CHAPTER XIII
SUMMARY

Section 'A'

1. The family Avitellinidae has been retained as a distinct family.

2. The genus Ascoceraea has been synonymised with Avitellina.

3. Ascopgyus has been given the rank of a sub-genus and a second sub-genus Avitellina has been erected under the genus Avitellina.

4. On revision, only four species have been retained under the sub-genus Avitellina and four species under the sub-genus Ascopotyus.

5. The type species in the revised system contains four subspecies one amongst them being entirely new.

6. A new key to subgenera, their species and subspecies has been incorporated.

7. The maximum percentage of infection recorded for Avitellina Stilesia and Moniesia was 40.8 percent, the peak of infection being in the months from March to August. The percentage infection of Avitellina was 18.37, that of Stilesia 14.28 and that of Moniesia 33.77. Mixed infection of Avitellina and Stilesia was around 26.54 percent and that of Moniesia and Stilesia 2.05 percent. No infection of all the three cestodes was encountered in one host.

8. The weight-length ratios of these cestodes showed Moniesia to be the heaviest per centimeter length of the body, and Stilesia the lightest, an observation inversely proportional to the average number of the parasites in a single host.
Section "B"

1. The size of the scolex is fairly constant for each of the two subspecies (Avitellina A. centripunctata centripunctata and Avitellina A. c. woodlandi), that of woodlandi subspecies being smaller than that of other subspecies, although the former is longer than the latter in size (length of the body).

2. The smallest specimen (immature) of subspecies centripunctata measured 2.3 centimeters, and smallest mature specimen 12.5 cm.

3. The smallest mature specimen of ass. woodlandi measured 26.5 cms.

4. The segmentation is indistinct, except in gravid regions, the segments being acraspedote.

5. The cuticle over the suckers is rough.

6. The subcuticular cells in the suckers are reported here for the first time.

7. The inner half of the homogeneous layer of the cuticle presents a vacuolated appearance throughout the length of a young worm and only in the suckers in an adult worm.

8. Nuclei-like structures are seen to be present in the homogeneous layer in a young worm.

9. In the scolex, the transverse and dorsoventral muscles are arranged in pre-acetabular, acetabular and post-acetabular arrangements, of which the acetabular arrangement is further differentiable into four sub-arrangements, viz., adacetabulo-diagonal, adacetabulo-circum acetabular, adacetabulo-antero-orthogonal, & adacetabulo-postero-orthogonal.

10. Of these sub-arrangements, the adacetabulo-circumacetabular arrangement is described for the first time, and the post-acetabular arrangement is not as complex as described by
11. The longitudinal layer of muscles in the strobila gets divided into two in the scolex.

12. The muscles of the scolex are mainly radial.

13. The circular subcuticular muscles are reduced.

14. The parenchymal longitudinal muscles of the strobila form a sort of a reticulum.

15. The dorsal and ventral longitudinal muscle layers are not connected at the sides.

16. The myoblasts are of only two types, elongated bipolar type and spindle shaped bipolar type. The spindle shaped myoblasts are also found in between the radial muscles of suckers.

17. The longitudinal muscle fibres are found to be of two types, one with a clear space in the middle and the other completely solid.

18. 'Sommer-Landois' cells are reported absent.

19. A single myoblast has been seen forming more than one muscle fibre.

20. The dorsal excretory canals pass straight to the apex of the scolex while the ventral excretory canals form a few coils before passing to the apex of the scolex, where they unite with the dorsal excretory canals and form a loop.

21. The ventral excretory canals unite posteriorly into a bladder opening to the exterior by means of an excretory pore. Such a report on this genus is the first of its kind, for no previous worker reports the collection of a complete specimen.

22. The dorsal canals do not seem to join the bladder, even in a very small specimen complete end to end.
23. Transverse excretory vessels are wanting.

24. Epithelial cells in association with excretory canals are not clearly seen.

25. Flame cells are found either singly or in pairs.

26. The excretory vessels in the scolex of asp. *woodlandi* are smaller and the musculature is weakly developed in comparison to those in asp. *centripunctata*.

27. The nervous system is fairly complex in the scolex and comprises of a number of ganglia and commissures and connectives. Most of the ganglia are described here for the first time.

28. The lateral longitudinal nerves are devoid of any ganglia or any such enlargements.

29. Transverse commissures connecting the lateral longitudinal nerves are absent.

30. There is no binding membrane or tissue round the ganglia or the nerves, except in the scolex where longitudinal muscles enclose some ganglia.

31. The excretory vessels pass through the spaces enclosed by various connectives and commissures in the scolex.

32. Ganglion cells in the nerve trunks are very rare.

33. All the ganglia in the scolex of asp. *woodlandi* seem to lie at the same level as against their disposition in the other subspecies, moreover the acetabular ganglia do not seem to be connected with the cerebral ganglia in asp. *woodlandi*.

34. Testes seem to develop from medullary parenchymal cells.

35. Cirrus pouch is weakly muscularised and in length roughly double that of glandular vagina, in asp. *woodlandi*, the condition being reverse in asp. *centripunctata*.
36. Mehlis' gland is absent.

37. Vitelline glands are absent.

38. Germovitellarium produces small number of eggs and ovarian nutritive cells.

39. A receptaculum seminis is present.

40. Cirrus pouch is always anterior to vagina or may lie in the same dorso-ventral plane.

41. The paruterine organs arise as outpushings of the uteri anteriorly and later the whole uterus gets transformed into a single paruterine organ, containing a few egg capsules.

42. Eggs without any hard or thick shell.

43. The reproductive organs are so aligned as to facilitate self-fertilisation.

Section 'C'

1. A new variety of Avitellina is described for which the name Avitellina (A.) c. kargilensis has been proposed.

2. It shows scolex of the size of the scolex of ssp. centripunctata and cirrus pouch and glandular vagina roughly equal to those of ssp. woodlandi.

3. The cirrus bears a few minute spines.

4. A new specimen placed temporarily with A. (A.) chalmersi n.corb is described in which the crest at the genital pores is found only at some genital pores and not all. The cirrus pouch and vaginal lengths are nearly equal and are different from those of Avitellina chalmersi (Woodland, 1927).

Section 'D'

1. Three new species of nematodes from Crocidura sp. and one new nematode from Rattus rattus have been described.
2. *Skrjabinocapillaria multipapillata* n.sp. is reported for the first time from the genus *Crocidura*.

3. This is the first report of the nematode from *India*.

4. Its body is papillated, male bursa small supported by only one pair of recurved rays. Lateral caudal alae in male supported by thick cuticular expansions. Copulatory sheath well developed. Vagina nonprolapsed, eggs with rugose shell.

5. The process of oviposition in *S. multipapillata* is described.

6. Key to the three species, with amended diagnosis of the genus, and amended key to the family *Trichuridae* is given.

7. A male specimen of *Skrjabinocapillaria* sp. with a buccal stylet is described.

8. *Physaloptera (Pseudophysaloptera) kambirensis* n.sp. is the first record of the subgenus from India.

9. This nematode shows cephalic cuticular expansions forming a head bulb, presence of pre- and post-anal cuticular expansions besides the pre- and post-vulvar cuticular expansions.

10. It differs from other species of the subgenus in the number of post-anal papillae, in the shape and size of the caudal alae, and in the size of the body. The female possesses a row of minute papillae on the tail.

11. The process of the copulation of the specimens is given.

12. A key to only three species of the subgenus is given.

13. *Gongylonema soricis indica* n. var. is the first record from *Crocidura* sp. from India.

14. This nematode differs from other species of *Gongylonema* in many features especially in the number and disposition of papillae, relative size of two spicules, relative body size,
and the shape of gubernaeulun.

15. The distribution of plaques and the position of the cervical papillae also shows variation from the other species.

16. Physaloptera (Physaloptera) ratti n. sp. from Rattus rattus is the first record from the host from India.

17. It is characterised by features like, spicule structure and its length ratios, number of sessile and pedunculate papillae, and the shape of the caudal/being different from those of other species.

18. In the presence of large number of minute papillae forming a definite pattern over the tail in males it differs from most of the other species.

19. Some stages of the development of the egg are also described for the species.

Section 'B'

It includes three reprints of three papers already published two in connection with avian trematodes and one in connection with one reptilian nematode.