium layer, which is still nutritious.

## HISTORY

The oldest catalogues of Dutch beetles prepared by Snellen van Vollenhoven (1848, 1854, 1870) and Everts (1875) do not list any species of *Acalles* or related genera. Everts (1887) is the first to report two indigenous species: *Kyklioacalles roboris* and *Acalles ptinoides*. Several specimens of *K. roboris* were collected by Leesberg near Valkenburg (province of Limburg) in July and

*A. ptinoides* was collected by Putzeys near Wolfheze (Gelderland) in May. In his classical work 'Coleoptera Neerlandica', Everts (1903) mentions four species for the Netherlands: *K. roboris* (Valkenburg, Kerkrade, Winterswijk), *A. lemur* (= *sulcatus* Bohem.) (Arnhem, Houthem), *A. ptinoides* (Wolfheze) and *A. turbatus* (Houthem). These species are also listed in Everts' catalogues (1906 & 1925). In the third part of 'Coleoptera Neerlandica' Everts (1922) presents further localities for the Dutch species.

*Kyklioacalles roboris* was collected on several locations in Zuid-Limburg and also in Denekamp (Overijssel). *Acalles ptinoides* is reported from the provinces of Gelderland, Overijssel, Noord-Brabant, Limburg, Utrecht (De Bilt) and Noord-Holland (Hilversum). *Acalles turbatus* was collected on several locations in Zuid-Limburg (in *Formica rufa* nests) as well as in Gelderland (Arnhem, De Steeg).

In a publication by Van der Wiel (1956) *Ruteria hypocrita* was added to the Dutch list. One specimen was collected by Berger on June 24, 1950 near Gronsveld (Limburg). In the catalogues of Brakman (1966) and Heijerman (1993) five Dutch species are listed (table 1).

Further information on Dutch species of *Acalles* and related genera, is very scarce. Poot (1965) mentions that *K. roboris* was collected by beating dead hawthorn hedges at Vaals, Terziet and Bemelen. Berger & Poot (1970) report a further record of *R. hypocrita*, collected in June 1968 by the second author: one specimen was caught in a pitfall trap in the pipe of a badger earth, near Valkenburg. Finally, Heijerman & Booij (1983) report on a survey of chalk grasslands in Zuid-Limburg, using pitfall traps, where they collected one specimen of *R. hypocrita* and several specimens of *A. commutatus*, to which they erroneously referred to as *A. lemur*.

## MATERIAL

Material was examined from the main institutional collections: Nationaal Natuurhistorisch Museum Naturalis, Leiden (RMNH); Zoologisch

Museum, Amsterdam (ZMAN); Laboratorium voor Entomologie, Wageningen (EW); Instituut voor Bos en Natuurbeheer Alterra, Wageningen (IBN) and of some private collections (C.J.H. Booij, Wageningen; P. Boer, Bergen Noord-Holland; J. Burgers, Hengelo Gelderland; I.P. Raemakers, Gronsveld; W. van Steenis, Utrecht; Th. Heijerman, Wageningen).

For identification initially the keys in Dieckmann (1982), Kippenberg (1983) and Tempère & Péricart (1989) were used, and later the key of Bahr & Stüben (2002). In total 347 specimens present in the collections were studied, resulting in 215 records. A relatively large number of specimens in the institutional collections were unidentified. The identified specimens were labelled as *K. roboris*, *A. ptinoides*, *A. lemur*, *A. parvulus* and *R. hypocrita*. All specimens of *A. lemur* and *A. parvulus* were misidentified and belonged to *A. commutatus*, *A. ptinoides*, *A. misellus*, *A. dubius* or *K. roboris*.

Since 1981 the author collected 1560 specimens from 172 localities, resulting in 233 records. The specimens belonged to the following species: *K. roboris*, *A. ptinoides*, *R. hypocrita*, *A. dubius*, *A. misellus* and *A. commutatus* (table 2).

In total 1907 specimens are known from the Netherlands, resulting in 448 records. These records come from 63 10km-squares or 88 5km-squares. Table 3 presents the number of specimens, records and 10km-squares over three time periods, viz. 1880-1925, 1926-1965 and 1966-2003.

## SPECIES ACCOUNTS

In this section all species of *Acalles*, *Ruteria* and *Kyklioacalles* are treated that were ever reported as occurring in the Netherlands. Information is presented on the total number of specimens, records and localities (table 3) and on the distribution, habitat and ecology and status in the Netherlands. For each species a distribution map is shown. The species are treated in the order of appearance in the catalogue of Lucht (1987).

□ < 1967  
● > 1966

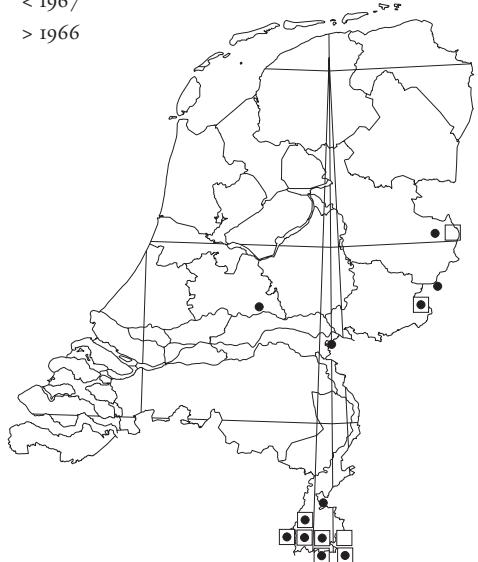


Figure 4  
Dutch distribution of *Kyklioacalles roboris*.  
Figuur 4  
Verspreiding in Nederland van *Kyklioacalles roboris*.

□ < 1967  
● > 1966

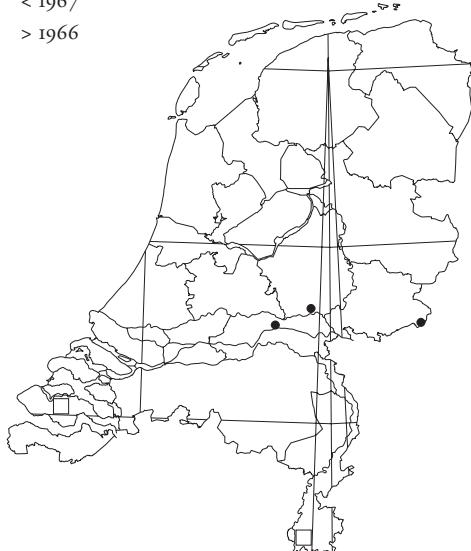


Figure 5  
Dutch distribution of *Acalles dubius*.  
Figuur 5  
Verspreiding in Nederland van *Acalles dubius*.

□ < 1967  
● > 1966

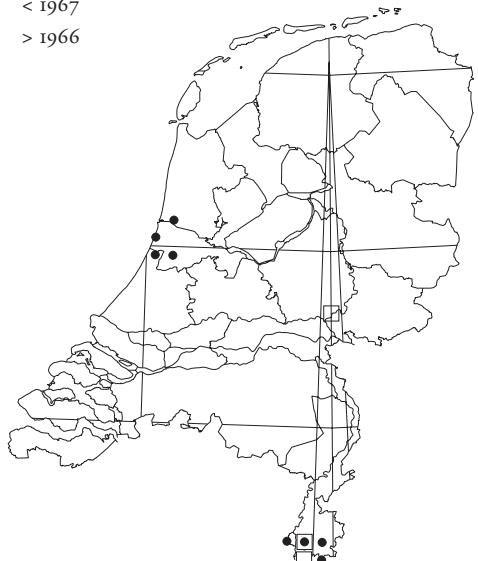


Figure 6  
Dutch distribution of *Acalles misellus*.  
Figuur 6  
Verspreiding in Nederland van *Acalles misellus*.

□ < 1967  
● > 1966

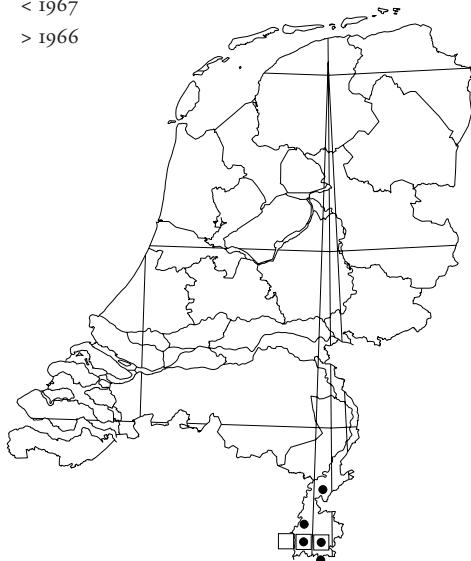


Figure 7  
Dutch distribution of *Acalles commutatus*.  
Figuur 7  
Verspreiding in Nederland van *Acalles commutatus*.

### *Kyklioacalles roboris*

**Material** 644 specimens, 124 localities, 14 10km-squares, 22 5km-squares.

**European distribution** *Kyklioacalles roboris* occurs throughout central and southern Europe. Its range extends to the north to Denmark, southern Sweden and Norway, as far east as Poland, Czech Republic, Austria and Slovenia. The southern-most records come from northern Spain and Italy and in the west the species occurs in England, Wales and Ireland (Morris 2002). For the European distribution map, see Bahr & Stüben (2002).

**Distribution NL** *Kyklioacalles roboris* is recorded from Overijssel, Gelderland, Utrecht and Limburg (fig. 4). Most records are from Limburg, where it is not uncommon in the southern parts. The oldest record is from June 1896 when one specimen was collected in Winterswijk (leg. Fokker). The species can be abundant. In the Savelbosch (Limburg, Gronsveld) I collected 80 specimens on one day in September 1999, by use of a beating tray. Given the European distribution of *K. roboris*, the Dutch populations are near the centre of its range.

**Habitat and ecology** The species seems to be associated with several deciduous tree species. Morris (2002) reports that the larvae probably develop in dead branches of *Quercus*. Other authors mention more tree species. Kippenberg (1983) for example mentions that the species can be found on dead branches of deciduous trees like *Quercus*, *Fagus* and *Castanea*, but also on small specimens of *Abies*. Hoffmann (1958) only refers to *Quercus*. Stüben et al. (2000) collected *K. roboris* from *Fagus sylvatica*, *Castanea sativa*, *Quercus* (viz. *Q. ilex*), *Corylus avellana*, *Betula* and *Abies alba*. In addition Stüben (2003) also mentions *Carpinus betulus* and *Fraxinus*. In the Netherlands I have collected *A. roboris* by beating, in pitfall traps or in woodland litter samples (table 4). The majority of specimens collected by beating are from *Fagus sylvatica*, *Quercus*, *Fraxinus excelsior* and *Tilia*. A smaller number of specimens was collected from *Corylus avellana*, *Alnus glutinosa* and *Carpinus betulus*.

Adults can be collected throughout the year, even in winter (fig. 10). Large numbers were taken in September and October by beating.

**Status** Not uncommon in the southern part of Limburg, but rare in the rest of the country. Based on number of specimens and records it is the second most common species of in the Netherlands.

**Notes** Very recently Stüben (2003) studied the type material of the the *K. roboris* complex and discovered that *K. navieresii* (Boheman, 1837), up till then considered a synonym of *K. roboris*, is in fact a good species. Stüben (2003) presents a redescription of both species and creates a subgenus *Palaeoacalles* Stüben, 2003 within *Kyklioacalles*, in which these two species are placed. *Kyklioacalles navieresii* can be separated from its sibling species *K. roboris* on the basis of the structure of the internal sack of the aedeagus and on certain exoskeletal characters. Stüben (2003) offers an identification key for these and other *Kyklioacalles* species. Stüben (l.c.) studied over 1000 specimens belonging to *K. navieresii*, from 151 locations all over Europe. In none of these locations both *K. roboris* and *K. navieresii* were present together. *Kyklioacalles navieresii* may well be discovered in the Netherlands, since the nearest locations are in Rheinland, Germany. I have re-identified a number of Dutch specimens of *K. roboris*, but up till now no specimens of *K. navieresii* were discovered.

### *Acalles parvulus*

**Material** No Dutch material.

**European distribution** *Acalles parvulus* is a central European species. A distribution map is presented by Bahr & Stüben (2002). The localities nearest to the Netherlands are situated in Germany in Nordrhein, Rheinland, Hessen and Saarland (Köhler & Klausnitzer 1998).

**Status** Not indigenous. All published records are based on misidentifications and the species must be removed from the Dutch list.

**Notes** In Dutch collections five specimens were labelled as *A. parvulus*: two specimens from Gelderland, two from Limburg and one from

Zeeland. These specimens were *K. roboris*, *A. misellus* or *A. dubius* or could not be identified because they were (worn) females.

#### *Acalles dubius* f. nov. spec.

**Material** 50 specimens, 7 localities, 3 10km-squares, 4 5km-squares.

**European distribution** *Acalles dubius* has a rather limited central European distribution (see map in Bahr & Stüben 2002). It occurs in Austria, Switzerland, Italy, Slovenia and Germany, where the species is also reported from regions adjacent to our border (Rheinland, Nordrhein) (Köhler & Klausnitzer 1998). There is a questionable record from central France (Tempère & Péricart 1989).

**Distribution NL** *Acalles dubius* has a very limited distribution in the Netherlands. It is recorded from two provinces, viz. Gelderland and Utrecht (fig. 5). The first Dutch record is from Winterswijk, where one specimen was collected in a litter sample on February 13, 2000. A second specimen was collected at Winterswijk at February 27, 2000. Further records are all from the Grebbeberg (Utrecht, Rhenen; see fig. 3) and the forest area south of Doorwerth (Gelderland). **Habitat and ecology** Kippenberg (1983) reports that *A. dubius* can be collected from leaf litter and mouldy branches of trees and brushes. He mentions *Quercus*, *Castanea*, *Populus* and *Salix*. In the Netherlands *A. dubius* was collected by beating, mainly from *Fagus sylvatica*, and from litter samples, mainly from *Corylus avellana*. It is the only species I did not find in pitfall traps. Adults were collected in early spring (February and March) (fig. 11).

**Status** *Acalles dubius* is a species new for the fauna of the Netherlands and was only recently discovered by the author. It is a very rare species, which reaches the northern margin of its range in our country.

**Notes** Three female specimens of *Acalles*, present in RMNH, could not be identified with certainty, and may belong to *A. dubius*. One specimen labelled *A. parvulus*, was collected at Nisse (Zeeland) by Brakman on August 25, 1962.

A second specimen, labelled *A. turbatus*, was collected in Arnhem (Gelderland) by Veth in May (no further information on the date) and a third specimen, labelled *A. lemur*, originates from Valkenburg and was collected by J. Kinker in July 1887. Because of their uncertain identity, they were left out of this review. The specimen from Nisse is particularly intriguing, since there are no forests in the area and *Acalles* species do not fly.

#### *Acalles misellus* f. nov. spec.

**Material** 642 specimens, 33 localities, 8 10km-squares, 11 5km-squares.

**European distribution** *Acalles misellus* is a western European species with an Atlantic distribution (see map in Bahr & Stüben 2002) and its range extends as far north as southern Sweden and Norway and south to the Pyrenees. On the British Isles it occurs throughout central and southern England, Wales, the Isle of Man, Scotland and Ireland (Morris 2002).

**Distribution NL** *Acalles misellus* is recorded from two provinces, viz. Noord-Holland and Limburg (fig. 6). The first Dutch record of *A. misellus* comes from a litter sample from the Savelsbosch (Limburg, Sint Geertruid) taken on February 23, 1993.

**Habitat and ecology** Morris (2002) reports the species from woods and hedgerows, 'often found in association with dead *Hedera* and *Crataegus*'.

Kippenberg (1983) mentions *Crataegus* as well, but also writes that it can be beaten from *Pinus*. Stüben et al. (2000) list a number of tree species, viz. *Fraxinus excelsior*, *Fagus sylvatica*, *Castanea sativa*, *Quercus* (a.o. *Q. ilex* and *Q. pubescens*), *Corylus avellana*, *Betula*, *Tilia*, *Buxus* and *Abies alba*.

In the Netherlands *A. misellus* was mainly collected by beating, but also by litter sampling. Only one specimen was found in a pitfall trap. Most specimens were beaten from *Tilia* and *Alnus glutinosa*, followed by *Fagus sylvatica* and *Quercus*. Most specimens were collected by beating in autumn (August to October), but adults were also collected by litter sampling from February and May (fig. 12).

**Status** *Acalles misellus* is clearly a rare species, but strongly under-recorded. I expect that the species is quite common in the old dune forests of Noord-Holland and Zuid-Holland. *Acalles misellus* is distributed in a rather narrow area along the Atlantic coast and the Dutch populations are more or less at the centre of the range.

**Notes** Three female specimens of *Acalles* in RMNH could not be identified with certainty and are either *A. dubius* or *A. misellus*. The first specimen was labelled as *A. lemur*, collected by de Vos, on June 23, 1907 at (De) Steeg (Gelderland). The second specimen was labelled as *A. turbatus*, collected by Veth in 1887 at Eysden (Limburg). The third specimen was also labelled *A. turbatus*, collected by Versluys at July 1894 at Houthem (Limburg). These specimens were not considered further in this review.

### *Acalles lemur*

**Material** No Dutch specimens.

**European distribution** *Acalles lemur* has a limited central European distribution (see map in Bahr & Stüben 2002). In Germany *A. lemur* is widely distributed and known from regions neighbouring our country, viz. Rheinland, Nordrhein, Westfalen and the Weser-Ems area (Köhler & Klausnitzer 1998). I also saw some specimens from Belgium, collected in 2003, leg. Veerle Versteirt (Brussel, België).

**Status** Not indigenous. All published records are based on misidentifications. Therefore the species must be removed from the Dutch list. Since the species occurs close to the Dutch border the presence of *A. lemur* in our country is quite probable.

**Notes** Thirteen specimens in RMNH, all from Limburg and Gelderland, labelled as *A. lemur* belonged either to *A. commutatus*, *A. dubius*, *A. ptinoides* or *K. roboris*.

### *Acalles commutatus* f. nov. spec.

**Material** 65 specimens, 39 localities, 6 10km-squares, 10 5km-squares.

**European distribution** *Acalles commutatus* shows a disjunct distribution pattern and is recorded from a large area in central and eastern Europe, as well as from the Pyrenees (see map in Bahr & Stüben 2002). Its range extends from northern Germany and Poland in the north, to northern Italy, Slovenia and former Yugoslavia in the south, and from eastern France to Romania, Moldavia and the European part of Turkey in the east.

**Distribution NL** In the Netherlands *A. commutatus* is limited to the southern part of Limburg; the northernmost locality is near Echt (De Doort) (fig. 7). The oldest record is a specimen from Valkenburg where it was collected in October 1919 by Rüschkamp (col. RMNH). The Dutch populations are at the north-western margin of the range.

**Habitat and ecology** Kippenberg (1983) reports *A. commutatus* to occur in deciduous forests. Stüben et al. (2000) mention *Fagus sylvatica*, *Castanea sativa*, *Quercus*, *Corylus avellana*, *Tilia*, *Buxus* and *Abies alba*.

Most Dutch specimens were collected by beating (*Quercus*, *Fagus sylvatica*, *Fraxinus excelsior* and *Alnus glutinosa*) or by litter sampling. A few specimens were found in pitfall traps.

*Acalles commutatus* was collected almost all over the year, but in relatively low numbers. Only from November and December there are no records (fig. 13).

**Status** *Acalles commutatus* was not reported from the Netherlands before, and thus the species is an addition to the Dutch list. The species is quite common in Zuid-Limburg.

**Notes** Several older specimens of *A. commutatus*, either unidentified, or misidentified as *A. lemur*, were present in the collections of RMNH, ZMAN and EW.

### *Acalles ptinoides*

**Material** 491 specimens, 232 localities, 51 10km-squares, 69 5km-squares.

**European distribution** *Acalles ptinoides* is a western European species with an Atlantic distribution and its range extends from southern

□ < 1967

● > 1966

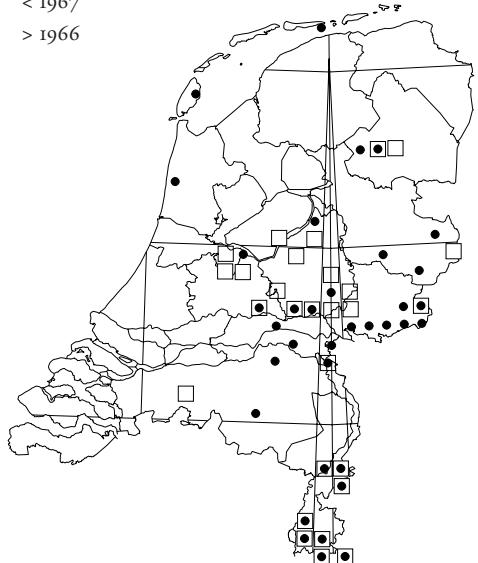


Figure 8

Dutch distribution of *Acalles ptinoides*.

Figuur 8

Verspreiding in Nederland van *Acalles ptinoides*.

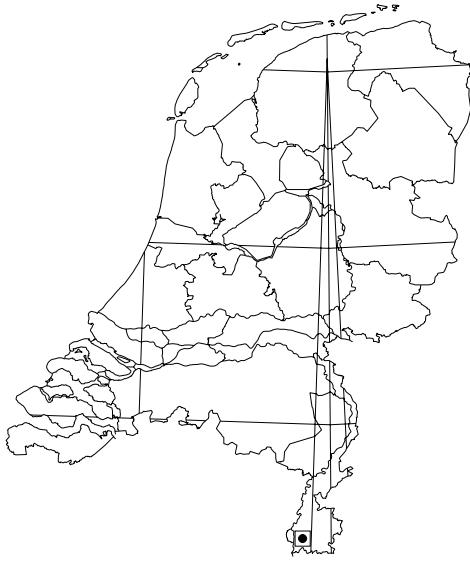


Figure 9

Dutch distribution of *Ruteria hypocrita*.

Figuur 9

Verspreiding in Nederland van *Ruteria hypocrita*.

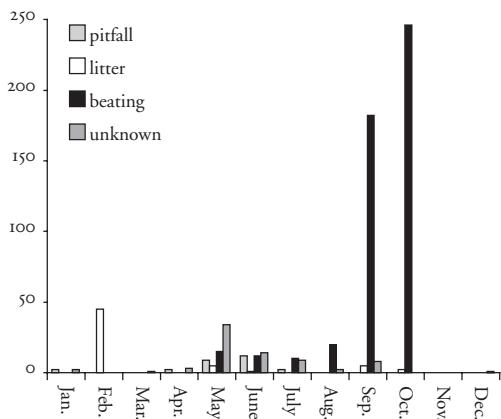


Figure 10

Number of specimens of *Kyklioacalles roboris*, collected per month. Specimens classified according to collection method.

Figuur 10

Aantal exemplaren van *Kyklioacalles roboris*, verzameld per maand. De exemplaren zijn opgedeeld naar verzamelmethode.

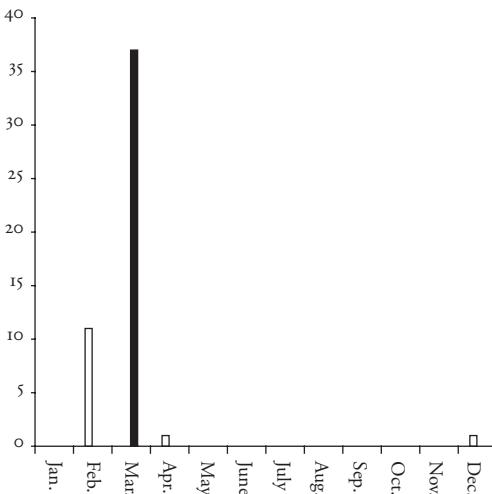


Figure 11

Number of specimens of *Acalles dubius*, collected per month. Specimens classified according to collection method. Legend as in figure 10.

Figuur 11

Aantal exemplaren van *Acalles dubius*, verzameld per maand. De exemplaren zijn opgedeeld naar verzamelmethode. Legenda als in figuur 10.

Scandinavia to the south of France (see map in Bahr & Stüben 2002). From the British Isles it is reported from England, Wales, Scotland and Ireland (Morris 2002).

**Distribution NL** *Acalles ptinoides* is our most widespread species and is recorded from Friesland, Drenthe, Overijssel, Gelderland, Utrecht, Noord-Holland, Noord-Brabant en Limburg (fig. 8). The earliest record dates back from May 1906, when one specimen was collected by Uyttenboogaart at Bussum (Noord-Holland). The Dutch populations fall well within the known range.

**Habitat and ecology** According to Morris (2002) *A. ptinoides* lives in woods, generally on acid soils, and on heath land. It is believed to be ground-dwelling, not arboreal. Morris (l.c.) furthermore reports that the larvae probably develop in dead twigs of *Quercus* and *Calluna*. Also Kippenberg (1983) and Hoffmann (1958) mention that the development may take place in *Calluna*.

In the Netherlands *A. ptinoides* was mainly collected in litter samples and in pitfall traps. The few specimens that could be beaten from trees come from *Quercus*, *Fagus sylvatica*, *Acer*, *Corylus avellana*, *Tilia* and *Abies*. Most records come from forested areas, but *A. ptinoides* seems to live in less dense forests compared with the other species. It was the only species found regularly in coniferous forests. *Acalles ptinoides* was recorded from every month of the year. Large numbers were collected, both by pitfall and litter sampling, as early as in February (fig. 14).

**Status** *Acalles ptinoides* is by far our most common species and occurs throughout the country.

**Notes** Only two specimens of *A. ptinoides* were incorrectly identified. One specimen from Ellecom (August 1911, col. vd Hoop) and one from Arnhem (July 3, 1941, leg. E. v. Nidek) were both misidentified as *A. lemur*.

### *Ruteria hypocrita*

**Material** 10 specimens, 8 localities, 1 10km-square, 3 5km-squares.

**European distribution** The range includes large parts of southern, central and eastern Europe (see map in Bahr & Stüben 2002). To the north it reaches northern Germany and southern Denmark, to the south it ranges to southern France, Slovenia, former Yugoslavia and it extends its range as far east as to the Black Sea.

**Distribution NL** All nine specimens were collected in the same forest area in the southern part of Limburg (fig. 9). In the Netherlands the species is at the north-eastern limits of its range. It was first collected by Berger in 1950 at Gronsveld and reported by Van der Wiel (1956).

**Habitat and ecology** *Ruteria hypocrita* is believed to prefer mouldy branches and stubs of deciduous trees like *Quercus* and *Fagus* (Kippenberg 1983). Hoffmann (1958) states that the larvae live and develop in branches of *Quercus*. The adult was observed on *Fagus* and *Corylus*. In France (Nyons, Drôme) *R. hypocrita* was also found in large numbers in dead branches of *Laurus nobilis* (Hoffmann, l.c.).

The few Dutch specimens were found from March to July (fig. 15).

**Status** This species is extremely rare in our country with a very restricted distribution.

### IDENTIFICATION

The following simplified key can be used to identify the Dutch species of *Acalles*, *Kyklioacalles* and *Ruteria*. The key is partly based on the key for the West-Palaearctic Cryptorhynchinae by Bahr & Stüben (2002). For a certain identification, especially in the case of *A. commutatus*, *A. dubius* and *A. misellus*, it is advisable to also study males, which can be easily distinguished by the shape of the median lobe. In figures 16-27 the male aedeagi for our six species have been figured. In case of doubt the key of Bahr & Stüben (2002) should be consulted. In this key, all European species are discussed elaborately, and many figures of both morphological characters and aedeagi are presented.

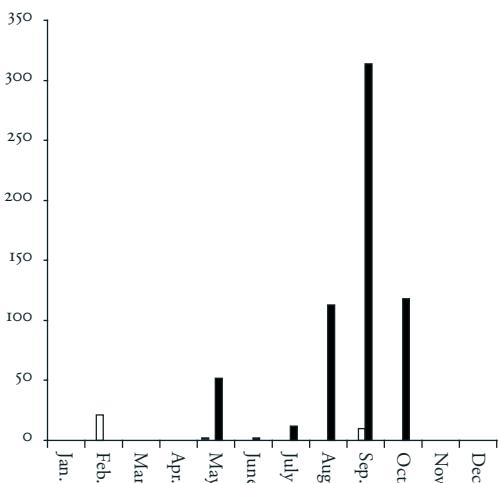


Figure 12

Number of specimens of *Acalles misellus*, collected per month. Specimens classified according to collection method. Legend as in figure 10.

Figuur 12

Aantal exemplaren van *Acalles misellus*, verzameld per maand. De exemplaren zijn opgedeeld naar verzamelmethode. Legenda als in figuur 10.

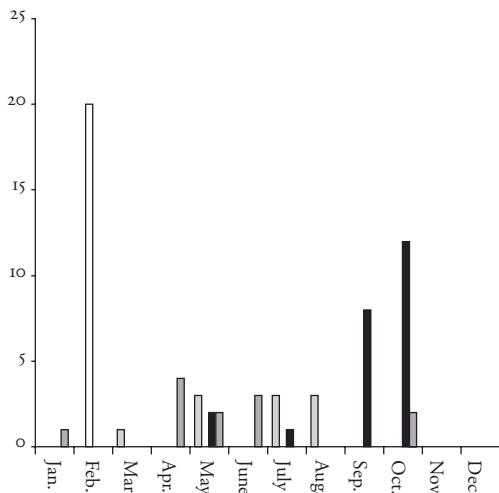


Figure 13

Number of specimens of *Acalles commutatus*, collected per month. Specimens classified according to collection method. Legend as in figure 10.

Figuur 13

Aantal exemplaren van *Acalles commutatus*, verzameld per maand. De exemplaren zijn opgedeeld naar verzamelmethode. Legenda als in figuur 10

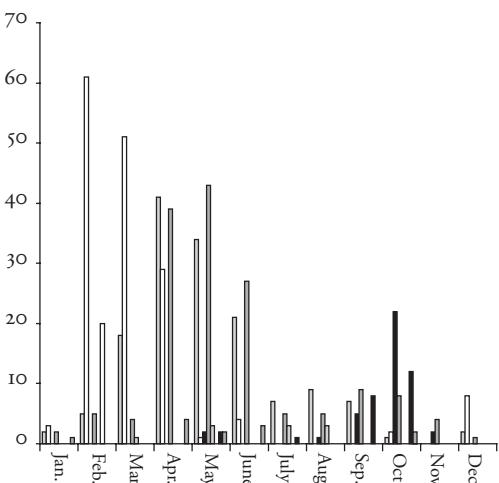


Figure 14

Number of specimens of *Acalles ptinoides*, collected per month. Specimens classified according to collection method. Legend as in figure 10.

Figuur 14

Aantal exemplaren van *Acalles ptinoides*, verzameld per maand. De exemplaren zijn ingedeeld naar verzamelmethode. Legenda als in figuur 10.

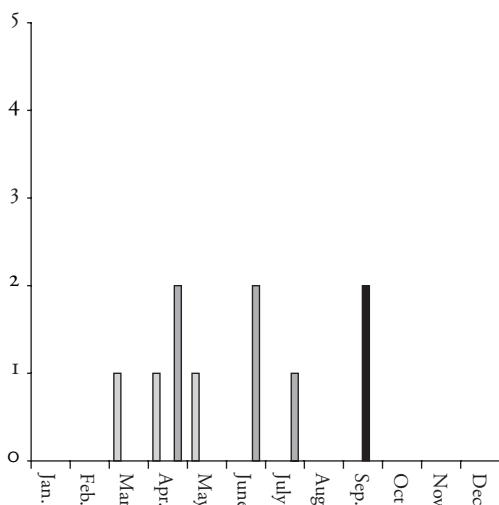


Figure 15

Number of specimens of *Ruteria hypocrita*, collected per month. Specimens classified according to collection method. Legend as in figure 10.

Figuur 15

Aantal exemplaren van *Ruteria hypocrita*, verzameld per maand. De exemplaren zijn ingedeeld naar verzamelmethode. Legenda als in figuur 10.

- 1 First sternite of abdomen longer than following three segments together. Mostly under 3 mm. .... 2
- First sternite of abdomen shorter than following three segments together; second abdominal sternite as long as third. Body dark blackish with clear white or yellowish transverse marking on elytral slope. Largest species: 3.0-5.8 mm. .... *Ruteria hypocrita*
- 2 Pronotum with a longitudinal median furrow. Size: 2.0-3.0 mm .... *Kyklioacalles roboris*
- Pronotum without such a furrow ..... 3
- 3 Pronotum with conspicuous upstanding scales ..... 4
- Pronotum without conspicuous upstanding scales. Size: 1.9-3.0 mm .... *Acalles ptinoides*
- 4 Elytra with crests of upstanding setae on intervals ..... 5
- Elytra without crests of upstanding setae on intervals. Size: 1.9-2.7 mm ..... *Acalles commutatus*
- 5 Upstanding setae on apical part of first elytral interval in one or two rows. Size: 1.9-2.7 mm ..... *Acalles dubius*
- Upstanding setae on apical part of first elytral interval in two or three rows. Broadest scale crests with at least three setae next to each other. Size: 1.9-3.0 mm ..... *Acalles misellus*

## DISCUSSION

Because of their secretive habits and obscure appearance all Dutch species of *Acalles*, *Kyklioacalles* and *Ruteria* are probably much under-recorded. Adults of all species can best be collected using beating trays, pitfall traps or by litter sampling (table 4). Leaf litter can be rough sifted in the field and taken home in a cloth bag. It can then be sorted out by hand or placed in an extraction funnel. Litter sampling can be very effective, especially in winter, when the weevils are hibernating in the leaf litter. Pitfall trapping is

less effective in winter, because then the weevils do not move around. It is my experience that tree beating in ancient and dense broad-leaved forests in the summer is the most effective way to take large numbers of specimens. Many tree species, but *Quercus* and *Fagus* in particular, often suffer from canker-like gnarls or carry dense aggregations of twigs and branches (fig. 28, 29). These witches' brooms are induced by the presence of various plant parasites (mites, mycoplasms).

These gnarls, when covered with excessive proliferations of twigs, broom-like aggregations of twigs and small branches, but also suckers, offshoots and shoots resulting from pruning, offer an ideal habitat. One important condition is that the sunlight must not shine directly on these twigs and branches.

Very often one may collect more than one species from one tree. As an example, in September 1999 I collected both *K. roboris* (1 specimen) and *A. misellus* (41 specimens) from one broom-like aggregation on *Fagus sylvatica*. On the same date and in the same forest, 14 specimens of *A. misellus* and 39 *K. roboris* were beaten from a single broom on *Quercus robur*. Several species can sometimes be found on one location in a single forest. Beating several tree species (i.c. *Quercus*, *Corylus* and *Fagus*) all within an area of approximately 100 m<sup>2</sup>, I was able to take four out of our six native species, viz. *K. roboris* (80 specimens), *A. misellus* (27 specimens), *A. commutatus* (2 specimens) and *R. hypocrita* (2 specimens).

Also in litter samples one may find more than one species. From four of 44 litter samples, I was able to extract *K. roboris* together with *A. misellus* and *A. commutatus*. Also litter sampling under trees with brooms or canker-like gnarls, can be very profitable.

Within the Netherlands, the province of Limburg, and especially its most southern part, clearly is the diversity hotspot for this group of weevils (table 5). There are no 10km-squares where all six species were recorded, one with five species, two with four species and two with three species, all situated in southern Limburg.

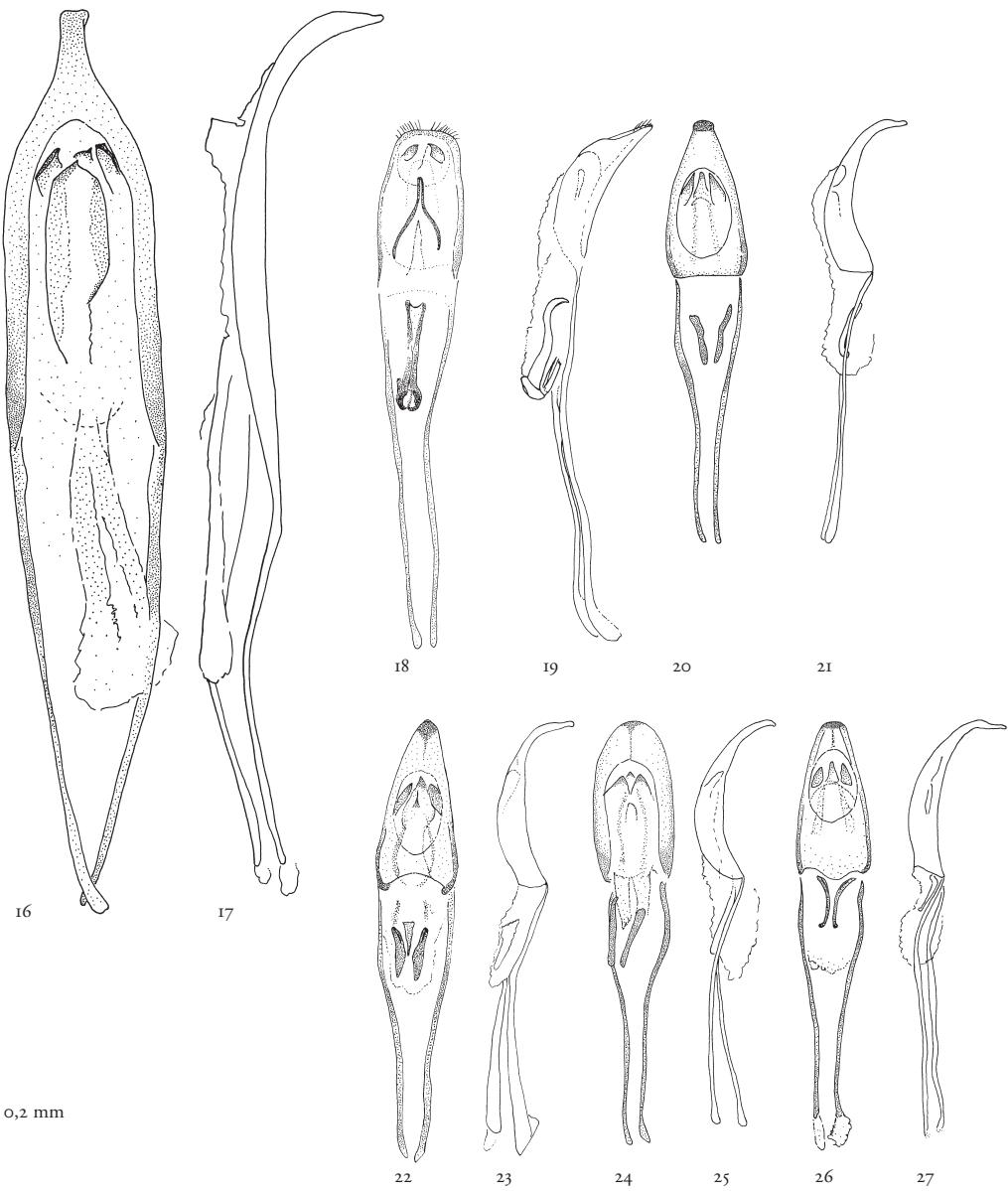


Figure 16-27

Aedeagus in dorsal and lateral view of *Ruteria hypocrita* (16, 17), *Kyklioacalles roboris* (18, 19), *Acalles ptinoides* (20, 21), *A. misellus* (22, 23), *A. dubius* (24, 25) and *A. commutatus* (26, 27).

Figuur 16-27

Aedeagus in dorsaal en lateraal aanzicht van *Ruteria hypocrita* (16, 17), *Kyklioacalles roboris* (18, 19), *Acalles ptinoides* (20, 21), *A. misellus* (22, 23), *A. dubius* (24, 25) en *A. commutatus* (26, 27).



Figure 28  
*Quercus robur* with broom-like aggregations of twigs.  
Photo Theodoor Heijerman.  
Figuur 28  
*Quercus robur* met heksenbezemachtig vergroeide takken. Foto Theodoor Heijerman

The distribution data presented here (and summarised in table 3) suggest that most species of *Acalles* and related genera are increasing both in number of individuals and in number of occupied squares. However, this clearly results from an intensified collecting activity. Because of the under-recording of these species trend information cannot be deduced from the available data. Nevertheless, in my opinion it can be stated that all species are endangered to a certain extent. All species, with exception of *A. ptinoides*, seem to have their optimum in old, dense deciduous forests with a rather humid climate and where little or no light reaches the forest floor. Main general threats include habitat loss and fragmentation of broad-leaved forests, and coniferation. It is a current trend in the Netherlands to create clearings in forests for the benefit of birds, butterflies, sand wasps and others, and to keep these clearings open by cattle grazing. This type of management clearly is a threat for species of *Acalles* and related genera, but also for many



Figure 29  
*Fraxinus excelsior* with broom-like aggregations of branches. From this tree at Bemelen (Limburg) several specimens of *Kyklioacalles roboris* and *Acalles misellus* were taken (June 7, 2003). Photo Theodoor Heijerman.  
Figuur 29  
*Fraxinus excelsior* met heksenbezemachtig vergroeide takken. Van deze boom werden enkele exemplaren van *Kyklioacalles roboris* en *Acalles misellus* verzameld (7 juni 2003). Foto Theodoor Heijerman.

other Coleoptera species that are associated with (dead) mouldy wood or depend on other microhabitats localised in ancient, dense, and largely unexploited forests.

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## SAMENVATTING

### De snuitkevergenera *Acalles*, *Ruteria* and *Kyklioacalles* in Nederland (Coleoptera: Curculionidae)

Op zowel de meest recente naamlijst van de Nederlandse kevers (Brakman 1966) als op de naamlijst van in Nederland voorkomende snuitkevers (Heijerman 1993) staan vijf soorten genoemd die behoren tot de genera *Acalles*, *Ruteria* of *Kyklioacalles*. Deze soorten zijn klein en onopvallend gekleurd en hebben bovendien een zeer verborgen levenswijze. Dit heeft tot gevolg gehad dat de dieren zelden verzameld zijn. Tevens was de soortstatus soms onduidelijk. Recent hebben enkele auteurs deze genera grondig gereviseerd. Hun publicaties waren de stimulans om het Nederlandse materiaal te bestuderen en nieuwe gegevens te verzamelen. Tijdens een aantal veldexcursies is speciale aandacht aan deze soortengroep besteed, hetgeen resulterde in een zeer groot aantal exemplaren. Na bestudering van het materiaal bleek dat er in het verleden determinatiefouten zijn gemaakt. Hierdoor komen twee soorten te vervallen voor onze fauna, namelijk *Acalles lemur* en *A. parvulus*. Daarentegen kunnen drie soorten aan de Nederlandse naamlijst worden toegevoegd, namelijk *A. dubius*, *A. misellus* en *A. commutatus*. In deze bijdrage wordt de nieuwe naamlijst gepresenteerd en worden alle inheemse soorten kort besproken, waarbij ondermeer ingegaan wordt op hun verspreiding in Nederland. Tenslotte wordt een vereenvoudigde determinatiesleutel gegeven voor de Nederlandse soorten.

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