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ABSTRACT

The paper deals with the description of two new nematode species of the genus *Abbreviata* as well as a redescription of another hitherto inadequately described species *A. achari* (Mirza, 1935).

INTRODUCTION

_Rudolphi* (1819) created the genus *Physaloptera* with *P. clausa* as its type species and placed it within the family Physalopteridae; and several species were subsequently described under it. In 1915–16 it was subdivided by Seurat on the basis of dentition, a character which, however, was not given much importance by Travassos (1920) who preferred to lay systematic stress on the structure of the female genitalia and the pedunculate condition of papillae in the male. On the other hand Ortlepp (1922) did not agree with either of these authors and instead, on the basis of the types of the branching of uteri created di-, tetra- and polydelphys groups; these groups however were held untenable by Irwin-Smith (1922) as their diagnostic characters were entirely internal and necessitated dissection. However, on the basis again of dentition Schulz (1927) removed some of the species included under the above genus and placed them under two other genera, one his new genus *Skrjabinoptera* Schulz, 1927, and another, an already known but merged one *Abbreviata* Travassos, 1920. While this new arrangement was followed by most subsequent authors like Baylis (1934), Morgan (1943 and 1946), Skrjabin, Schikhobalova and Sobolev (1949) and Chabaud (1956); Yamaguti (1961) provisionally retained all the species under the same original genus *Physaloptera*. However, it is rather strange that Mirza...
(1935) should have placed his new species *achari* under the genus *Physaloptera* instead of *Abbreviata*, because from both, his description and figure it is very clear that he was not unaware of marginal rows of teeth and that he had also emphasized (p. 72) that "the form of the uteri and the arrangement of the teeth and denticles on the lips should also be taken into consideration".

The present authors, while working on the unnamed helminth collection of the Zoological Survey of India came across certain nematode specimens collected from the garden lizard (*Calotes versicolor*), the palm squirrel (*Funambulus palmarum*) and the monitor lizard (*Varanus monitor*). On examination it was discovered that the parasites from the first host belong to *Abbreviata achari* (Mirza, 1935), a species which unfortunately, being inadequately described by Mirza as just mentioned above, was not given a separate recognition by Baylis (1939).

The nematodes from the second host have been found to be hitherto unrecorded although similar specimens were obtained, as already stated above, not only from the palm squirrel but also from the monitor lizard by Mirza who however failed to rank them as new species considering them instead only as intermediary forms between *Physaloptera paradoxa* and *P. varani*.

The nematodes obtained from the third host (*Varanus monitor*) do not tally either with the above-referred parasites collected by Mirza from the same host or with any other known nematode from this host.

The material is dealt with as follows:

**Family Physalopteridae**

*Abbreviata achari* (Mirza, 1935) (Figs. 1 a, b, c)


*Male.*—Body 11.44–13.31* long, 0.33–0.35 at maximum width; head consisting of two lateral lips, each provided with a large externo-lateral tooth and two submedian ones, together with a row of small denticles running in between; oesophagus divided into two portions jointly measuring 2.3–2.7 long; spicules two, chitinised (though according to Mirza

* All measurements are in millimetres.
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they were not well chitinised), unequal and dissimilar, right smaller and broader, 0.08–0.11 long, left longer and thinner, 0.28–0.39 long; papillae, four pairs pedunculate, and six pairs ventral, out of which latter preanal and first two postanal placed near cloaca and remaining three situated on tail but contrary to Mirza’s observations not stalked; tail 0.28–0.42 long; cuticular ornamentation confined around cloaca which according to Chabaud is key character; caudal alae well developed and much broader, 0.5–0.66 × 0.3–0.31 in diameter, more or less oval-shaped, appearing prominent enough to permit the species to be easily distinguished.

**Female.**—Body 19.2–21.12 long; 0.43–0.45 at maximum width; oesophagus 3.5–3.52 long; vulva posterior to the base of oesophagus, 4.18–4.24 from anterior end; vulvar lips slightly raised from body surface; vagina muscular, 0.28–0.33 long; egg chamber 0.55–0.77 long, 0.13–0.17 in diameter; common trunk of uterus 0.28–0.3 long and giving rise directly to four uterine branches; eggs 0.044–0.055 × 0.022 in diameter.

**Discussion.**—Baylis (1939) found it difficult to distinguish this species from *paradoxa* on account of the inadequate description, but Morgan (1946) and Chabaud (1956) gave it a ready validity holding that large caudal alae,

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**Fig. 1.** *Abbreviata achari* (Mirza, 1935). (a) Anterior region, (b) Posterior region of male; (c) Female genitalia showing four branches of uteri.
small eggs and cuticular ornamentation confined to periphery of cloaca were sufficiently characteristic. It is to be carefully borne in mind that Mirza did not lay any stress at all on the systematic value of spicules, the importance of which character has currently been fully realised. The present specimens have been found to differ from *paradoxa* not only in that there are smaller spicules but as well as in the tail being much shorter and in the number and arrangement of caudal papillae. These papillae are as follows: in the case of *paradoxa* there are in front of cloaca three papillae, and postanals appear to be numerically greater (Ortlepp, 1923, recorded five; Linstow, 1908, six; and Monning, 1924, seven), whereas in the case of *achari* there are in front of cloaca only two and postanals do not exceed five.

*Abbreviata kolayatensis* sp. nov. (Figs. 2 a, b, c)


![Diagram](image)

**Fig. 2.** *Abbreviata kolayatensis* Soota and Chaturvedi. (a) Anterior region, (b) Posterior region of male; (c) Female genitalia showing two branches of uteri,
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**Description.**—*Male*: Body, 11·11-14·03 (14·03)* long, 0·34-0·4 (0·4) at maximum width; entire oesophagus, 2·2-2·48 (2·48) long; spicules unequal and dissimilar, right smaller and broader, 0·11-0·17 (0·17) long, left longer and thinner 1·75-1·76 (1·76) long; caudal alae well developed 0·77-0·99 (0·99) × 0·33-0·4 (0·4) in diameter; caudal papillae twenty-one, four pairs pedunculate, of which latter two preanal and two postanal; three sessile preanal; two pairs ventral behind cloaca; and remaining three pairs arranged on the tail in the typical way; in one specimen cephalic alae developed.

**Female.**—Body 16·4-18·15 long, 0·33-0·5 at maximum width, entire oesophagus 2·2-2·6 long; vulva 3·25-3·41 from anterior end; vagina 0·94-1·43 long; egg-chamber 0·72-1·27 long; common trunk of uterus absent; two uterine branches arising from the egg chamber and after running posteriorly dividing further into two; eggs 0·033 × 0·033 in diameter; caudal alae feebly developed; there are well-developed reversible cephalic sheaths in both sexes.

**Discussion.**—The present species comes closest to *A. varani*, described by Parona (1889) from the stomach of the monitor lizard (*Varanus monitor*) from Pegu, in having the same dichotomous branching of the uterus and in being harboured by the same host, but differs from this species in that the common trunk of uterus is absent in the female and also the spicules are smaller in the male. It also comes close to *Physaloptera clausa* and *P. bonnei* in the origin of the uterine branches and in the absence of the common trunk of uterus but differs from these two in body measurements as well as in the number and arrangement of caudal papillae.

*Abbreviata mirzai*† sp. nov. (Figs. 3 a, b, c)


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* Measurements in parentheses refer to the holotype.
† The species is named after Dr. M. B. Mirza, who first recorded the specimens from palm squirrel.
Description.—Male: Body 24–25·5 (25·5) long, 0·71–0·99 (0·99) at maximum width; oesophagus entire 3·36–4·4 (4·4) long; spicules two, dissimilar and unequal, right smaller and broader 0·25–0·28 (0·25), left longer and thinner 2·75–3·14 (3·14); papillae, much obscured by cuticular ornamentation, four pairs pedunculate (though not distinctly so), two of which preanal and two postanal; three sessile (though central one not distinct), ventral, anterior to cloaca; six pairs postanals, ventral, of which two (one being rather indistinct) lie close to posterior margin of cloaca and four remaining are distributed over tail, of which first two, viz., third and fourth which are somewhat elongated or oval, lie close together and the second two, viz., 5th and 6th are placed nearly equidistantly.

Female: Body 28·5–30 long, 1·2–1·4 at maximum width; oesophagus 4·07–5·88 long; tail 0·66–0·88; vulva 5·17 from anterior end; eggs 0·04 in diameter; mode of origin and branching of uteri not clearly discernible due to the body region being crowded with eggs.

Discussion.—This species was first reported by Mirza (1934) from two different hosts, a squirrel (Funambulus palmarum) and a lizard (Varanus indicus). But though occurring according to Mirza in two entirely different hosts they showed certain similarities of characters with those of Physa-
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*loptera varani* and *P. paradoxa*, viz., in the mode of uterine origin as exhibited by *varani* and in the dental arrangement as shown by *paradoxa*. However, now it has been recognised that the latter character is basically similar in both the species and in fact mainly on the basis and differentiation of labial dentition Schulz (1927) had split up the above genus into four genera. The present species differs from the above two species as well as its another allied species *P. sciuri* in various body measurements and in the number and arrangement of caudal papillae.

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