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A NEW SPECIES OF BAK (ACARI : CHEYLETIDAE) FROM THAILAND, WITH A KEY TO SPECIES

BY U. GERSON* and A. FAIN**

APIS CERANA AND CHEYLETIDAE
BAK N. SP.
THAILANDE

SUMMARY : Bak furcatus sp. nov. (Acari : Cheyletidae) is described from debris found in hives of the Asian honey bee, Apis cerana Fabricius, collected in Thailand. A summary of the habitats and geographical distribution of the nine known species of Bak is appended, along with a key for their separation.

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INTRODUCTION

The genus Bak Yunker at present includes eight species, collected from different parts of the world. B. sanctaehelenae Yunker (1961), deleoni Yunker (1961) and ozarkensis Thewke and Enns (1974) were obtained from forest trees or soil in the U.S.A. B. elongatus Patxot and Goff (1985) was found in litter in Hawai’i and micidus Summers and Price (1970) was collected from rotted Tourneyla leaves in the Galapagos Islands. B. ligyscutatus Flechtmann (1971) was obtained from decomposing organic material in São Paulo, Brasil, whereas both payatus Corpuz-Raros and Sotto (1977), and trun­catus Corpuz-Raros and Sotto (1977) were found in Laguna, The Philippines; the former in house dust and soil, the latter in leaf litter. The new species to be described below was obtained from debris collected in bee hives in Thailand. Nothing is known about the biology of these species; their massive mouthparts, however, suggest that they are predaceous, like many other members of the family Cheyletidae.

The terminology used is based on SUMMERS and PRICE (1970), while setal nomenclature follows FAIN (1979). All measurements are in microns.

Bak furcatus sp. n.
(Figs 1-4)

FEMALE : Idiosoma with 11 pairs of dorsal setae (including two anals) plus pleuroventral humerals (80 long). Setae vi, ve, sc i and se e located on delicate propodosomal plating which is rounded posteriorly. Setae d2 situated just behind plating.

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Fig. 1-2: *Bak furcatus* sp. nov. female.
1. — Dorsal view. 2. — Leg I, dorso-lateral view of genu, tibia and tarsus.
Setae $d_3$ and $l_3$ placed in a row about midway between the propodosomal plating and legs III. Each member of setae $d_4$ arises from a delicate platelet located between coxae III, with another platelet placed between them. Setae $d_5$ present between coxae IV, and setae $a_3$, $a_2$ and $a_1$ arranged in a longitudinal row beyond them. All dorsal setae, except anals, are furcate along their distal two-thirds. Setae $vi$, $d_5$ and $a_1$ 26 long, $ve$, $sc_i$, $sc_e$, $d_2$, $d_3$, $l_3$ and $d_4$ 17-21 long, setae $a_3$ and $a_2$ 7-10 long. Anterior ventral setae ($ic_1$) 16 long, $ic_3$ 68 and setae $ic_4$ 14 long. Genital setae: $g_1$, $g_3$ : 20, $g_2$ : 24 and $g_4$ : 22 long. Length of leg I (base of femur to tip of claw): 175 long, leg II: 145, leg III: 155 and leg IV : 170. Chaetotaxy of legs I-IV (solenidia in parentheses) : coxae 2-1-2-1; trochantera 1-1-1-1; femora 2-2-1-1; genua 1(1)-1-1-0; tibiae 4(1)-4-4-4 and tarsi 8(1)-7(1)-7-7. Tibial solenidia minute (4-5 long), tarsal ones slightly longer (7-8). Legs III and IV thicker than two anterior legs and their claws about twice as large as those on legs I and II. All femora carry a dorsal furcate seta, similar to dorsals. Gnathosoma 215 long, about half of idiosoma (440). Palpfemur slightly longer than wide, with one dorsal seta,
40 long, and two ventral setae, outer 21, inner 28 long. Palp genu ringlike, with a dorsal and a ventral seta (23 and 12 long, respectively). Palptibia with a dorsal seta near tarsus, 42 long, and a ventral seta, 45; claw with two basal teeth, the proximal tooth large, rounded, the distal tooth thumb-like; all setae on last three segments simple, hair-like. Palptarsus with a minute sensillum and 2 sickle-like as well as 2 comb-like setae, outer comb with 24-26 teeth, inner with 32-34 teeth. Tegmen and protegmen with delicate dorsal longitudinal striations. Each peritreme with 13 cells: one central, descending; four in a submedian ascending position and another eight lateral, descending. Superior adoral setae 6 long, inferior adorals 25. Hypostome with delicate longitudinal striations and one pair of hair-like setae, 35 long.


*Bak furcatus* is unique in having furcate dorsal setae.

Remarks: All known species of *Bak* appear to be quite similar. While the elongated body (with caudal legs IV), the presence of claws on all tarsi, the lack of eyes and the full complement of palp tarsal setae (two sickle-like and two comb-like setae) define the genus, several additional traits, variable in other cheyletid genera, are rather conservative within *Bak*. These include the form of palp claws and peritremes, the distribution of the faint dorsal plating and setae (with *vi* usually larger than *ve*), the relative sizes of the three pairs of ventral body setae and the minute solenidia on tarsi I. Some of the remaining variable characters are used in the appended key to species.

**Key to the species of Bak Yunker**  (based on published descriptions)

1. Dorsal setae thin, hair-like .............. 2
   — Dorsal setae barbed or bifurcate ............ 5

2. Central peritremal cell in an almost transversal position ........................................ 3
   — Central peritremal cell in an almost longitudinal position .................................... 4

3. Genual formula 2-0-1-0, 4 setae on propodosomal shield .........................................  deleoni Yunker
   — Genual formula 2-0-0-0, 2 setae on propodosomal shield ........................................  micius Summers and Price

4. Genual formula 2-1-1-0, femoral formula 2-2-1-1 ......... sanctaehelenae Yunker
   — Genual formula 2-0-1-0, femoral formula 1-1-1-1 ....... ligyscutatus Flechtmann

5. Dorsal setae bifurcate ...... furcatus sp. n.
   — Dorsal setae uniramous .......................... 6

6. Dorsal shield tapering posteriorly, femoral formula 2-2-2-1 payatus Corpuz-Raros and Sotto
   — Dorsal shield truncate posteriorly, femoral formula 2-2-1-1 .................................... 7

7. Tarsal formula 9-7-7-7 ................................ 8
   — Tarsal formula 9-8-8-8 ..........................      truncatus Corpuz-Raros and Sotto

8. Genual formula 2-1-1-0, dorsal setae clavate...
   — elongatus Patxot and Goff
   — Genual formula 1-0-0-0, dorsal setae tapering ..................................................... ozarkensis Thewke and Enns

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