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THE RESULTS OF BAT BANDING IN THE NETHERLANDS IN 1956.

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The investigation into migration and hibernation of Dutch bats which were started by Dr L. Bels in 1936, have been continued by the authors. They used the same technique in the artificial limestone caves of S. Limburg (southern part of the Netherlands) as described by Bels (1952) and van Heerdt & Sluiter (1953, 1954, 1955). The banding practice has been changed to the extent that only *Myotis dasycneme*, *M. daubentonii*, *M. mystacinus* and *M. nattereri* were ringed.

According to Table I the number of bats which were collected shows a decrease after the slight increase in 1955, and is about the same as it was in 1954 (cf. van Heerdt & Sluiter, 1954, 1956). The percentage of recovery, only available for the 4 species mentioned previously (as the other species are no longer banded) is the same in *M. dasycneme*, increased in *M. daubentonii* and *M. mystacinus*, decreased in *M. nattereri*.

Longevity data are recorded in Table II. New maximum ages became known of *M. myotis* ♀ ($14\frac{1}{4}$), *M. mystacinus* ♀ ($11\frac{1}{2}$), *M. nattereri* ♂ ($11\frac{1}{2}$), *Plecotus auritus* ♀ ($12\frac{1}{2}$) and *Rhin. hipposideros* ♂ ($10\frac{1}{2}$).

An interesting recovery was made on 1 February 1956 by Mr. van der Starre (Reeuwijk, in the centre of prov. S. Holland) who found a ♀ *M. dasycneme*, wearing a ring nr 16764 from the Royal Belgian Institute of Natural History. The animal had been banded by Mr. E. Mottoul in the „Grotte de Chauvaux” near Godinne sur Meuse, a village between Namur and Dinant (upper Meuse valley) on 17 April 1954. Investigating this (natural) cave, it proved to be small and not a nursing colony, as we supposed it would be. It is still more remarkable that on 7 November 1955 Mr.

van der Starre had recovered another *M. dasycneme* ♀ at Reeuwijk, which had also been banded in the upper Meuse valley, only a few miles from the second one (cf. van Heerdt & Sluiter, 1956). It is difficult to understand the wandering of these two animals.

On the other hand, a *M. dasycneme* ♀ nr. 20656, banded in the “Fluwelengrot”, at Valkenburg, on 4 January 1955 was recovered on 11 March 1956 at Rochefort (province Namur, Belgium), at a distance of 90 km S.W. of its banding site which indicates a roving spirit in this species.

A *M. daubentonii* ♀, nr. 20731, banded on 5 January 1955 in the “Nieuwe Groeve” near Heer (a suburb of Maastricht) has been recovered by us on 29 May 1956 in a nursing colony at Voordaan, a country estate near Groenekan (a small village appr. 4 km from Utrecht). This tiny animal covered a distance of 155 km from its winter haunt to its summer quarters.

Other “foreign returns” (for an explanation of this expression cf. Bels, 1952, p. 50) are reviewed in Table III.

On 28 July 1956 the authors paid a visit to the nursing colony of *Myotis dasycneme* at Kollum (Friesland), and banded 39 bats (in 1955: 116), 17 ♀♀ adults, 14 ♂♂ juveniles and 9 ♀♀ juveniles. Estimated total population: 100 specimens (in 1955: 200). The decrease is probably due to disturbance by an amateur biologist who visited the nursery a few days previously. As in 1955 the majority of the young were fully grown and capable of flight. Six bats were recovered, three of which had been banded in 1954 and three in 1955 in the same nursing colony. No bats banded in the hibernating quarters in S. Limburg were retaken.

The authors visited the nursery of the Lesser Horseshoe Bats at Ter Worm (cf. Sluiter & van Heerdt, 1954) on 25 July 1956. A total of 13 individuals were present (1955: 28), 6 of which could be caught with difficulty, as the temperature in the attic was high and the bats were very active. We captured 1 ♂ adult, 2 ♀♀ adults, not pregnant or lactating and 3 ♀♀ with small young, estimated to be 1 to $2\frac{1}{2}$ weeks old. No banded bats were recovered, though three ringed specimens were observed, which we were unable to catch, as we did not want to disturb the colony.

Table I.

species	1—7 January 1955					1—7 January 1956				
	total	♂	♀	Rec.	Perc.	total	♂	♀	Rec.	Perc.
<i>Barbastella barbastellus</i>	5	4	1	1	—	5	3	2	1	—
<i>Eptesicus serotinus</i>	—	—	—	—	—	1	1	—	—	—
<i>Myotis bechsteinii</i>	1	1	—	—	—	2	1	1	—	—
<i>Myotis dasycneme</i>	114	57	57	28	24.5	80	40	40	19	25
<i>Myotis daubentonii</i>	90	49	41	26	29	109	52	57	41	37
<i>Myotis emarginatus</i>	119	75	44	44	—	97	51	46	21	—
<i>Myotis myotis</i>	57	27	30	10	—	37	19	18	5	—
<i>Myotis mystacinus</i>	177	120	57	50	28	170	113	57	64	37
<i>Myotis nattereri</i>	108	61	47	24	22	97	65	32	17	18
<i>Plecotus auritus</i>	41	20	21	6	—	45	20	25	7	—
<i>Rhin. ferrum equinum</i>	9	9	—	4	—	8	7	1	1	—
<i>Rhin. hipposideros</i>	97	45	52	26	—	91	37	54	21	—

Table II.

Band Nr.	species	sex	banded	recovered	age at least
4022	<i>Myotis myotis</i>	♀	5— I—1942	5—I—1956	14½
12628	<i>Myotis mystacinus</i>	♀	21— II—1945	6—I—1956	11½
12689	<i>Myotis nattereri</i>	♂	21— II—1945	6—I—1956	11½
11033	<i>Plecotus auritus</i>	♀	27—XII—1943	3—I—1956	12½
13540	<i>Rhin. hipposideros</i>	♂	26—XII—1945	5—I—1956	10½

Other nurseries in S. Limburg (cf. van Heerdt & Sluiter, 1956) had not been inhabited by bats this summer.

Apart from the limestone caves, bats were banded and recovered in 19th century fortresses near Utrecht. Moreover, an inquiry was made into the population of the Noctule (*Nyctalus noctula*) in the woods near Utrecht. We banded 115 individuals and found a nursery in a beech near Bilthoven with 14 almost full-grown young on 30 July 1956.

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Table III.

Band Nr.	sex	species	date banded	place banded	cave nr.	date retaken	place retaken	distance km	direction
9835	♂	<i>Barbastella barbastellus</i>	5-1-'52	Cannerberg	30	10-5-'56	Neeroeteren n. Maaseik B.	30	N.
20656	♀	<i>Myotis dasycneme</i>	4-1-'55	Valkenburg	63/67	11-3-'56	Rochefort prov. Namur B.	90	S.W.
21061	♂	<i>Myotis dasycneme</i>	7-1-'56	Riessenberg	50/51	8-5-'56	's-Hertogenbosch	102	N.W.
21063	♂	<i>Myotis dasycneme</i>	7-1-'56	Riessenberg	50/51	27-8-'56	Uikhoven B.	11.5	N.
20731	♀	<i>Myotis daubentonii</i>	5-1-'55	Maestricht	44	29-5-'56	Groenekan n. Utrecht	155	N.N.W.
18564	♂	<i>Myotis emarginatus</i>	11-2-'51	Riessenberg	112	3-5-'56	Elsloo L.	14.5	N.
18829	♂	<i>Myotis mystacinus</i>	10-1-'52	Riessenberg	50/51	17-4-'56	Nieuwstad L.	26	N.N.E.
23221	♀	<i>Myotis mystacinus</i>	4-1-'56	Valkenburg	63/67	31-3-'56	Elsloo L.	11	N.W.
23305	♀	<i>Myotis mystacinus</i>	7-1-'56	Riessenberg	50/51	20-4-'56	Bunde L.	9	N.N.W.

B = Belgium
L = Limburg

For an explanation of the
cave-numbers cf. Bels,
Thesis, Utrecht, 1952.

van Heerdt & Sluiter (1956). — The results of bat banding in the Netherlands in 1955. Nat. Hist. Maandbl. 45, 5/6, p. 62.

Samenvatting:

De auteurs melden de resultaten van het vleermuis-onderzoek in Nederland gedurende het jaar 1956.

Vergeleken met de resultaten van het vorige jaar is het aantal gedurende de winterslaap in de mergelgrotten van Zuid-Limburg gevangen dieren weer enigszins teruggelopen (Tabel I). *Myotis dasycneme*, *M. emarginatus*, *M. myotis*, *M. nattereri* en *Rhin. hipposideros* zijn alle in aantal afgenomen. *M. daubentonii*, *M. mystacinus* en *Plecotus auritus* handhaven zich. Van de overige soorten zijn de aantallen te klein om conclusies te kunnen trekken.

Thans worden alleen nog de soorten *M. dasycneme*, *M. daubentonii*, *M. mystacinus* en *M. nattereri* geringd.

Twee interessante vangsten werden gedaan door de heer Van der Starre, die te Reeuwijk resp. op 7 november 1955 en op 1 februari 1956 een *Myotis dasycneme* ♀ vond. De eerste was geringd op 14 augustus 1955 in een (natuurlijke) grot te Furfooz, bij Dinant, de tweede op 17 april 1954 in een dito grot te Godine-sur-Meuse, gelegen tussen Namen en Dinant. Wij kunnen geen verklaring geven voor de zonderlinge zwerftocht van dit tweetal midden in de winter.

Een andere interessante vondst deden wij in een kraamkamer van *M. daubentonii* te Groenekan nabij Utrecht op 29 mei 1956. Van de 32 ♀♀, die de holle boom verlieten, was er één, nr. 20731, welke geringd was op 5 januari 1955 in de Nieuwe Groeve te Heer. Het diertje had een afstand van 155 km afgelegd.

Er werden voorts nog enige kraamkamers bezocht in Z.d. Limburg en één in Friesland, in welke laatste we 39 *M. dasycneme* ringden. Het onderzoek in de forten rond Utrecht werd voortgezet. Holle bomen in de bossen van Bilthoven en Groenekan werden geregeld gecontroleerd, waarbij 115 exs *Nyctalus noctula* en 32 *Myotis daubentonii* van een ring werden voorzien.

Wij willen allen, die, aan het Vleermuis-onderzoek in 1956 hun medewerking verleenden, hier danken, in het bijzonder Ir. D. C. van Schaïk, die ons, als steeds, met raad en daad terzijde stond.

Utrecht, december 1956.

FORAMINIFERA FROM THE CRETACEOUS OF SOUTHERN LIMBURG, NETHERLANDS, XXIII.

THE DEVELOPMENT OF SIGMOMORPHINA SOLUTA BROTZEN AND OF SIGMOMORPHINA BROTZENI nov. sp.

by J. HOFKER

Sigmomorphina soluta Brotzen, 1948, Sver. geol. Unders., Ser. C, No. 493, p. 53, pl. 8, figs 6—10; text-fig. 10, 16.

Sigmomorphina soluta Brotzen, Visser, Thesis, Leiden, p. 247, pl. 3, fig. 1.

Guttulina caudata (d'Orbigny), Visser, ibid., p. 237, pl. 4, fig. 6.

Sigmomorphina sp., Visser, ibid., p. 248, pl. 3, fig. 2.

In the upper layers of the "craie grise" in Belgium, then commonly in the "craie tuffoide" in Belgium and the Cr 4 of Holland, a small species of a "*Guttulina*" is found, which in the lowermost Mb develops gradually in a slightly more complex form. In the Craie grise and the Cr 4 the species shows some similarity with the Eocene species *Guttulina caudata*, but for the fact, that in the latter species the apical spine is formed by a thin, solid chalk spine, whereas in all specimens observed from our Cretaceous, the spine is not solid but is formed by the lengthened proloculus. In that way it is impossible to identify this species with the Eocene one, as Visser did (Specimens of the type-locality were available) (Fig. 1—3).

This first form of a grandiose development shows the few chambers of the test in a strictly quinqueloculine series, as is the case in typical *Guttulina* in the sense of Cushman and Ozawa (1930, Proc. U.S. Nat. Mus., Vol. 77).

But all species of *Sigmomorphina* also start with a quinqueloculine arrangement of the chambers, whereupon the typical sigmoline arrangement starts. Thus, in the Lower Mb, the beginning of that sigmoline arrangement is started by some chambers added to the primitive form, which chambers do not reach the apical end of the test (Fig. 4—7). In the Upper Mb, the Mc and the Md the species develops into stout forms, adding more and more sigmoline chambers to the first quinqueloculine part (Fig. 8, 9, 11—15), and this arrangement comes to