

Original Papers

1. Numata, H. and Hidaka, T. (1980) Development of male sex cells in the swallowtail, *Papilio xuthus* L. (Lepidoptera: Papilionidae) in relation to pupal diapause. Applied Entomology and Zoology 15: 151-158.
2. Numata, H. and Hidaka, T. (1981) Development of male sex cells in the swallowtail, *Papilio xuthus* L. (Lepidoptera: Papilionidae) after the termination of diapause. Applied Entomology and Zoology 16: 313-314.
3. Numata, H. and Hidaka, T. (1982) Photoperiodic control of adult diapause in the bean bug, *Riptortus clavatus* Thunberg (Heteroptera: Coreidae) I. Reversible induction and termination of diapause. Applied Entomology and Zoology 17: 530-538.
4. Numata, H. and Hidaka, T. (1983) Photoperiodic control of adult diapause in the bean bug, *Riptortus clavatus* Thunberg (Heteroptera: Coreidae) II. Termination of diapause induced under different photoperiods. Applied Entomology and Zoology 18: 439-441.
5. Numata, H. and Hidaka, T. (1983) Compound eyes as the photoperiodic receptors in the bean bug. Experientia 39: 868-869.
6. Numata, H. and Hidaka, T. (1984) Role of the brain in post-diapause adult development in the swallowtail, *Papilio xuthus*. Journal of Insect Physiology 30: 165-168.
7. Numata, H. and Hidaka, T. (1984) Photoperiodic control of adult diapause in the bean bug, *Riptortus clavatus* Thunberg (Heteroptera: Coreidae) III. Diapause development and temperature. Applied Entomology and Zoology 19: 356-360.
8. Numata, H. and Hidaka, T. (1984) Photoperiodic control of adult diapause in the bean bug, *Riptortus clavatus* Thunberg (Heteroptera: Coreidae) IV. Food and post-diapause development. Applied Entomology and Zoology 19: 443-447.
9. Numata, H. and Hidaka, T. (1984) Termination of adult diapause by a juvenile hormone analogue in the bean bug, *Riptortus clavatus*. Zoological Science 1: 751-754.
10. Numata, H. and Hidaka, T. (1985) Development of male sex cells in transplanted testes in the swallowtail, *Papilio xuthus* L. (Lepidoptera: Papilionidae). Applied Entomology and Zoology 20: 237-239.
11. Numata, H., Matsui, N. and Hidaka, T. (1986) Mating behavior of the bean bug, *Riptortus clavatus* Thunberg (Heteroptera: Coreidae): Behavioral sequence and the role of olfaction. Applied Entomology and Zoology 21: 119-125.
12. Numata, H. (1987) Photoperiodic sensitivity after diapause termination in the bean bug, *Riptortus clavatus* Thunberg (Heteroptera: Alydidae). Applied Entomology and Zoology 22: 352-357.

13. Numata, H. and Matsui, N. (1988) Circadian rhythm of oviposition in the bean bug, *Riptortus clavatus* Thunberg (Heteroptera: Alydidae). *Applied Entomology and Zoology* 23: 493-495.
14. Kon, M., Oe, A., Numata, H. and Hidaka, T. (1988) Comparison of the mating behaviour between two sympatric species, *Nezara antennata* and *N. viridula* (Heteroptera: Pentatomidae), with special reference to sound emission. *Journal of Ethology* 6: 91-98.
15. Numata, H., Kon, M., Fujii, H. and Hidaka, T. (1989) Sound production in the bean bug, *Riptortus clavatus* Thunberg (Heteroptera: Alydidae). *Applied Entomology and Zoology* 24: 169-173.
16. Numata, H., Kon, M. and Hidaka, T. (1990) Male adults attract conspecific adults in the bean bug, *Riptortus clavatus* Thunberg (Heteroptera: Alydidae). *Applied Entomology and Zoology* 25: 144-145.
17. Numata, H. (1990) Photoperiodic induction of the first and the second diapause in the bean bug, *Riptortus clavatus*: a photoperiodic history effect. *Journal of Comparative Physiology A* 167: 167-171.
18. Chinzei, Y., Haruna, T., Miura, K., Numata, H. and Nakayama, S. (1990) Purification and characterization of biliverdin-associated cyanoprotein from eggs and hemolymph of the bean bug, *Riptortus clavatus* (Heteroptera: Alydidae). *Insect Biochemistry* 20: 545-555.
19. Numata, H. and Yamamoto, K. (1990) Feeding on seeds induces diapause in the cabbage bug, *Eurydema rugosa*. *Entomologia Experimentalis et Applicata* 57: 281-284.
20. Chinzei, Y., Nishi, A., Miura, K., Shinoda, T. and Numata, H. (1991) Cyanoprotein: immunological properties and content changes during the development of non-diapause female bean bugs, *Riptortus clavatus*. *Insect Biochemistry* 21: 223-231.
21. Ikeda-Kikue, K. and Numata, H. (1991) Compensatory regeneration of antennae after removal of the distal segment in *Riptortus clavatus* (Thunberg) (Heteroptera: Alydidae). *International Journal of Insect Morphology and Embryology* 20: 41-49.
22. Chinzei, Y., Shinoda, T., Miura, K. and Numata, H. (1991) Quantitative changes and synthesis of cyanoprotein in whole body and tissues during development of the bean bug, *Riptortus clavatus*. *Insect Biochemistry* 21: 313-320.
23. Miura, K., Chinzei, Y., Shinoda, T. and Numata, H. (1991) Cyanoprotein: quantitative changes and synthesis in diapause and juvenile hormone analog treated bean bug, *Riptortus clavatus*. *Insect Biochemistry* 21: 553-562.
24. Chinzei, Y., Miura, K., Kobayashi, L., Shinoda, T. and Numata, H. (1992) Cyanoprotein: developmental stage, sex and diapause-dependent expression, and synthesis regulation by juvenile hormone in the bean bug, *Riptortus clavatus*. *Archives of Insect Biochemistry and Physiology* 20: 61-73.

25. Numata, H. (1992) Temporal variation in the photoperiodic induction and termination of adult diapause in the bean bug, *Riptortus clavatus*. *Journal of Insect Physiology* 38: 447-452.
26. Numata, H., Numata, A., Takahashi, C., Nakagawa, Y., Iwatani, K., Takahashi, S., Miura, K. and Chinzei, Y. (1992) Juvenile hormone I is the principal juvenile hormone in a hemipteran insect, *Riptortus clavatus*. *Experientia* 48: 606-610.
27. Ikeda-Kikue, K. and Numata, H. (1992) Effects of diet, photoperiod and temperature on the postdiapause reproduction in the cabbage bug, *Eurydema rugosa*. *Entomologia Experimentalis et Applicata* 64: 31-36.
28. Kawai, K., Takahashi, C., Numata, A., Chernysh, S., Nesin, A. and Numata, H. (1993) Juvenile hormone activity of juvabione analogues against *Pyrrhocoris apterus* (Hemiptera: Pyrrhocoridae). *Applied Entomology and Zoology* 28: 118-121.
29. Numata, H. (1993) Induction of adult diapause and of low and high reproductive states in a parasitoid wasp, *Ooencyrtus nezarae*, by photoperiod and temperature. *Entomologia Experimentalis et Applicata* 66: 127-134.
30. Numata, H., Saulich, A.H. and Volkovich, T.A. (1993) Photoperiodic responses of the linden bug, *Pyrrhocoris apterus* under conditions of constant temperature and thermoperiodic conditions. *Zoological Science* 10: 521-527.
31. Harada, T. and Numata, H. (1993) Two critical day lengths for the determination of wing forms and the induction of adult diapause in the water strider, *Aquarius paludum*. *Naturwissenschaften* 80: 430-432.
32. Kobayashi, S. and Numata, H. (1993) Photoperiodic responses controlling the induction of adult diapause and the determination of seasonal form in the bean bug, *Riptortus clavatus*. *Zoological Science* 10: 983-990.
33. Kon, M., Oe, A. and Numata, H. (1993) Intra- and interspecific copulations in the two congeneric green stink bugs, *Nezara antennata* and *N. viridula* (Heteroptera: Pentatomidae), with reference to postcopulatory changes in the spermatheca. *Journal of Ethology* 11: 83-89.
34. Aldrich, J.R., Numata, H., Borges, M., Bin, F., Waite, G.K. and Lusby, W.R. (1993) Artifacts and pheromone blends from *Nezara* spp. and other stink bugs (Heteroptera: Pentatomidae). *Zeitschrift für Naturforschung* 48c: 73-79.
35. Ikeda-Kikue, K. and Numata, H. (1994) Effect of low temperature on the termination of photoperiodic and food-mediated diapause in the cabbage bug, *Eurydema rugosa* Motschulsky (Heteroptera: Pentatomidae). *Applied Entomology and Zoology* 29: 229-236.

36. Kon, M., Oe, A., and Numata, H. (1994) Ethological isolation between two congeneric green stink bugs, *Nezara antennata* and *N. viridula* (Heteroptera: Pentatomidae). *Journal of Ethology* 12: 67-71.
37. Miura, K., Nakagawa, M., Chinzei, Y., Shinoda, T., Nagao, E. and Numata, H. (1994) Structural and functional studies on biliverdin-associated cyanoprotein from the bean bug, *Riptortus clavatus*. *Zoological Science* 11: 537-545.
38. Numata, H. and Kobayashi, S. (1994) Threshold and quantitative photoperiodic responses exist in an insect. *Experientia* 50: 969-971.
39. Saulich, A.H., Volkovich, T.A. and Numata, H. (1994) Control of seasonal development by photoperiod and temperature in the linden bug, *Pyrrhocoris apterus* in Belgorod, Russia. *Zoological Science* 11: 883-887.
40. Matsuo, J., Numata, H., Tanaka, Y. and Takeda, S. (1995) Identification of ecdysteroids and their titer in the hemolymph during development in the bean bug, *Riptortus clavatus*. *Applied Entomology and Zoology* 30: 254-257.
41. Kobayashi, S. and Numata, H. (1995) Effects of temperature and photoperiod on the induction of diapause and the determination of body coloration in the bean bug, *Riptortus clavatus*. *Zoological Science* 12: 343-348.
42. Nesin, A.P., Simonenko, N.P., Numata, H. and Chernysh, S.I. (1995) Effects of photoperiod and parental age on the maternal induction of larval diapause in the blowfly, *Calliphora vicina* Robineau-Desvoidy (Diptera: Calliphoridae). *Applied Entomology and Zoology* 30: 351-356.
43. Chernysh, S.I., Simonenko, N.P. and Numata, H. (1995) Sensitive stage for the diapause-averting effect of high temperature in the blowfly, *Calliphora vicina* Robineau-Desvoidy (Diptera: Calliphoridae). *Applied Entomology and Zoology* 30: 498-499.
44. Teraoka, T. and Numata, H. (1995) Induction of adult diapause in a parasitoid wasp, *Ooencyrtus nezarae* under natural conditions. *Entomologia Experimentalis et Applicata* 76: 329-332.
45. Nakamura, K. and Numata, H. (1995) Photoperiodic sensitivity in adults of *Aelia fieberi* (Heteroptera: Pentatomidae). *European Journal of Entomology* 92: 609-613.
46. Numata, H. and Shiga, S. (1995) Induction of adult diapause by photoperiod and temperature in *Protophormia terraenovae* (Diptera: Calliphoridae) in Japan. *Environmental Entomology* 24: 1633-1636.
47. Numata, H. and Shiga, S. (1996) A white-eye mutant of *Protophormia terraenovae* (Diptera: Calliphoridae): Mode of inheritance and photoperiodic response. *Annals of the Entomological Society of America* 89: 573-575.

48. Shiga, S. and Numata, H. (1996) Effects of compound eye-removal on the photoperiodic response in the band-legged ground cricket, *Pteronemobius nigrofasciatus*. *Journal of Comparative Physiology A* 179: 625-633.
49. Matsuo, J., Nakayama, S. and Numata, H. (1997) Role of the corpus allatum in the control of adult diapause in the blowfly, *Protophormia terraenovae*. *Journal of Insect Physiology* 43: 211-216.
50. Morita, A. and Numata, H. (1997) Distribution of photoperiodic receptors in the compound eyes of the bean bug, *Riptortus clavatus*. *Journal of Comparative Physiology A* 180: 181-185.
51. Hasizume, H. and Numata, H. (1997) Effects of temperature and photoperiod on the reproduction in the giant water bug, *Lethocerus deyrollei* (Vuillefroy) (Heteroptera: Belostomatidae). *Japanese Journal of Entomology* 65: 55-61.
52. Kida, Y., Numata, H. and Fujii, H. (1997) Summer diapause in female adults of *Minois dryas* (Lepidoptera: Satyridae). *Environmental Entomology* 26: 201-206.
53. Morita, A. and Numata, H. (1997) Role of the neuroendocrine complex in the control of adult diapause in the bean bug, *Riptortus clavatus*. *Archives of Insect Biochemistry and Physiology* 35: 347-355.
54. Shiga, S. and Numata, H. (1997) Induction of reproductive diapause via perception of photoperiod through the compound eyes in the adult blow fly, *Protophormia terraenovae*. *Journal of Comparative Physiology A* 181: 35-40.
55. Nakamura, K. and Numata, H. (1997) Seasonal life cycle of *Aelia fieberi* (Hemiptera: Pentatomidae) in relation to the phenology of its host plants. *Annals of the Entomological Society of America* 90: 625-630.
56. Shiga, S. and Numata, H. (1997) Seasonal changes in the incidence of embryonic diapause in the band-legged ground cricket, *Dianemobius nigrofasciatus*. *Zoological Science* 14: 1017-1020.
57. Nakamura, K. and Numata, H. (1997) Effects of environmental factors on diapause development and postdiapause oviposition in a phytophagous insect, *Dybowskyia reticulata*. *Zoological Science* 14: 1021-1026.
58. Nakamura, K. and Numata, H. (1998) Alternative life cycles controlled by temperature and photoperiod in the oligophagous bug, *Dybowskyia reticulata*. *Physiological Entomology* 23: 69-74.
59. Morita, A., Soga, K., Hoson, T., Kamisaka, S. and Numata, H. (1999) Changes in mechanical properties of the cuticle and lipid accumulation in relation to adult diapause in the bean bug, *Riptortus clavatus*. *Journal of Insect Physiology* 45: 243-249.

60. Toyoda, I., Numata, H. and Shiga, S. (1999) Role of the median neurosecretory cells in the ovarian development of the blow fly *Protophormia terraenovae*. *Zoological Science* 16: 187-191.
61. Shiga, S., Numata, H. and Yoshioka, E. (1999) Localization of the photoreceptor and pacemaker for the circadian activity rhythm in the band-legged ground cricket, *Dianemobius nigrofasciatus*. *Zoological Science* 16: 193-201.
62. Morita, A. and Numata, H. (1999) Localization of the photoreceptor for photoperiodism in the stink bug, *Plautia crossota stali*. *Physiological Entomology* 24: 190-196.
63. Nakamura, K. and Numata, H. (1999) Environmental regulation of adult diapause of *Graphosoma rubrolineatum* (Westwood) (Heteroptera: Pentatomidae) in southern and northern populations of Japan. *Applied Entomology and Zoology* 34: 323-326.
64. Tanigawa, N.A., Shiga, S., and Numata, H. (1999) Role of the corpus allatum in the control of reproductive diapause in the male blow fly, *Protophormia terraenovae*. *Zoological Science* 16: 639-644.
65. Shiga, S., Toyoda, I., and Numata, H. (2000) Neurons projecting to the retrocerebral complex of the adult blow fly *Protophormia terraenovae*. *Cell and Tissue Research* 299: 427-439.
66. Shiga, S. and Numata, H. (2000) The roles of neurosecretory neurons in the pars intercerebralis and pars lateralis in reproductive diapause of the blow fly, *Protophormia terraenovae*. *Naturwissenschaften* 87: 125-128.
67. Nakamura, K. and Numata, H. (2000) Photoperiodic control of the intensity of diapause and diapause development in the bean bug, *Riptortus clavatus* (Thunberg) (Heteroptera: Alydidae). *European Journal of Entomology* 97: 19-23.
68. Satou, A., Nisimura, T. and Numata, H. (2000) Reproductive competition between the burying beetle *Nicrophorus quadripunctatus* without phoretic mites and the blow fly *Chrysomya pinguis*. *Entomological Science* 3: 265-268.
69. Yoshida, A., Noda, A., Yamana, A. and Numata, H. (2000) Arrangement of scent scales in the male wing of a small cabbage white butterfly, *Pieris rapae* (Lepidoptera: Pieridae). *Entomological Science* 3: 345-349.
70. Teraoka, T. and Numata, H. (2000) Seasonal changes in the intensity of adult diapause in a parasitoid wasp, *Ooencyrtus nezarae* Ishii (Hymenoptera: Encyrtidae). *Applied Entomology and Zoology* 35: 353-356.
71. Teraoka, T. and Numata, H. (2000) Effects of feeding on reproduction and overwintering in female adults of *Ooencyrtus nezarae* Ishii (Hymenoptera: Encyrtidae). *Applied Entomology and Zoology* 35: 361-367.

72. Hamasaka, Y., Watari, Y., Arai, T., Numata, H. and Shiga, S. (2001) Retinal and extraretinal pathways for entrainment of the circadian activity rhythm in the blow fly, *Protophormia terraenovae*. *Journal of Insect Physiology* 47: 867-875.
73. Nisimura, T. and Numata, H. (2001) Endogenous timing mechanism controlling the circannual pupation rhythm of the varied carpet beetle *Anthrenus verbasci*. *Journal of Comparative Physiology A* 187: 433-440.
74. Musolin, D.L., Numata, H. and Saulich, A.H. (2001) Timing of diapause induction outside the natural distribution range of a species: an outdoor experiment with the bean bug *Riptortus clavatus*. *Entomologia Experimentalis et Applicata* 100: 211-219.
75. Satou, A., Nisimura, T. and Numata, H. (2001) Cost and necessity of parental care in the burying beetle, *Nicrophorus quadripunctatus*. *Zoological Science* 18: 975-979.
76. Ikeda-Kikue, K. and Numata, H. (2001) Timing of diapause induction in the cabbage bug *Eurydema rugosum* (Heteroptera: Pentatomidae) on different host plants. *Acta Societatis Zoologicae Bohemicae* 65: 197-205.
77. Tachibana, S.-I. and Numata, H. (2001) An artificial diet for blow fly larvae, *Lucilia sericata* (Meigen) (Diptera: Calliphoridae). *Applied Entomology and Zoology* 36: 521-523.
78. Kajimura, M., Iwata, K. and Numata, H. (2002) Diurnal nitrogen excretion rhythm of the functionally ureogenic gobiid fish, *Mugilogobius abei*. *Comparative Biochemistry and Physiology B* 131: 227-239.
79. Nisimura, T., Kon, M. and Numata, H. (2002) Bimodal life cycle of the burying beetle, *Nicrophorus quadripunctatus* in relation to its summer reproductive diapause. *Ecological Entomology* 27: 220-228.
80. Nisimura, T. and Numata, H. (2002) Evaluation of the frequency demultiplication hypothesis of the circannual pupation rhythm in the varied carpet beetle *Anthrenus verbasci* (Coleoptera: Dermastidae). *Biological Rhythm Research* 33: 255-260.
81. Tanaka, S. I., Imai, C. and Numata, H. (2002) Ecological significance of adult summer diapause after nymphal winter diapause in *Poecilocoris lewisi* (Distant) (Heteroptera: Scutelleridae). *Applied Entomology and Zoology* 37: 469-475.
82. Musolin, D.L. and Numata, H. (2003) Photoperiodic and temperature control of diapause induction and colour change in the southern green stink bug, *Nezara viridula*. *Physiological Entomology* 28: 65-74.
83. Miyawaki, R., Tanaka, S. I. and Numata, H. (2003) Photoperiodic receptor in the nymph of *Poecilocoris lewisi* (Heteroptera: Scutelleridae). *European Journal of Entomology* 100: 301-303.

84. Nisimura, T. and Numata, H. (2003) Circannual control of the life cycle in the Varied Carpet Beetle *Anthrenus verbasci*. *Functional Ecology* 17: 489-495.
85. Shiga, S., Hamanaka, Y., Tatsu, Y., Okuda, T. and Numata, H. (2003) Juvenile hormone biosynthesis in diapause and nondiapause females of the adult blow fly *Protophormia terraenovae*. *Zoological Science* 20: 1199-1206.
86. Musolin, D. L. and Numata, H. (2003) Timing of diapause induction and its life-history consequences in *Nezara viridula*: Is it costly to expand a distribution range? *Ecological Entomology* 28: 694-703.
87. Tachibana, S.-I. and Numata, H. (2004) Effects of temperature and photoperiod on the termination of larval diapause in *Lucilia sericata* (Diptera: Calliphoridae). *Zoological Science* 21: 197-202.
88. Tachibana, S.-I. and Numata, H. (2004) Parental and direct effects of photoperiod and temperature on the induction of larval diapause in the blow fly *Lucilia sericata*. *Physiological Entomology* 29: 39-44.
89. Musolin, D. L. and Numata, H. (2004) Late-season induction of diapause in *Nezara viridula* and its effect on post-diapause reproductive performance. *Entomologia Experimentalis et Applicata* 111: 1-6.
90. Teraoka, T. and Numata, H. (2004) Winter survival and oviposition before and after overwintering in a parasitoid wasp, *Ooencyrtus nezarae* Ishii (Hymenoptera: Encyrtidae). *Entomological Science* 7: 103-109.
91. Tachibana, S.-I. and Numata, H. (2004) Maternal induction of larval diapause and its sensitive stage in the blow fly *Lucilia sericata*. *Entomological Science* 7: 231-235.
92. Hamanaka, Y., Numata, H. and Shiga, S. (2004) Morphology and electrophysiological properties of neurons projecting to the retrocerebral complex in the blow fly, *Protophormia terraenovae*. *Cell and Tissue Research* 318: 403-418.
93. Yamashita, T., Tomiyama, T., Li, Q., Numata, H. and Mori, H. (2005) Regulation of tau exon 10 splicing by a double stem-loop structure in mouse intron 10. *FEBS Letters* 579: 241-244.
94. Tachibana, S.-I., Numata, H. and Goto, S. G. (2005) Gene expression of heat-shock proteins (*Hsp23*, *Hsp70* and *Hsp90*) during and after larval diapause in the blow fly *Lucilia sericata*. *Journal of Insect Physiology* 51: 641-647.
95. Ikeda, K., Numata, H. and Shiga, S. (2005) Roles of the mushroom bodies in olfactory learning and photoperiodism in the blow fly *Protophormia terraenovae*. *Journal of Insect Physiology* 51: 669-680.

96. Miyazaki, Y., Nisimura, T. and Numata, H. (2005) A phase response curve for the circannual rhythm in the varied carpet beetle *Anthrenus verbasci*. *Journal of Comparative Physiology A* 191: 883-887.
97. Hamanaka, Y., Yasuyama, K., Numata, H. and Shiga, S. (2005) Synaptic connections between pigment-dispersing factor-immunoreactive neurons and neurons in the pars lateralis of the blow fly, *Protophormia terraenovae*. *Journal of Comparative Neurology* 491: 390-399.
98. Nisimura, T., Numata, H. and Yoshioka, E. (2005) The effect of temperature on circadian rhythm controlling the crepuscular activity of the burying beetle *Nicrophorus quadripunctatus* Kraatz (Coleoptera: Silphidae). *Entomological Science* 8: 331-338.
99. Nakamura, K. and Numata, H. (2006) Effects of photoperiod and temperature on the induction of adult diapause in *Dolycoris baccarum* (L.) (Heteroptera: Pentatomidae) from Osaka and Hokkaido, Japan. *Applied Entomology and Zoology* 41: 105-109.
100. Miyawaki, R., Tanaka, S. I. and Numata, H. (2006) Role of juvenile hormone in the control of summer diapause in adult *Poecilocoris lewisi* (Heteroptera: Scutelleridae). *Formosan Entomologist* 26: 1-10.
101. Fukumoto, E., Numata, H. and Shiga, S. (2006) Effects of adult and egg temperatures on the induction of embryonic diapause in the band-legged ground cricket, *Dianemobius nigrofasciatus*. *Physiological Entomology* 31: 211-217.
102. Moriyama, M. and Numata, H. (2006) Induction of egg hatching by high humidity in the cicada, *Cryptotympana facialis*. *Journal of Insect Physiology* 52: 1219-1225.
103. Miyazaki, Y., Nisimura, T. and Numata, H. (2006) Phase responses in the circannual rhythm of the varied carpet beetle, *Anthrenus verbasci*, under naturally changing day length. *Zoological Science* 23: 1031-1037.
104. Tachibana, S.-I. and Numata, H. (2006) Seasonal prevalence of blowflies and flesh flies in Osaka City. *Entomological Science* 9: 341-345.
105. Musolin, D. L., Fujisaki, K. and Numata, H. (2007) Photoperiodic control of diapause termination, colour change, and post-diapause reproduction in the southern green stink bug *Nezara viridula*. *Physiological Entomology* 32: 64-72.
106. Hamanaka, Y., Tanaka, S., Numata, H. and Shiga, S. (2007) Peptide-immunocytochemistry of neurons projecting to the retrocerebral complex in the blow fly, *Protophormia terraenovae*. *Cell and Tissue Research* 329: 581-593.
107. Udaka, H., Mori, M., Goto, S.G. and Numata, H. (2007) Seasonal reproductive cycle in relation to tolerance to high temperatures in the terrestrial slug, *Lehmannia valentiana*. *Invertebrate Biology* 126: 154-162.

108. Miyazaki, Y., Nisimura, T. and Numata, H. (2007) Phase resetting and phase singularity of an insect circannual oscillator. *Journal of Comparative Physiology A* 193: 1169-1176.
109. Goto, S.G, Doi, K., Nakayama, S. and Numata, H. (2008) Maternal control of cold and desiccation tolerance in eggs of the band-legged ground cricket *Dianemobius nigrofasciatus* in relation to embryonic diapause. *Entomological Research* 38: 17-23.
110. Satoh, A., Yoshioka, E. and Numata, H. (2008) Circatidal activity rhythm in the mangrove cricket *Apteranemobius asahinai*. *Biology Letters* 4: 223-236.
111. Udaka, H. and Numata, H. (2008) Short-day and low temperature conditions promote reproductive maturation in the terrestrial slug, *Lehmannia valentiana*. *Comparative Biochemistry and Physiology A* 150: 80-83.
112. Zhang, B., Numata, H., Mitsui, H. and Goto, S.G. (2008) Short-term cold storage of blowfly *Lucilia sericata* (Meigen) embryos. *Insect Science* 15: 225-228.
113. Ito, C., Goto, S.G., Shiga, S., Tomioka, K. and Numata, H. (2008) Peripheral circadian clock for the cuticle deposition rhythm in *Drosophila melanogaster*. *Proceedings of the National Academy of Sciences of the United States of America* 105: 8446-8451.
114. Ikeno, T., Numata, H. and Goto, S.G. (2008) Molecular characterization of the circadian clock genes in the bean bug, *Riptortus pedestris* and their expression patterns under long- and short-day conditions. *Gene* 419: 56-61.
115. Shimokawa, K., Numata, H. and Shiga, S. (2008) Neurons important for the photoperiodic control of diapause in the bean bug, *Riptortus pedestris*. *Journal of Comparative Physiology A* 194: 751-762.
116. Tanaka, M., Tachibana, S.-I. and Numata, H. (2008) Sensitive stages for photoperiodic induction of pupal diapause in the flesh fly *Sarcophaga similis* (Meade) (Diptera: Sarcophagidae). *Applied Entomology and Zoology* 43: 403-407.
117. Moriyama, M. and Numata, H. (2008) Diapause and prolonged development in the embryo and their ecological significance in two cicadas, *Cryptotympana facialis* and *Graptosaltria nigrofuscata*. *Journal of Insect Physiology* 54: 1487-1494.
118. Udaka, H., Goto, S.G. and Numata, H. (2008) Effects of photoperiod and acclimation temperature on heat and cold tolerance in the terrestrial slug, *Lehmannia valentiana* *Applied Entomology and Zoology* 43: 547-551.
119. Kawakami, Y., Goto, S.G., Ito, K. and Numata, H. (2009) Suppression of ovarian development and vitellogenin gene expression in the adult diapause of the two-spotted spider mite *Tetranychus urticae* *Journal of Insect Physiology* 55: 70-77.

120. Kashiyama, K. Seki, T., Numata, H. and Goto, S.G. (2009) Molecular characterization of Branchiopod visual pigments and the evolution of opsins in Arthropoda. *Molecular Biology and Evolution* 26: 299-311.
121. Shiga, S. and Numata, H. (2009) Roles of PER immunoreactive neurons in circadian rhythms and photoperiodism in the blow fly, *Protophormia terraenovae*. *Journal of Experimental Biology* 212: 867-877.
122. Miyazaki, Y. and Numata, H. (2009) Responsiveness to photoperiodic changes in the circannual rhythm of the varied carpet beetle, *Anthrenus verbasci*. *Journal of Comparative Physiology A* 195: 241-246.
123. Hamanaka, Y., Tanaka, S., Numata, H. and Shiga, S. (2009) Morphological characterization of neurons projecting to the ring gland in the larval blow fly, *Protophormia terraenovae*. *Zoological Science* 26: 227-237.
124. Goto, S.G. and Numata, H. (2009) Possible involvement of distinct photoreceptors in the photoperiodic induction of diapause in the flesh fly *Sarcophaga similis*. *Journal of Insect Physiology* 55: 401-407.
125. Miyazaki, Y., Nisimura, T. and Numata, H. (2009) A circadian system is involved in photoperiodic entrainment of the circannual rhythm of *Anthrenus verbasci*. *Journal of Insect Physiology* 55: 494-498.
126. Moriyama, M. and Numata, H. (2009) Comparison of cold tolerance in eggs of two cicadas, *Cryptotympana facialis* and *Graptopsaltria nigrofuscata* in relation to climate warming. *Entomological Science* 12: 162–170.
127. Satoh, A., Yoshioka, E. and Numata, H. (2009) Entrainment of the circatidal activity rhythm of the mangrove cricket *Apteronomobius asahinai* to periodic inundations. *Animal Behaviour* 78: 189-194.
128. Horiguchi, T., Ito, C. and Numata, H. (2009) Regulation of embryogenesis by light and its ecological significance in the Asian tadpole shrimp *Triops granarius* *Zoological Science* 26: 483–490.
129. Kotaki, T., Shinada, T., Kaihara, K., Ohfune, Y. and Numata, H. (2009) Structure determination of a new juvenile hormone from a heteropteran insect. *Organic Letters* 11: 5234-5237.
130. Shintani, Y., Shiga, S. and Numata, H. (2009) Different photoreceptor organs are used for photoperiodism in the larval and adult stages of a carabid beetle, *Leptocarabus kumagaii*. *Journal of Experimental Biology* 212: 3651-3655.

131. Zhang, B., Numata, H., Mitsui, H. and Goto, S.G. (2009) A simple and heat-sterilisable artificial diet excluding animal-derived ingredients for *Lucilia sericata* adults. *Medical and Veterinary Entomology* 23: 443-447.
132. Goto, S.G. and Numata, H. (2009) Alteration of pupal diapause program and regulation of larval development rate by photoperiod in the flesh fly *Sarcophaga similis*. *Applied Entomology and Zoology* 44: 603-609.
133. Miyazaki, Y., Nisimura, T. and Numata, H. (2009) Circannual pupation rhythm in the varied carpet beetle *Anthrenus verbasci* under different nutrient conditions. *Entomological Science* 12: 370-375.
134. Tanigawa, N., Matsumoto, K., Yasuyama, K., Numata, H. and Shiga, S. (2009) Early embryonic development and diapause stage in the band-legged ground cricket, *Dianemobius nigrofasciatus*. *Development Genes and Evolution* 219: 589-596.
135. Kawakami, Y., Numata, H., Ito, K. and Goto, S.G. (2010) Genetic bases of diapause in the two-spotted spider mite *Tetranychus urticae*. *Journal of Heredity* 101: 20-25.
136. Inosaki, A., Yasuda, A., Shinada, T., Ohfuné, Y., Numata, H. and Shiga, S. (2010) Mass spectrometry analysis of peptides in the brain neurosecretory cells and neurohemal organs in the adult blow fly, *Protophormia terraenovae*. *Comparative Biochemistry and Physiology A* 155: 190-199.
137. Moriyama, M. and Numata, H. (2010) Desiccation tolerance in fully developed embryos in two cicadas, *Cryptotympana facialis* and *Graptopsaltria nigrofuscata*. *Entomological Science* 13: 68-74.
138. Muguruma, F., Goto, S.G., Numata, H. and Shiga, S. (2010) Photoperiodic effect on the clock gene expression and subcellular distribution of PERIOD in the circadian clock neurons of the blow fly, *Protophormia terraenovae*. *Cell and Tissue Research* 340: 497-507.
139. Kashiyama, K., Ito, C., Numata, H. and Goto, S.G. (2010) Spectral sensitivity in light-induced hatching and expression of genes involved in photoreception in eggs of the tadpole shrimp *Triops granarius*. *Comparative Biochemistry and Physiology A* 156: 416-421.
140. Shintani, Y. and Numata, H. (2010) Photoperiodic response of larvae of the yellow-spotted longicorn beetle *Psacotheta hilaris* after removal of the stemmata. *Journal of Insect Physiology* 56: 1125-1129.
141. Tokuda, Y., Ikeno, T., Goto, S.G., Numata, H. and Ezaki, Y. (2010) Influence of different substrates on the evolution of morphology and life history traits of azooxanthellate solitary corals (Scleractinia: Flabellidae). *Biological Journal of the Linnean Society* 101: 184-192.

142. Ikeno, T., Tanaka, S. I., Numata, H. and Goto, S.G. (2010) Photoperiodic diapause under control of circadian clock genes in an insect. *BMC Biology* 8: 116.
143. Udaka, H. and Numata, H. (2010) Comparison of the life cycle and photoperiodic response between northern and southern populations of the terrestrial slug *Lehmannia valentiana* in Japan. *Zoological Science* 27: 735-739.
144. Tagaya, J., Numata, H. and Goto, S.G. (2010) Sexual difference in the photoperiodic induction of pupal diapause in the flesh fly *Sarcophaga similis*. *Entomological Science* 13: 311-319.
145. Miyazaki, Y. and Numata, H. (2010) Exhibition of circannual rhythm under constant light in the varied carpet beetle *Anthrenus verbasci*. *Biological Rhythm Research* 41: 441-448.
146. Shintani, Y. and Numata, H. (2010) Adaptive significance of the recurrent photoperiodic response in a spring-breeding carabid beetle, *Carabus yaconinus*. *Entomological Science* 13: 367-374.
147. Kotaki, T., Shinada, T., Kaihara, K., Ohfune, Y. and Numata, H. (2011) Biological activities of juvenile hormone III skipped bisepoxide in last instar nymphs and adults of a stink bug, *Plautia stali*. *Journal of Insect Physiology* 57: 147-152.
148. Ito, C., Goto, S.G., Tomioka, K. and Numata, H. (2011) Temperature entrainment of the circadian cuticle deposition rhythm in *Drosophila melanogaster*. *Journal of Biological Rhythms* 26: 14-23.
149. Ikeno, T., Numata, H. Katagiri, C. and Goto, S.G. (2011) Causal involvement of *mammalian-type cryptochrome* in the circadian cuticle deposition rhythm in the bean bug *Riptortus pedestris*. *Insect Molecular Biology* 20: 409-415.
150. Ikeno, T., Numata, H. and Goto, S.G. (2011) Circadian clock genes *period* and *cycle* regulate photoperiodic diapause in the bean bug *Riptortus pedestris* males. *Journal of Insect Physiology* 57: 935-938.
151. Ikeno, T., Numata, H. and Goto, S.G. (2011) Involvement of *mammalian-type cryptochrome* in the photoperiodic response of the bean bug *Riptortus pedestris*. *Biochemical and Biophysical Research Communications* 410: 394-397.
152. Hamasaka, Y., Watari, Y., Arai, T., Numata, H. and Shiga, S. (2011) Comparison of the effect of constant illuminations in a white-eye mutant with that in the wild type, in the blow fly, *Protophormia terraenovae*. *Biological Rhythm Research* 42: 303-310.
153. Moriyama, M. and Numata, H. (2011) A cicada ensured its fitness during climate warming by synchronizing its hatching time with the rainy season. *Zoological Science* 28: 875-881.

154. Kaihara, K., Shinada, T., Ohfuné, Y., Numata, H. and Kotaki, T. (2012) Structure activity relationship of novel juvenile hormone, JHSB₃, isolated from a stink bug, *Plautia stali*. *Tetrahedron* 68: 106-113.
155. Takekata, H., Matsuura, Y., Goto, S.G., Satoh, A. and Numata, H. (2012) RNAi of the circadian clock gene *period* disrupts the circadian rhythm but not the circatidal rhythm in the mangrove cricket. *Biology Letters* 8: 488-491.
156. Matsumoto, K., Numata, H. and Shiga, S. (2013) Role of the brain in photoperiodic regulation of juvenile hormone biosynthesis in the brown-winged green bug, *Plautia stali*. *Journal of Insect Physiology* 59: 387-393.
157. Matsuno, T. Kawasaki, Y. and Numata, H. (2013) Small geographic variation in photoperiodic entrainment of the circannual rhythm in the varied carpet beetle, *Anthrenus verbasci*. *Zoological Science* 30: 304-310.
158. Kawakami, Y. and Numata, H. (2013) Effects of a pyrethroid on ovarian development in diapause females of the two spotted spider mite. *Journal of the Acarological Society of Japan* 22: 45-47.
159. Ikeno, T., Ishikawa, K., Numata, H. and Goto, S.G. (2013) Circadian clock gene *Clock* regulates the photoperiodic response in the bean bug, *Riptortus pedestris*. *Physiological Entomology* 38: 157-162.
160. Tanaka, A., Kuga, Y., Tanaka, Y., Goto, S.G., Numata, H. and Shiga, S. (2013) Effects of ablation of the pars intercerebralis on ecdysteroid quantities and yolk protein expression in the blowfly *Protophormia terraenovae*. *Physiological Entomology* 38: 192-201.
161. Ito, C., Goto, S.G. and Numata, H. (2013) Desiccation and heat tolerance of eggs of the Asian tadpole shrimp, *Triops granarius*. *Zoological Science* 30: 760-766.
162. Matsuno, T. Miyazaki, Y., Muramatsu, N. and Numata, H. (2013) Circannual pupation timing is not correlated with circadian period in the varied carpet beetle *Anthrenus verbasci*. *Biological Rhythm Research* 44: 849-855.
163. Hori, Y., Numata, H., Shiga, S. and Goto, S.G. (2014) Both anterior and posterior eyes are involved in photoperiodic termination of diapause in the two-spotted spider mite *Tetranychus urticae*. *Journal of Comparative Physiology A* 200: 161-167.
164. Takekata, H., Numata, H. and Shiga, S. (2014) The circatidal rhythm persists without the optic lobe in the mangrove cricket *Apteronemobius asahinai*. *Journal of Biological Rhythms* 29: 28-37.
165. Ikeno, T., Numata, H., Goto, S.G. and Shiga, S. (2014) The involvement of the brain region containing pigment-dispersing factor-immunoreactive neurons in the

- photoperiodic response of the bean bug *Riptortus pedestris*. Journal of Experimental Biology 217: 453-462.
166. Takekata, H., Goto, S.G., Satoh, A. and Numata, H. (2014) Light masking of the circatidal activity rhythms in the mangrove cricket *Apteronemobius asahinai*. Biological Rhythm Research 45: 229-233.
 167. Tawa, Y., Jono, T. and Numata, H. (2014) Circadian and temperature control of activity in Schlegel's Japanese Gecko, *Gekko japonicas* (Reptilia: Squamata: Gekkonidae). Current Herpetology 33: 121-128.
 168. Takekata, H., Numata, H., Shiga, S. and Goto, S.G (2014) Silencing the circadian clock gene *Clock* verifies dissociation of the circatidal clock from the circadian clock in the mangrove cricket. Journal of Insect Physiology 68: 16-22.
 169. Shimokawa, K., Numata, H. and Shiga, S. (2014) Pars intercerebralis promotes oviposition in the bean bug *Riptortus pedestris* (Heteroptera: Alydidae). Applied Entomology and Zoology 49: 525-528.
 170. Moriyama, M. and Numata, H. (2015) Urban soil compaction reduces cicada diversity. Zoological Letters 1: 19
 171. Todoroki, Y. Mochizuki, K. and Numata, H. (2015) Sexual attractiveness shared by both sexes mediates same-sex sexual behavior in the parasitoid wasp *Telenomus triptus*. Physiological Entomology 40: 239-246.
 172. Omura, S., Numata, H., and Goto, S.G. (2016) Circadian clock regulates photoperiodic responses governed by distinct output pathways in the bean bug, *Riptortus pedestris*. Biological Rhythm Research 47: 937-945.
 173. Moriyama, M., Matsuno, T. and Numata, H. (2016) Dead twig-discrimination for oviposition in a cicada, *Cryptotympana facialis* (Hemiptera: Cicadidae). Applied Entomology and Zoology 51: 615-621.
 174. Miyazaki, Y., Watari, Y. and Numata, H. (2016) Resetting of the circannual rhythm of the varied carpet beetle, *Anthrenus verbasci*, by low-temperature pulses. Physiological Entomology 41: 390-399.
 175. Matsuda, N., Kanbe, T., Akimoto, S. and Numata, H. (2017) Transgenerational seasonal timer for suppression of sexual morph production in the pea aphid, *Acyrtosiphon pisum*. Journal of Insect Physiology 101:1-6.
 176. Sakura, K. and Numata, H. (2017) Contact with water functions as a Zeitgeber for the circatidal rhythm in the mangrove cricket, *Apteronemobius asahinai*. Biological Rhythm Research 48:887-895.

177. Todoroki, Y. and Numata, H. (2017) Host discrimination modulates brood guarding behaviour and the adaptive superparasitism in the parasitoid wasp *Trissolcus semistriatus*. *Physiological Entomology* 42:363-368.
178. Endo, J. and Numata, H. (2017) Effects of embryonic responses to clutch mates on egg hatching patterns of Pentatomidae (Heteroptera). *Physiological Entomology* 42:412-417.
179. Todoroki, Y. and Numata, H. (2018) Factors affecting sequential sex allocation in the parasitoid wasp *Gryon japonicum*. *Entomological Science* 21:193-197.
180. Konagaya, T., Yokoi, T. Watanabe, M. and Numata, H. (2018) Overwintering success in adults of the Japanese common grass yellow *Eurema mandarina*. *Entomological Science* 21:216-224.
181. Konagaya, T. and Numata, H. (2018) Effect of mating on survival at low temperature in females of the Japanese common grass yellow, *Eurema mandarina*. *Ecological Entomology* 43:695-698.
182. Takekata, H., Numata, H. and Shiga, S. (2018) Effects of the pars intercerebralis removal on the circatidal rhythm in the mangrove cricket, *Apteronomobius asahinai*. *Journal of Comparative Physiology A* 204:801-810.
183. Matsuda, N., Tanaka, K., Watari, Y., Shintani, Y., Goto, S.G., Nisimura, T., Izumi, Y. and Numata, H. (2018) Northward expansion of the bivoltine life cycle of the cricket over the last four decades. *Global Change Biology* 24:5622-5628.
184. Endo, J., Takanashi, T., Mukai, H. and Numata, H. (2019) Egg cracking vibration as a cue for stink bug siblings to synchronize hatching. *Current Biology* 29:143-148.
185. Matsuda, N. and Numata, H. (2019) Altitudinal variation in life-history traits in the lawn ground cricket, *Polionemobius mikado*. *Entomological Science* 22:198-204.
186. Ikeda, K., Daimon, T., Sezutsu, H., Udaka, H. and Numata, H. (2019) Involvement of the clock gene *period* in the circadian rhythm of the silkworm *Bombyx mori*. *Journal of Biological Rhythms* 34:283-292.
187. *Matsuda, N., Fujita, S., Tanaka, K., Watari, Y., Shintani, Y., Goto, S.G., Nisimura, T., Izumi, Y. and Numata, H.* (2019) Robustness of latitudinal life-cycle variations against climate warming over the last five decades in a cricket. *Applied Entomology and Zoology* 54:349-357.
188. Endo, J. and Numata, H. (2020) Synchronized hatching as a possible strategy to avoid sibling cannibalism in stink bugs. *Behavioral Ecology and Sociobiology* 74:16.
189. Ando, Y., Matsumoto, K., Misaki, K., Shiga, S., Numata, H., Kotaki, T., Shinada, T. and Goto, S.G. (2020) Juvenile hormone III skipped bisepoxide, not its stereoisomers,

as a juvenile hormone of the bean bug *Riptortus pedestris*. *General and Comparative Endocrinology* 289: 113394.

Reviews

1. Numata, H., Shiga, S. and Morita, A. (1997) Photoperiodic receptors in arthropods. *Zoological Science* 14: 187-197.
2. Numata, H. and Nakamura, K. (2002) Photoperiodism and seasonal adaptations in some seed-sucking bugs (Heteroptera) in central Japan. *European Journal of Entomology* 99: 155-161.
3. Numata, H. (2004) Environmental factors that determine the seasonal onset and termination of reproduction in seed-sucking bugs (Heteroptera) in Japan. *Applied Entomology and Zoology* 39: 565-573.
4. Shiga, S. and Numata, H. (2007) Neuroanatomical approaches to the study of insect photoperiodism. *Photochemistry and Photobiology* 83: 76-86.
5. Kotaki, T., Shinada, T. and Numata, H. (2012) Structure determination of a natural juvenile hormone isolated from a heteropteran insect. *Psyche: A Journal of Entomology* 2012, Article ID 924256, 7 pages.
6. Numata, H., Miyazaki, Y. and Ikeno, T. (2015) Common features in diverse insect clocks. *Zoological Letters* 1: 10.
7. Moriyama, M. and Numata, H. (2019) Eco-physiological responses to climate change in cicadas. *Physiological Entomology* 44:65-76.

Book Chapters

1. Shiga, S. and Numata, H. (2001) Anatomy and functions of the brain neurosecretory neurons with regard to reproductive diapause in the blow fly, *Protophormia terraenovae*. In: *Insect Timing: Circadian Rhythmicity and Seasonality*. Denlinger, D. L., Giebultowicz, J. and Saunders, D. S. (eds.) Elsevier Science B. V., Amsterdam, p. 69-83.
2. Numata, H. and Udaka, H. (2010) Photoperiodism in mollusks. In: *Photoperiodism: The Biological Calendar*. Nelson, R.J., Denlinger, D.L. and Somers, D.E. (eds.), Oxford University Press, Oxford, p.173-192.
3. Goto, S.G., Shiga, S. and Numata, H. (2010) Photoperiodism in insects: perception of light and the role of clock genes. In: *Photoperiodism: The Biological Calendar*. Nelson,

- R.J., Denlinger, D.L. and Somers, D. E. (eds.), Oxford University Press, Oxford, p.258-286.
4. Miyazaki, Y., Nisimura, T. and Numata, H. (2012) Circannual rhythm in the varied carpet beetle, *Anthrenus verbasci*. In: The Neurobiology of Circadian Timing (Progress in Brain Research vol.199). Kalsbeek, A., Mellow, M., Roenneberg, T. and Foster, R.G. (eds.), Elsevier, Oxford, p.439-456.
 5. Goto, S.G. and Numata, H. (2014) Insect Photoperiodism. In: Insect Molecular Biology and Ecology. Hoffmann, K.H. (ed.) CRC Press, Boca Raton, p.211-238.
 6. Satoh, A. and Numata, H. (2014) Circatidal rhythms and their entrainment to the tidal cycle in insects. In: Annual, Lunar and Tidal Clocks: Patterns and Mechanisms of Nature's Enigmatic Rhythms. Numata, H. and Helm, B. (eds.), Springer, Tokyo, p.25-39.
 7. Miyazaki, Y., Nisimura, T. and Numata, H. (2014) Circannual rhythms in insects. In: Annual, Lunar and Tidal Clocks: Patterns and Mechanisms of Nature's Enigmatic Rhythms. Numata, H. and Helm, B. (eds.), Springer, Tokyo, p.333-350.
 8. Shiga, S. and Numata, H. (2017) An early embryonic diapause stage and developmental plasticity in the band-legged ground cricket *Dianemobius nigrofasciatus* In: Cricket as a Model Organism: Development, Regeneration, and Behavior. Wilson-Horch, H., Mito, T., Popadić, A., Ohuchi, H. and Noji, S. (eds.), Springer, Tokyo, p.63-74.
 9. Matsuda, N. and Numata, H. (2019) (2019) Transgenerational seasonal timer in aphids. In: Biological Rhythms: Proceedings of the Sapporo Symposium on Biological Rhythm July 14-15, 2018. Honma, K. and Honma S. (eds.), Hokkaido University Press, Sapporo, p.97-105.