

differences which occur in the filarial incidence and clinical manifestations of the disease in neighbouring villages or districts.

It is not likely that individual efforts will settle these problems, and prophylactic and curative measures cannot be evolved unless a proper understanding is arrived at as regards the ætiology and pathology of the infective process.

It was in India that the problem of malaria was solved. The problem of filariasis has already been partly solved by Manson, but as regards prophylaxis and cure we are still very much in the dark. It would be very fitting if this work could be completed in India, for filariasis is to tropical surgery what malaria is to tropical medicine. The Indian Science Congress could do much by adding the weight of its authority to a demand for a "Filariasis Commission," or some such organised effort to unravel these hidden aspects of filariasis.

CLINICAL EVIDENCE FAVOURS THE VIEW THAT EARLY TREATMENT IS LIKELY TO BE VERY SUCCESSFUL.

The treatment of filariasis has been very disappointing, and this is not to be wondered at when one considers our ignorance regarding its detailed pathology. It is quite possible that early infections could be effectively controlled, before the parent worms had, as it were, dug themselves in. Unfortunately early diagnosis is not yet possible.

Tartar emetic and many other well-known vermicides have been tried without much success. The author has, however, been much impressed with the fact that the persistent use of "soamin" hypodermically or intravenously seldom fails to give some measure of relief with regard to the many and very distressing symptoms. One has to speak with great caution when discussing such a subject, as the symptomatic vagaries of filariasis are of common knowledge. The disappearance of microfilariae from the blood is also not a test of any great value. It would appear that in *early cases* soamin does do something to alleviate symptoms. If this is true, other arsenical derivatives may well be more efficacious. One is most impressed by the testimony of young Indian doctors who have suddenly discovered themselves to be the victims of filariasis by the appearance of some acute symptom for the first time. These can be regarded as fairly reliable witnesses. Several cases of this sort have come to the notice of the authorities. One was a young doctor, who worked with his own microscope. A sharp attack of fever associated with swellings of the inguinal lymph glands aroused his suspicions and he at once examined a smear of his night blood, to find it full of microfilariae. Intravenous injections of soamin were at once started with the following dosage: bi-weekly doses, two of gr. 1, two of gr. 2, and two of gr. 3, i.e., 12 gr. in all. After a week's interval, this course was repeated and great improvement has

followed. A most important advance in the treatment of filariasis would be the discovery of a test by means of which an early diagnosis of infection could be established. Drugs which are ordinarily of no avail might well be more efficacious when pitted against young filariae, which are lying loosely in the tissues, not yet protected by a resistant fibrous tissue capsule.

Mortality from filariasis, though seldom direct, is probably enormous.

The devious ways in which filarial affections manifest themselves can only be appreciated by a long residence in the tropics. Cellulitis, gangrene, erysipelatous attacks, abscesses, acute exacerbations of fever, chylous extravasations, are only a few of the ills which are well known to be filarial in origin and which may kill outright, or wear away a patient. It is by its innumerable complications, therefore, that the mortality of filariasis is to be estimated and there can be no doubt whatever that the total mortality is very considerable.

Clinical evidence proves that the sick-rate involved, and therefore the industrial loss, is very great.

One has only to realise the clinical history of a case of elephantiasis of the legs or scrotum, or of recurring chylous extravasation, to appreciate the truth of this statement. In many cases chronic invalidism results, in others wage-earning capacity is much lowered by recurring exacerbations of a febrile or inflammatory nature. It is very difficult to estimate the numbers who are thus afflicted, but in endemic zones many thousands must be involved.

Has the time not arrived for organised and co-ordinated enquiry on the proper scale into the filariasis problem of India?

A NEW SPECIES OF ANOPHELINE
A. PSEUDOJAMESI COMMON IN
BENGAL.

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DURING an anopheline survey of Bengal, financed by the Indian Research Fund Association, which has been carried out during the recent financial year (1926-27), a species in the larval state was encountered, which was at first, in the absence of actual specimens or of any more complete description than that given by Stephens and Christophers (1902) or by James and Liston (1911), thought to be *pulcherrimus*. This idea, however, became suspect when a specimen hatched out and the imago presented itself as *jamesi*, and was diagnosed as such in spite of the larva in the case being very unlike that of *jamesi* (see Figs. 1 and 2).

When in the course of the survey, however, very many more specimens (from all over Bengal) were obtained and the larva was invariably* distinct in several respects from *jamesi*, the matter was studied afresh and it was then found that the adult was also constantly distinct from *jamesi* (Fig. 3); in one male specimen the genitalia being examined and noted to be different from this species (Figs. 4 and 5). It was on these grounds considered to be new, and we have named it *pseudojamesi*.

In our study of the species we came to learn that the larva is peculiarly and uniformly dark in coloration, a deep sage-green, and of a delicate and fine structure; which points enabled one to distinguish them by the naked eye, e.g., when mounted serially with other species on a glass slide for microscopic examination. Moreover,

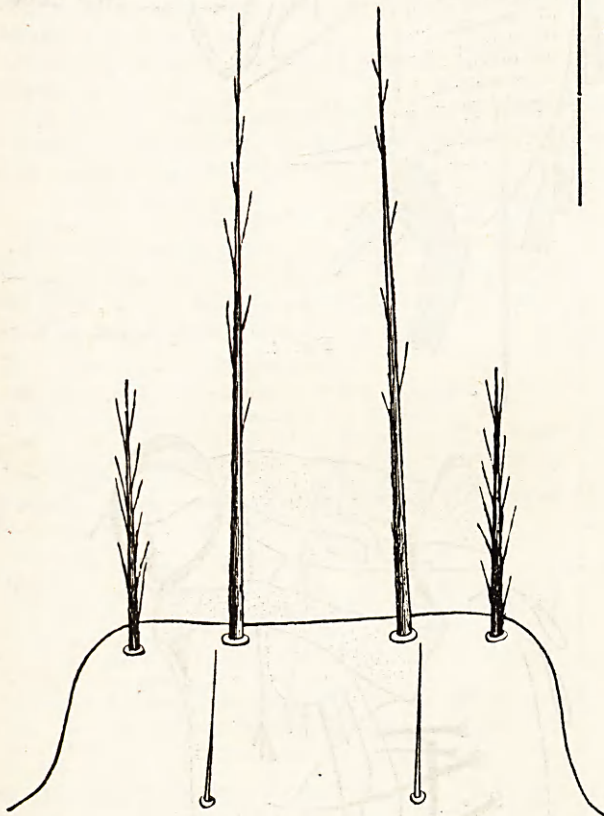


Fig. 1.

they required special care as compared with well-known species to ensure their hatching out.

With regard to the microscopic structure of the larva and adult, we will now give as complete an account as possible, adding a note on the habitat of the larva.

STRUCTURE OF THE LARVA.
(See Figs. 1 and 2.)

General Characters. All chitinous structures uniformly pigmented dark greenish-grey.

* No annectant forms have at any time been discovered.

Head:—*antenna:* short spines all over, and darkly pigmented throughout its whole length.

clypeal hairs:—(See Fig. 1.) *antero-internal:* very long, thin, straight, pigmented dark grey. Slight fraying usually noticed, but in some specimens simple hairs have been observed. *antero-external:* short, straight, and distinctly frayed; about half the length of the antero-internal. *Posterior:* short, thin, straight, simple, and situated in a line with the antero-internal.

frontal hairs: six well-developed long branched hairs.

occipital hairs: both simple.

Thorax: antero-thoracic hairs are of the normal type; they carry a pair of rudimentary palmate hairs.

Abdomen:—*palmate hairs* on segments 1—2 rudimentary; on segments 3—7 well-developed; leaflets with short filaments about a quarter of the blade in length. (See Fig. 2.) *dorsal plaques* are uniformly pigmented dark grey and oval in shape.

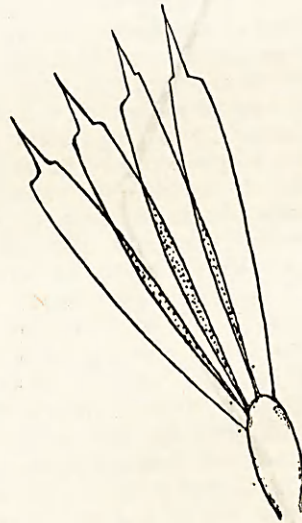


Fig. 2.

DIAGNOSIS FROM CERTAIN OTHER LARVÆ.

	<i>A. jamesi</i> .	<i>A. maculipalpis</i> .	<i>A. pseudojamesi</i> .
(a) Clypeal hairs.	thickly frayed	distinctly frayed	very fine fraying (sometimes).
Antero-internal	thickly frayed	distinctly frayed	thin fraying, 1/3 the length of ant-int.
Antero-external	heavily branched; 2/3 of ant-int. in length	thick fraying, 2/3 of ant-int. in length	thin fraying, 1/3 the length of ant-int.
Posterior	heavily branched	simple, relatively long	simple, short and thin.
(b) Palmate hair on abdominal segts.	well-developed on 2—7 segts.	well-developed on 1—7 segts.	well-developed on 3—7 segts.
Filament	long and sharp	short and blunt	short and sharp.

THE LARVAL HABITATS IN BENGAL.

The species has been captured in the following places, which illustrate its type of breeding place:—

Districts.	Place.	Breeding places.
(1) Malda	Rohanpur	River Purna Babamar (a dying river with much floating vegetation).
(2) Khulna	Khulna (town)	temporary pool of water.
(3) Mymensingh	Bidyagunj	borrow-pit for huts.
(4) Nadia	Badkulla	large tank.
(5) „	Kanchrapara	the Kulia Bhil.
(6) Burdwan	Memari	long railway cutting (borrow-pit).
(7) „	Katwa	borrow-pit for railway line.
(8) Faridpur	Pachooria	long railway-cutting.
(9) Noakhali	Chaumuhani	long railway-cutting.

THE ADULT STRUCTURE (Figs. 3, 4 and 5).

Both the male and female have their legs with spotted tibiae and femora and the hind legs have

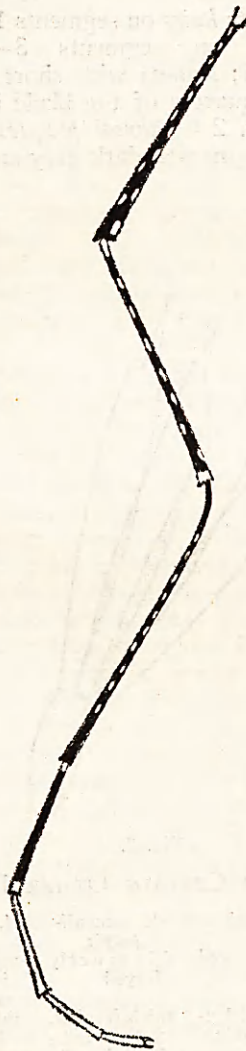


Fig. 3.

the 3 terminal segments plus the articulation on the second inter-tarsal joint continuously white. The first inter-tarsal joint is also banded (see Fig. 3).

In all other respects except in the male genitalia the species is similar to *A. jamesi*.

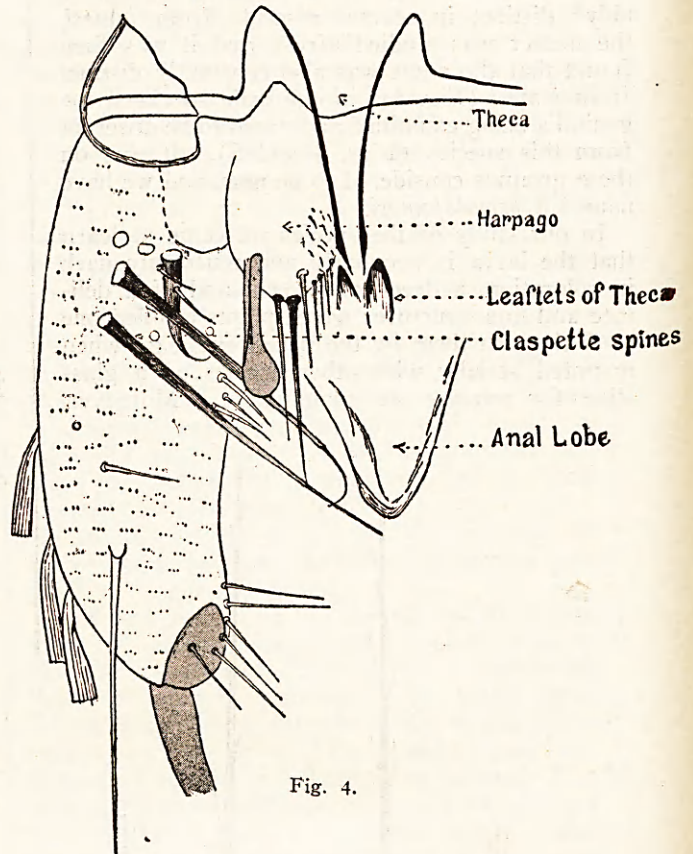


Fig. 4.

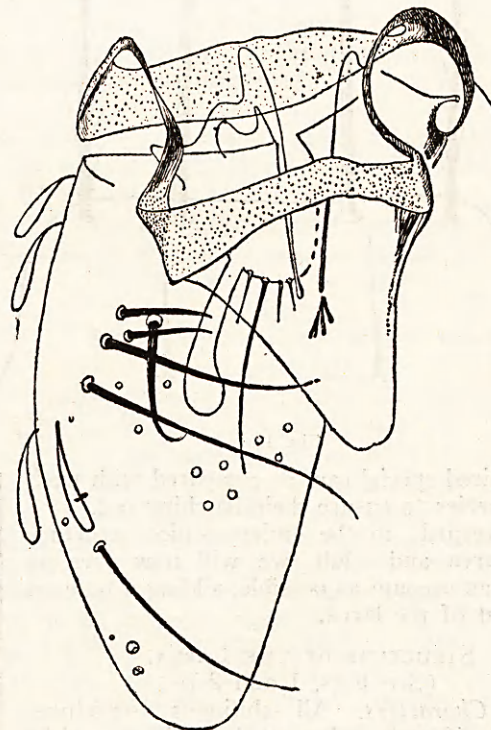


Fig. 5.

Male genitalia:—(as in Fig. 4): claspette spines 5, disposed as in the figure, with a

horizontal line of 3 and a fourth spine immediately below forming part of the cluster. The 4th spine is longer and stouter than any of the first three. There is a 5th slightly below and to the outside of the 4th. The inner portion of the lower half of the ventral surface of the clasper is beset with 6—8 long straight hairs arising from papillæ. Accessory hairs are numerous and very small. About 6—8 medium size accessory hairs below the cluster of spines.

Harpago unilobular with ventral club. Apical hair a little longer than the club. An accessory hair with thick chitinous base external to the apical hair and about $\frac{3}{4}$ of its length. Internally about half-a-dozen long thin hairs with basal papillæ; minute hairs cover the inner portion of the organ.

Theca more than half the length of the clasper, with thick chitinised margin and rather strongly chitinised leaflets.

Anal lobe reaches slightly below middle of clasper.

The 5th figure is *A. jamesi* for comparison and it shews the distinctive points from *pseudojamesi*. It is taken from Christophers (1916).

PATHOGENICITY.

Of course nothing can be said regarding its pathogenicity, but in our 6 months survey we took 101 of the species as compared with 316 *aconitus* and 220 *culicifacies*.

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James and Liston (1911).—*The Anopheline Mosquitoes of India, 2nd Ed.* Thacker, Spink & Co., Calcutta.
Christophers, S. R. (1916).—The Male Genitalia of *Anopheles* (with plates). *Indian Journal of Medical Research*, Vol. III, p. 371.

EXPLANATION OF PLATES.

- Fig. 1. the larval clypeal hairs of *A. pseudojamesi*.
" 2. the larval palmate hairs, a few leaflets, of *A. pseudojamesi*.
" 3. the adult female hind-leg of *A. pseudojamesi*.
" 4. the male genitalia of *A. pseudojamesi*.
" 5. and for comparison those of *A. jamesi*.

A SHORT REPORT ON SOME THERAPEUTIC INVESTIGATIONS CARRIED OUT AT THE RANCHI EUROPEAN MENTAL HOSPITAL.

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DURING the past year my four assistants have been kind enough to investigate for me certain forms of treatment for psychotic disorders which have been brought to our notice. The results of the investigations are as follows:—

(1) Treatment by induction of aseptic meningitis:

In October, 1923, Dr. Carrol published in the *New York Medical Journal* a paper entitled: "Aseptic meningitis in combating the dementia præcox problem." Further investigation of this

form of treatment was later carried out by Drs. Carroll, Barr, Barry and Matzke. The results of their observations were published in the *American Journal of Psychiatry* in April, 1925. As these investigators remark, it has often been observed that improvement sometimes occurs in dementia præcox cases during the leucocytosis of infectious processes. Some years ago, Lundvall of Sweden noted that dementia præcox patients who were losing ground exhibited a leucopenia, whereas when they were improving they shewed a leucocytosis. The final conclusions reached by these four American observers may be summarised as follows: (1) The injection of sterile inactivated horse serum into the spinal canal produces an aseptic meningitis with marked physical reactions. (2) That the mental condition of 66 per cent. of cases of dementia præcox so treated shows improvement which has lasted from 2 to 11 months, several enjoying remissions. Insight is often gained. (3) That a fundamental principle not yet fully determined is involved, the further investigation of which may throw much light on the etiology of dementia præcox.

At my request, Dr. J. N. J. Pacheco undertook to apply this form of treatment to six selected cases of dementia præcox. The routine followed was: A day prior to the beginning of the treatment, the patient was admitted into the infirmary ward and put to bed on a milk diet. Calomel ($\frac{1}{2}$ gr.) was given in the evening and a saline purge in the following morning. It was decided to inject 20 c.c. of horse serum. A sufficient quantity of blood was drawn from the vein of a horse and allowed to stand in test tubes. The supernatant serum was drawn off. As much difficulty was experienced in getting enough blood for repeated injections, we tried the horse serum manufactured by Messrs. Burroughs Wellcome & Co. Unfortunately no reaction could be got with this serum, a fact we attributed to the possible inclusion of preservatives in the serum. Finally, a supply of fresh inactivated serum was got from Kasauli. As a rule 20 c.c. were injected into the spinal canal through the third lumbar interspace. To render the injection painless, 1 c.c. of apothesine was injected locally. A spinal needle was then introduced and 20 c.c. of cerebro-spinal fluid withdrawn and an equal quantity of serum injected at the same rate. The patient was then put to bed and the lower end of the bed raised about a foot off the ground to allow quicker circulation to the cerebral meninges. The temperature, pulse and respiration were noted every hour. The nurse was given instructions to report any symptoms of vomiting, purging or collapse. The patient was kept on a milk diet. No other treatment was given. In all six cases were thus treated. On the whole the results were disappointing as compared with those obtained by other workers who have claimed 50 per cent of successes. The cases were as follows:—