

# Notes on the nests and polymorphism of *Polistes (Aphanilopterus) crinitus multicolor* (Olivier) in the Netherlands' Antilles (Hym.: Vespidae, Polistinae)

by

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**ABSTRACT.** — 13 nests of various ages of *Polistes c. multicolor* were studied on St. Martin and Saba. It seemed that nests were started by swarming. Queens, intermediates and workers could not be distinguished by differences in length of the thorax.

During a visit to St. Martin and Saba, Netherlands' Antilles, specimens and some nests of *Polistes (Aphanilopterus) crinitus multicolor* (Olivier, 1791) were collected. Identification was done with a key by Richards (1978). Collections were made on St. Martin from 25.I. through 13.II.1982, and on Saba on 10.II.1982.

Most nests occurred on the underside of large stones protruding from steep hillsides. One nest was found attached to a dendroid cactus *Lemaireocereus* cf. *hystrix* (Haworth). Another nest hung on the underside of a large nest from the previous season. This indicates that, although the same locality is used at two consecutive seasons, the old nest is not used again.

The nests were of the gymnodomous, stelocytтарous type with one comb (O. W. & M. J. Richards, 1951). The combs were always attached to the substratum with one perpendicular pillar, and constructed of paper-like carton. The upperside of the comb made an angle of an average of  $131^\circ$  with the pillar (table 1). The pillar was attached to one corner of the comb, either just above one initial cell, or between two such cells (fig. 1 a, b). The way in which a comb is begun determines its final shape. If it is started with two cells attached to the pillar it becomes slender (fig. 1 b), while if only one cell is attached it becomes broad (fig. 1 a). The one

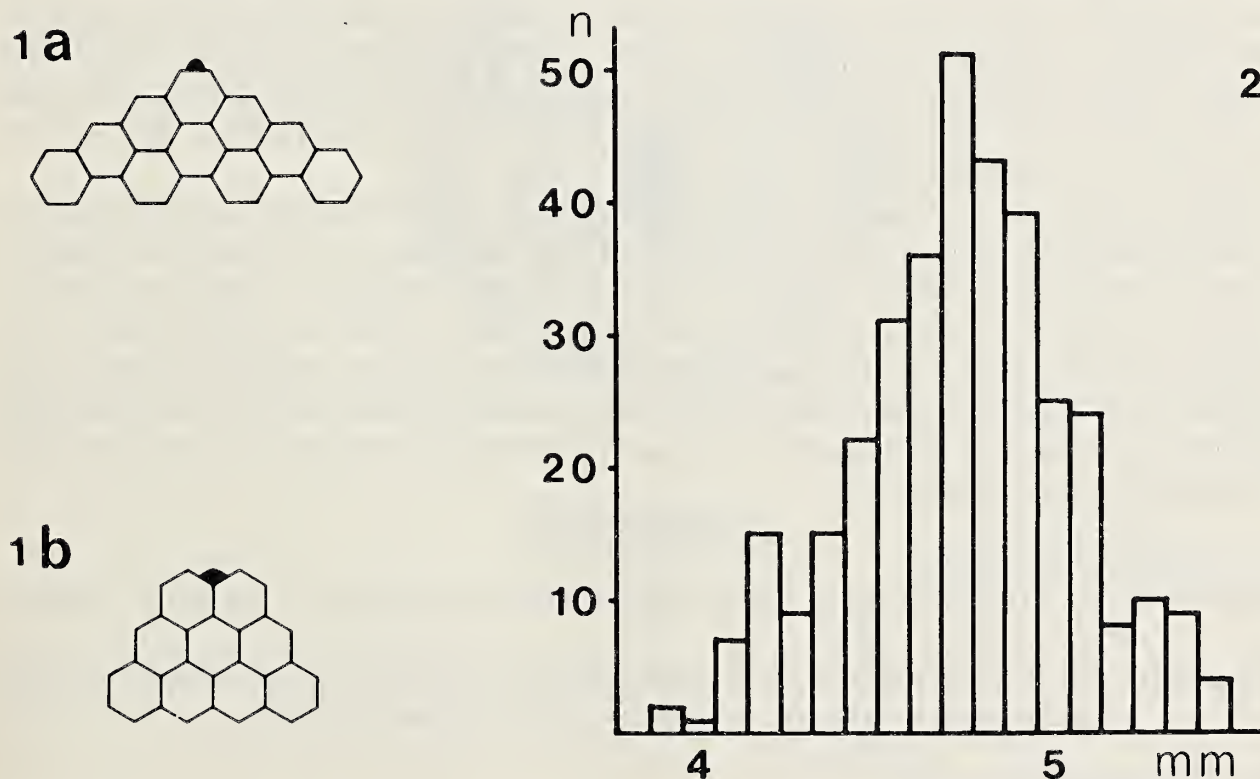


Figure 1. Diagram of the nest of *Polistes c. multicolor*. The pillar is attached to one corner of the comb; either above one initial cell (a) or between two such cells (b). Figure 2. Histogram of the length of the thorax measured from collar up to and including the metanotum of *Polistes c. multicolor*.

Table 1. Data of thirteen nests of *Polistes c. multicolor* collected from Saba and St. Martin, Netherlands' Antilles; the numbers represent the number of wasps present on the nests at the moment of collection.

	S A B A				S t. M A R T I N								
nest number	1	2	3	4	5	6	7	8	9	10	11	12	13
♀♀	4	2	1	2	2	6	3	3	6	2	4	6	
♂♂									2	1			
cells with eggs	10	8	16	3	10	12	5	13	39	8	11	18	
with larvae	35	17		11	12	18	13	14	19	23	12		
with pupae	13	7			7	1	3	9	6	5	4		
total of cells	58	32	16	14	29	31	21	36	64	36	27	18	227
angle between pillar and comb	?	155	135	125	?	150	125	115	?	125	120	?	
generations in the comb	2	2	1	1	2	2	1	2	3	2	2	1	

large nest of the previous season mentioned above was built out on both sides of the pillar. The edge formed a straight line, with the pillar in the middle.

Table 1 gives details about the nests, and the wasps that were present on them at the moment of collecting. The wasps are not completely sampled, since the nests were collected at day-time while many wasps were flying actively about.

It is striking that even some very small nests (e.g. numbers 4 and 12) were occupied by more than one female. Such small nests contained 14 to 21 cells. The cells of these nests contained one generation of eggs and young larvae which suggests that they have been started from swarms. Larger nests, with a second generation of eggs or larvae, contained from 27 to 36 cells. Two large nests with three generations of eggs and larvae had 58 and 64 cells. One nest of the previous season consisted of no less than 227 cells.

The size of the female wasps was measured from the length of the thorax from the collar up to and including the metanotum. In the material (349 specimens), wasps from the Rijksmuseum van Natuurlijke Historie at Leiden and the Zoologisch Museum at Amsterdam were included, as well as the wasps recently collected by the author. It turns out that the above mentioned measurements show a proximately normal distribution (fig. 2). This means that it is not possible to discriminate queens, intermediates and workers by their size only. The collections from the three islands of St. Eustatius, Saba and St. Martin were compared. No difference was found between these populations.

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