

Dr. ANIMESH PANIGRAHI

Designation: Associate Professor of Zoology (West Bengal Educational Service)

Qualifications: M.Sc. (1983), First Class, Calcutta University

M.Phil. (1986), First Class, Calcutta University

Ph.D. (1990), Calcutta University

Title of the Ph.D. Thesis: Ecology and Ethology of the Pestiferous Slug *Laevicaulis alte* (Ferussac).

Experience/ Expertise: Taught since 1989 (August) in Under Graduate Honours, General and Post Graduate classes for five years at Darjeeling Government College, continued teaching in Under Graduate Honours and General classes from 1994 to 2011 at Jhargram Raj College and Hooghly Mohasin College, respectively continuing teaching in Under Graduate and Post Graduate classes at Maulana Azad College. Continued teaching on different areas of Zoology. Continued special paper Developmental Biology at the Post Graduate Department of Zoology, Darjeeling Government college. At present teaching special paper Fisheries and Aquaculture at the Post Graduate Department of Maulana Azad College.

Specialisation and Area of Interests: Fisheries, Aquaculture; Ecology, Malacology, Entomology, Neuroendocrinology.

Current Teaching: At present, teaching in Honours and General classes at Under Graduate level covering different areas of Zoology, teaching at the Post Graduate classes covering different areas of Zoology and continuing teaching the Special Paper Fisheries and Aquaculture .

Research Experience : 23 Years (collaborative and independent)

- (i) Did research works on **Ecology and Ethology of the Pestiferous Slug *Laevicaulis alte* (Ferussac)**, for Ph.D. Thesis under Calcutta University with a Senior Research Fellowship awarded by the Indian Council of Agricultural Research (New Delhi) from 1984 – 1987.
- (ii) Continued Research in Collaboration with Ecology & Ethology Laboratory and Histophysiology Laboratory of Department of Zoology, University of Calcutta from 1987 – 1995.
- (iii) Continued Research independently from 1990 to 2005 actively .
- (iv) Doing Research works independently as scope available now.

(For Research Publication Please vide Annexure-

1)

Area of Research : **Fisheries , Ecology , Ethology, Malacology, Neuroendocrinology, Entomology, Herpetology, Animal Psychology and Biology.**

Participation in Visiting Scientist Fellowship and Associateship works. : (a) Actively took part in one Visiting Scientist Fellowship Works completed in collaboration with the Zoology Department of Calcutta University at my laboratory at the Postgraduate Department of Zoology, Darjeeling Government College, Darjeeling which was sponsored by INSA.

(b) Took active part to pursue one Visiting Associateship Research works in collaboration with the Department of Zoology, Calcutta University which completed in Collaboration with my laboratory at the Postgraduate Department of Zoology, Darjeeling Government College, Darjeeling which was sponsored by UGC. The research data have been published. (Research paper No. 11 of my list of research publications.)

Project Works Completed On EIA [Environmental Impact Assessment] Studies. : 5 Project Works on EIA completed on Ecological profiles of the Study sites in India and Bhutan especially on Thermal Power Plants, Cements Industries, Sweet Crude Refinery with Co-generation project (For establishment of new Port City) etc.

Publications :

• **Book chapter :**

Raut, S. K. and A. Panigrahi, 1991. The mite *Fuscuropoda marginata* (C.L. Koch) for the control of pest slugs *Laevicaulis alte* (Ferussac). *Modern Acarology*. F Dusbabek and V. Bukva (Eds.). Academia Prague and SPB Academic Publishing bv, The Hague., Vol. 2, pp. 683-687.

• **Review Papers :**

1. **Panigrahi, A. 1999.** Lepidopterous pests of tea in India : A review. *Ecology, Environment & Conservation*, **5(3)** : 181-190.
2. **Panigrahi, A. 2001.** Investigation of plant species and nature of damage to them involved in feeding operation by the pestiferous slug *Laevicaulis alte* (Ferussac) with a short review on the aspect caused by other slug species in world agri-horticulture. *Ecology, Environment & Conservation*, **7(1)** : 87-96.
3. **Panigrahi, A. 2007.** Pesticide use on tea : An Indian scenario. *Indian Biologist*, **39(2)** : 1 - 7.

Papers:

Number of Research papers Published : **137** (In leading National and International Journals in India and Abroad). Please vide the Annexure- I for list of publications under the heading **other information**.

Contact Details :

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Professional Memberships and Activities :

Elected for Membership of Scientific Bodies. : **(i)** International Society for Medical and Applied Malacology (USA).

(ii) Indian Association of Biological Sciences.

(iii) Society of Environmental Sciences.

Fellow of Scientific Bodies : **(i)** Fellow of the Indian Association of Biological Sciences (**F.I.A.B.S**).

(ii) Fellow of the Zoological Society of Calcutta (**F.Z.S. Cal**).

(iii) Fellow of the Society of Environmental Sciences (**F.S.E.Sc.**).

Membership of Research Journals :

Life member of 4 National and 2 International Journals.

Position in Executive / Editorial Bodies of Research Journal's

: **(i)** Served as **Assistant Secretary** of *Indian Biologist* for 5 years.

(ii) Actively served as **Assistant Editor** of *Indian Biologist* for 3 years.

(iii) Selected and actively served as **one of the members of the Editorial Board** of the International Research Journal *Ecology Environment and Conservation* for 2 years.

Other Informations

Annexure - I

LIST OF PUBLICATIONS OF DR. ANIMESH PANIGRAHI

1. **Raut, S. K. and A. Panigrahi, 1986.** Adaptive behavior in high altitude earthworms. *Environment & Ecology*, **04(1)** : 153.
2. **Panigrahi, A. and S. Banerjee, 1987.** Fecundity of the fish *Mystus vittetus* in relation to body length and weight. *Environment & Ecology*, **05(2)** : 268-270
3. **Raut, S.K. and A. Panigrahi, 1988.** Influence of temperature on hatching of eggs of the pestiferous slug *Laevicaulis alte* (Ferussac). *Bolletino Malacologico*, **24 (1-4)** : 61-65.
4. **Raut, S. K. and A. Panigrahi, 1988.** Egg-nesting in the garden slug *Laevicaulis alte* (Ferussac) (Gastropoda : Soleolifera). *Malacological Review*, **21** :101-107.
5. **Raut S. K. and A. Panigrahi, 1989.** Diseases of Indian pest slugs and snails. *Journal of Medical & Applied Malacology*, **01** : 113-121.
6. **Raut, S. K, and A. Panigrahi, 1990.** Feeding rhythm in the garden slug *Leavicaulis alte* (Soleolifera : Veronicellidae). *Malacological Review*, **23** : 39-46.
7. **Raut, S. K., Panigrahi, A. and S. Samanta, 1990.** Some aspects of bioecology of the Peninsular Indian slug *Mariaella dussumieri* (Gray) (Pulmonata, Ariophantidae). *Journal of Taiwan Museum*, **43(2)** : 149-155.
8. **Panigrahi, A. Ghara, T. K. and S. Banerjee, 1991.** Fecundity of the riverine catfish, *Pseudeutropius atherinoides* (Bloch). *Journal of Freshwater Biology*, **3(3)** : 217-221
9. **Raut, S. K. and A. Panigrahi, 1991.** The mite *Fuscuropoda marginata* (C.L. Koch) for the control of pest slugs *Laevicaulis alte* (Ferussac). *Modern Acarology*. F Dusbabek and V. Bukva (Eds.). Academia Prague and SPB Academic Publishing bv, The Hague., Vol. **2**, pp. 683-687.
10. **Raut, S. K. and A. Panigrahi, 1991.** Factors influencing mortality in aestivating pest slugs, *Laevicaulis alte*. *Journal of Medical & Applied Malacology*, **3**:154.
11. **Panigrahi, A. and S. K. Raut, 1992.** Natural history of the garden slug *Anadenus modestus* Theobald (Gastropoda : Arionidae). *Soosiana*, **20** :11-19.
12. **Panigrahi, A and S. K. Raut, 1992.** Influence of temperature and food on the growth of the pestiferous slug *Laevicaulis alte* (Soleolifera : Veronicellidae). *Walkerana*, **6(16)** : 219-235.
13. **Panigrahi, A. Mahata, S. K. and S. K. Raut, 1992.** Circadian rhythm in norepinephrine and epinephrine contents in the brain of the garden slug, *Laevicaulis alte* (Ferussac). *Apex*, **7(2)** : 59-65.

14. **Panigrahi, A., Mandal, R. N. and S. K. Raut, 1993.** Toxic effect of slug meat. *Com.Soc.Malac. Urug.*, **7(64-65)** : 318-324.
15. **Panigrahi, A. and S. K. Raut, 1993.** On the safe use of pesticides in controlling the terrestrial mollusc pests. *Memorias do Instituto Oswaldo Cruz, Rio de Janeiro*, **88(2)** : 293-298.
16. **Panigrahi, A. and S. K. Raut, 1994.** Status of noradrenaline and adrenaline content in the brain of the garden slug *Laevicaulis alte* (Ferussac) (Pulmonata: Vaginulidae) in respect to age. *Bulletin of Malacology, Chin*, **18** : 91-95.
17. **Panigrahi, A. and S. K. Raut, 1994.** *Thevetia peruviana* (Family: Apocynaceae) in the control of slug and snail pests. *Memorias do Instituto Oswaldo Cruz, Rio de Janeiro*, **89(2)** : 247-250.
18. **Panigrahi, A. and S. K. Raut, 1994.** Levels of noradrenaline and adrenaline in the cerebral ganglia of the land snail *Achatina fulica* Bowdich in respect to aestivation. *Molluscan Research*, **15** : 39-41.
19. **Panigrahi, A. Mahata, S. K. and S. K. Raut, 1994.** Effect of temperature on noradrenaline and adrenaline content in the brain of a terrestrial slug, *Laevicaulis alte* (Ferussac) (Gastropoda : Soleolifera). *Apex*, **9(1)** : 01-04.
20. **Panigrahi, A. and S. K. Raut, 1994.** Noradrenaline and adrenaline in the cerebral ganglia of the giant African land snail *Achatina fulica* Bowdich. *Apex*, **9(4)** : 143-147.
21. **Panigrahi, A. Chaudhuri, D. and A. K. Bhattacharya, 1994.** Influence of soil moisture on hatching of eggs of the garden slug *Anadenus modestus* Theobald (Gastropoda : Arionidae). *Indian Biologist*. **26(1)** : 54-59.
22. **Panigrahi, A. and S. K. Raut, 1995.** Noradrenaline and adrenaline contents in the cerebral ganglia of *Achatina fulica* Bowdich. *Bulletin of Malacology, ROC*, **19** : 89-92.
23. **Panigrahi, A. 1995.** Observations on some bioecological aspects of the mountain garden snail *Macrochlamys tugurium* (Benson). *Indian Biologist*, **27(1)** : 32-38.
24. **Panigrahi, A. and S. Mitra, 1995.** Role of oviposition behaviour on hatching of eggs of the garden snail *Macrochlamys tugurium* (Benson). *Indian Biologist*, **27(1)** : 39-43
25. **Panigrahi, A. 1995.** *Andraca bipunctata* Walker infestation in the tea garden at Dargeeling, West Bengal, India. *Indian Biologist*, **27(1)** : 44-46.
26. **Panigrahi, A. and P. De 1995.** Effect of water contents in the soils of egg laying pockets on some developmental aspects of eggs of the mountain garden snail *Plectotropis tapeina* (Benson). *Environment & Ecology*, **13(1)** : 188-191.
27. **Panigrahi, A. 1995.** Growth rate of the garden slug *Semperula birmanica* Theobald. *Environment & Ecology*, **13(1)** : 725-727.

28. **Panigrahi, A. 1995.** Observation on natural history of the mountain garden snail *Glossula tenuispira* (Benson) (Mollusca : Gastropoda). *Environment & Ecology*, **13(3)** : 711-715.
29. **Panigrahi, A. 1995.** Fungus *Cordyceps militaris* (Fries) Link infestation in the pupa of the tea pest *Andraca bipunctata* Walker. *Environment & Ecology*, **13(4)** : 942-946.
30. **Panigrahi, A. 1995.** Some aspects of ecology and biology of the garden slug, *Semperula birmanica* Theobald (Mollusca : Gastropoda). *Indian Biologist*, **27(2)** : 17-21.
31. **Panigrahi, A. 1995.** Temperature response in the pestiferous slug *Laevicaulis alte* (Ferussac) (Gastropoda : Soleolifera). *Indian Biologist*, **27(2)** : 22-29.
32. **Panigrahi, A. 1996.** Effect of food types on growth rate of a Himalayan snail *Macrochlamys tugurium* (Benson) (Mollusca : Gastropoda). *Environment & Ecology*, **14 (1)** : 194-199.
33. **Panigrahi, A. 1996.** Habitat of the Himalayan newt *Tylototriton verrucosus* Anderson (Amphibia : Salamandridae) and some problems related to conservation regulation. *Environment & Ecology*, **14(1)** : 235-237.
34. **Panigrahi, A. 1996.** Stadium, food consumption and growth in summer and winter generation larvae of the tea pest *Andraca bipunctata* Walker. *Environment & Ecology*, **14(2)** : 429-433.
35. **Panigrahi, A. 1996.** Occurrence and densities of different morphs of *Andraca bipunctata* Walker (Lepidoptera : Notodontidae) on tea leaves. *Environment & Ecology*, **14(3)** : 581-586.
36. **Panigrahi, A. 1996.** Nature of damage to tea caused by caterpillars of *Andraca bipunctata* Walker (Lepidoptera : Notodontidae). *Environment & Ecology*, **14(4)** : 788-790.
37. **Panigrahi, A. 1996.** Cocooning in the tea pest *Andraca bipunctata* Walker (Lepidoptera : Notodontidae) . *Environment & Ecology*, **14(3)** : 636-641.
38. **Panigrahi, A. 1996.** Mating, oviposition and hatching of eggs of the tea pest *Andraca bipunctata* Walker (Lepidoptera : Notodontidae). *Environment & Ecology*, **14(3)** : 662-666
39. **Panigrahi, A. 1996.** Attack to *Camellia kissi* Wallich and *C. japonica* Linnaeus (Family : Theaceae) by the lepidopterous pest *Andraca bipunctata* Walker. *Environment & Ecology*, **14(3)** : 735-736.
- 40.. **Panigrahi, A. 1996.** Larval population of the tea pest *Andraca bipunctata* Walker (Lepidoptera : Notodontidae) in respect to atmospheric temperature, relative humidity and rainfall. *Indian Biologist*, **28(2)** : 01-04.
41. **Panigrahi, A. 1996.** Tea leaf consumption and growth pattern in summer and winter generation *Andraca bipunctata* Walker larvae. *Indian Biologist*, **28(2)**: 05-08.
- 42.. **Panigrahi, A. 1996.** Observation on life-history of *Andraca bipunctata* Walker - a

serious lepidopterous pest of tea. *Indian Biologist*, **28(2)** : 09-16.

43. **Panigrahi, A. 1996.** Studies on the duration and growth of instar larvae of *Andraca bipunctata* fed on China and Assam variety tea leaves. *Indian Agriculturist*, **40(3)** : 193-197.
44. **Panigrahi, A. 1996.** *Urtica dioica* Linnaeus (Family : Urticaceae) in the protection of cultivable plants against the slugs *Anadenus modestus* Theobald (Gastropoda : Arionidae). *Ecology, Environment & Conservation*, **2** : 147-150.
45. **Panigrahi, A. 1997.** Loss of tea leaves other than consumption due to incoherent nature of feeding habit of the bunch caterpillar, *Andraca bipunctata* Walker (Lepidoptera : Notodontidae). *Environment & Ecology*, **15(1)** : 90-94.
46. **Panigrahi, A. 1997.** Some developmental aspects of the pupa of the tea pest *Andraca bipunctata* Walker (Lepidoptera : Notodontidae). *Environment & Ecology*, **15(1)** : 213-214.
47. **Panigrahi, A. 1997.** Cryptic coloration during pupation in the butterfly *Pieris brassicae* (Linnaeus) (Lepidoptera: Pieridae). *Environment & Ecology*, **15(1)** : 217-218.
48. **Panigrahi, A. 1997.** Protective resemblance in *Andraca bipunctata* Walker (Lepidoptera : Notodontidae). *Environment & Ecology*, **15(1)** : 221-222.
49. **Panigrahi, A. 1997.** Influence of water-holding capacity of soil on population density of the pestiferous slug *Laevicaulis alte* (Ferussac). *Environment & Ecology*, **15(4)** : 877-879.
50. **Panigrahi, A. 1997.** Seasonal variations in activity of feeding in the pest slug *Laevicaulis alte* (Ferussac) (Soleolifera : Veronicellidae). *Environment & Ecology*, **15(4)**: 946-948.
51. **Panigrahi, A. 1997.** Concealing color adaptation in the beetle *Mimela marginalis* Arrow (Coleoptera : Scarabaeidae). *Environment & Ecology*, **15(4)** : 973-974.
52. **Panigrahi, A. 1997.** Mycosis in the tea pest, *Andraca bipunctata* Walker (Lepidoptera : Notodontidae). *Ecology, Environment & Conservation*, **3(3-4)** : 163-168.
53. **Panigrahi, A. 1997.** Disease in the tea pest *Andraca bipunctata* Walker (Lepidoptera : Notodontidae). *Ecology, Environment & Conservation*, **3(3-4)** : 169-172.
54. **Panigrahi, A. 1997.** Noradrenaline and adrenaline levels in the brain of the aestivating slug, *Laevicaulis alte* (Ferussac) (Gastropoda : Veronicellidae). *Indian Biologist*, **29(1)** : 36-38
55. **Panigrahi, A. 1997.** Effect of *Thevetia peruviana* (Family : Apocynaceae) on noradrenaline and adrenaline contents in the brain of the slugs *Laevicaulis alte* (Ferussac) and the snails *Achatina fulica* Bowdich. *Indian Biologist*, **29(1)** : 39- 43.

56. **Panigrahi, A. 1997.** Wild plant in the protection of agricultural plants against the pest snail *Macrochlamys turgurium* (Benson) (Mollusca : Gastropoda). *Indian Biologist*, **29(2)** : 12-20
57. **Panigrahi, A. 1997.** Studies on population of the pestiferous slug *Laevicaulis alte* (Ferussac) (Gastropoda : Soleolifera). *Indian Biologist*, **29(2)** : 25-28.
58. **Panigrahi, A. 1997.** Occurrence of pearl-bearing mussels *Lamellidens marginalis* (Bivalvia : Unionidae) at Sandeshkhali, West Bengal, India. *Research Bulletin (Science), Punjab University*, **47 (1- 4)** : 107-109.
59. **Panigrahi, A. 1997.** Studies on effect of the pesticide Rogor on eggs of two freshwater snails of medical importance. *Journal of Parasitology and Applied Animal Biology*, **6 (2)** : 89-92.
60. **Panigrahi, A. 1998.** Effect of salinity on some aspects of breeding and life span of a fresh water snail species of medical importance. *Indian Journal of Environment and Ecoplanning*, **1(3)** : 73-76.
61. **Panigrahi, A. 1998.** Microanatomy of foot of the garden slug *Laevicaulis alte* (Soleolifera : Veronicellidae). *Indian Biologist*, **30(1)** : 20-22.
62. Panigrahi, A. 1998. Histological profile of cerebral and buccal ganglia of the land snail *Achatina fulica* Bowdich. *Indian Biologist*, **30(1)** : 23-25.
63. **Panigrahi, A. 1998.** On histological components of dorsal body wall of a terrestrial slug *Laevicaulis alte* (Ferussac) at juvenile age. *Indian Biological*, **30(1)** : 26-27.
64. **Panighari, A. 1998.** Anatomical study of eye of the garden slug *Laevicaulis alte* (Ferussac) (Gastropoda : Soleolifera). *Indian Biologist*, **30(1)** : 28-29.
65. **Panigrahi, A. 1998.** Molluscicidal effect of the pesticide Rogor on four medically important snail species. *Indian Biologist*, **30(2)** : 26-27.
66. **Panigrahi, A. 1998.** Hatching of eggs of the garden slug *Semperula birmanica* Theobald exposed to different temperatures. *Indian Biologist*, **30(2)** : 47-51.
67. **Panigrahi, A. 1998.** Rhythmicity in fluctuation levels of noradrenaline and adrenaline contents in the brain of active and aestivated garden slugs *Laevicaulis alte* (Ferussac). *Ecology, Environment & Conservation*, **40(3)** : 127-130.
68. **Panigrahi, A. 1998.** Preliminary observations on breeding of the pest slug *Laevicaulis alte* (Ferussac) (Gastropoda : Soleolifera). *Ecology, Environment & Conservation*, **4(4)** : 219-221.
69. **Panigrahi, A. 1998.** Effect of the pesticide Metacid-50 on hatching of eggs of two vector snail species. *Ecology, Environment & Conservation*, **4(4)** : 239-241.
70. **Panigrahi, A. 1998.** Seasonal variation in reproductive potentiality of the pond snail *Bellamya bengalensis* (Lamarck). *Environment & Ecology*, **16(1)** : 37-39.
71. **Panigrahi, A. 1998.** Population infestation and nature of attack to wild plants by the slug *Laevicaulis alte* (Ferussac) (Gastropoda : Soleolifera). *Environment &*

- Ecology*, **16(1)** : 46-48.
72. **Panigrahi, A. 1998.** Some aspects of bioecology of the predatory snail *Durgella sesopita* (Benson). *Environment & Ecology*, **16(1)** : 177-182.
 73. **Panigrahi, A. 1998.** Abnormal development of ocular tentacles in the garden slugs *Laevicaulis alte* (Ferussac) (Soleolifera : Veronicellidae). *Environment & Ecology*, **16(1)** : 195-198.
 74. **Panigrahi, A. 1998.** Evaluation of molluscicidal effect of the pesticide Nuvan on the disease transmitting snails *Lymnaea acuminata* and *Bellamya bengalensis*. *Environment & Ecology*, **16(2)** : 257 – 259.
 75. **Panigrahi, A. 1988.** Natural history of the garden snail *Opeas gracile* (Hutton) (Gastropoda : Subulinidae). *Environment & Ecology*, **16(2)** : 483-484.
 76. **Panigrahi, A. 1998.** Soil erosion during rain causing mass mortality of earthworms at Darjeeling Himalayan region. *Environment & Ecology*, **16(2)** : 490-491.
 77. **Panigrahi, A. 1998.** Behavior of dormancy in some snails and slugs of Darjeeling Himalayan region. *Environment & Ecology*, **16(3)** : 523-525.
 78. **Panigrahi, A. 1998.** Diseases in the pest slug *Anadenus modestus* Theobald (Gastropoda : Arionidae). *Environment & Ecology*, **16(3)** : 536-538.
 79. **Panigrahi, A. 1998.** Influence of dormancy on growth of a Himalayan pest snail *Macrochlamys tukurium* (Benson). *Environment & Ecology*, **16(4)** : 842-845.
 80. **Panigrahi, A. 1998.** Effect of temperature on mortality of the garden slug *Semerula birmanica* Theobald. *Environment & Ecology*, **16(4)** : 858-860.
 81. **Panigrahi, A. 1999.** Status of larval population and damage to tea of *Andraca bipunctata* Walker (Lepidoptera : Notodontidae) at Darjeeling Himalayan region. *Ecology, Environment & Conservation*, **5(2)** : 111-113.
 82. **Panigrahi, A. 1999.** Lepidopterous pests of tea in India : A review. *Ecology, Environment & Conservation*, **5(3)** : 181-190.
 83. **Panigrahi, A. 1999.** Behaviour of mating in the garden slug *Laevicaulis alte* (Ferussac) (Soleolifera : Veronicellidae). *Ecology, Environment & Conservation*, **5(3)** : 207-209.
 84. **Panigrahi, A. 1999.** Distribution of the perstiferous slug *Laevicaulis alte* (Ferussac) in West Bengal. *Ecology, Environment & Conservation*, **5(4)**: 313-319.
 85. **Panigrahi, A. 1999.** Observation on predation by the mite *Fuscuropoda marginata*, (C.L. Koch) on the garden slug *Laevicaulis alte* (Ferussac). *Indian Journal of Environment & Ecoplanning*, **2(1)** : 33-35.
 86. **Panigrahi, A. 1999** Parental care in the garden spider *Cyrtophora* sp. *Indian Biologist*, **31(1)** : 27-33.
 87. **Panigrahi, A. 1999.** Influence of temperature on the age of attainment of sexual maturity in the pestiferous slug *Laevicaulis alte* (Ferussac). *Indian*

Biologist, **31(1)** : 34-36.

88. **Panigrahi, A. 1999.** Further investigation on histopathology of tumour in the pestiferous slug *Laevicaulis alte* (Ferussac). *Indian Biologist*, **31(1)** : 41-46.
89. **Panigrahi, A. 1999.** Domestic duck *Anas querquedula* in the predation on the pestiferous slug *Laevicaulis alte*. *Indian Biologist*, **31(1)** : 53-54.
90. **Panigrahi, A. 1999.** Food and feeding behaviour of the pestiferous slug *Laevicaulis alte* (Ferussac). *Indian Biologist*, **31(2)** : 40-46.
91. **Panigrahi, A. 1999.** Parasitic nematode *Rhabdias* sp. (Schränk, 1788) in the Himalayan newt *Tylototriton verrucosus* Anderson (Amphibia : Salamandridae). *Indian Biologist*, **31(2)** : 47-50.
92. **Panigrahi, A. 1999.** Termites affecting timbers at forests of Jhargram region of West Bengal. *Environment & Ecology*, **17(1)** : 226-227.
93. **Panigrahi, A. 1999.** Noradrenaline and adrenaline in the brain of the garden slug *Semperula birmanica* Theobald (Mollusca : Gastropoda). *Environment & Ecology*, **17(1)** : 250-251.
94. **Panigrahi, A. 1999.** Artificial aestivating homes in the control of the pestiferous slugs *Laevicaulis alte* (Ferussac) at their natural habitats. *Environment & Ecology*, **17(1)** : 254-256.
95. **Panigrahi, A. 1999.** Effect of body weight loss on survival of the aestivating garden slugs *Laevicaulis alte* (Ferussac) (Gastropoda : Soleolifera). *Environment & Ecology*, **17(2)** : 481-483.
96. **Panigrahi, A. 1999.** Tentacular atrophy following leucodermia disease in the pestiferous slug *Laevicaulis alte* (Ferussac). *Environment & Ecology*, **17(2)** : 502-504.
97. **Panigrahi, A. 1999.** Water bug *Sphaerodema rusticum* Fab. *Environment & Ecology*, **17(2)** : 507-508.
98. **Panigrahi, A. 1999.** Effect of water stress in the control of the pestiferous slugs *Laevicaulis alte* (Ferussac). *Environment & Ecology*, **17(3)** : 630-632.
99. **Panigrahi, A. 1999.** Tactics of egg arrangement in the garden slug *Laevicaulis alte* (Ferussac). *Environment & Ecology*, **17(3)** : 679-681.
100. **Panigrahi, A. 1999.** Bandicoot rat, the effective predator of pestiferous slugs. *Environment & Ecology*, **17(3)** : 728-729.
101. **Panigrahi, A. 1999.** Impregnated egg-carrying garden slug *Anadenus modestus* Theobald in the study of its prognosis of population explosion. *Environment & Ecology*, **17(3)** : 741-742.
102. **Panigrahi, A. 1999.** Resemblance of egg-string formation in some terrestrial slug species of different countries. *Environment & Ecology*, **17(3)** : 752 - 753.
103. **Panigrahi, A. 1999.** Internal shell of the garden slug *Anadenus modestus* Theobald.

- (Gastropoda : Arionidae). *Environment & Ecology*, **17(3)**:757-758.
104. **Panigrahi, A. 1999**, Shells in *Lamellidens marginalis* (Bivalvia) and *Pila globosa* (Gastropoda) in respect to structural support against damage. *Environment & Ecology*, **17(3)** : 773-774.
 105. **Panigrahi, A. 2000**. Investigation on architecture and adaptation of retina in the Himalayan newt *Tylototriton verrucosus* Anderson (Amphibia : Salamandridae). *Indian Biologist*, **32(1)** : 29-34.
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