

Vladimír Landa (1923 - 2001)

TOMÁŠ SOLDÁN

Institute of Entomology, Academy of Sciences of the Czech Republic, 31 Branišovská, CZ – 370 05 České Budějovice, Czech Republic



Vladimír Landa, our esteemed colleague, facilitator of studies of insects in the Czech Republic in the second half of the past century and outstanding university teacher, scholar and friend, passed away on 8 November 2001 at the age of 78.

Vladimír Landa was born on 1 November 1923 in a teacher's family in West Bohemia where he spent his childhood being stimulated in interest in nature by his father and by Prof. Komárek who later became his university teacher at the Charles University in Prague. After attending grammar school he studied from 1945 – 1948 at the Faculty of Natural History and later he worked for a short time as an assistant professor in Department of Zoology. After having served in the army in 1950–1953, Vladimír Landa joined the staff of the Laboratory of Entomology in Prague led by Professor Komárek whom he had earlier assisted in research on mayflies during the war years. When the Institute of Entomology of the Academy of Sciences was established in 1962 Vladimír Landa became its first director. He worked at this position till 1990 carefully building this institute from a small laboratory in provisional spaces into an important centre of the laboratory and field research in entomology. Under his leadership, the

institute acquired a unique position and achieved wide international reputation.

There are several main streams of Vladimír's research activities. First of all, he was outstanding student of aquatic insects, mainly of the order Ephemeroptera. Vladimír's publications have dealt with their morphology, taxonomy, and ecology. Although he described numerous species the most important results he published concerned comparative anatomy of organ systems of larvae. He studied the tracheal system, alimentary canal, malpighian tubules, ventral nerve cord, and gonad of more than 80 % of known genera at that time. Comparisons of anagenetic trends showed in different lineages enabled him to reconstruct phylogenesis of suborders and individual families or subfamilies. His higher classification of the order is widely accepted in reviews and monographs on Ephemeroptera till the present. On the basis of detailed field observations he was the first who suggested the classification of life cycles of mayfly species. His monograph on taxonomy of the former Czechoslovakia's mayfly fauna is often used by students, hydrobiologists and taxonomists, despite it is now more than 30 years old and, unfortunately, written in Czech. He studied more than 2,500 localities at this area and there are more than one million specimens in his collection. This collection has served as the basis of much of his research as well as that of many others with whom he has generously shared this

valuable resource. His cooperation on a system enabling bioindication of water quality according to mayfly communities and prediction of future changes of aquatic environment was extremely stimulative. Anyone who had engaged Vladimír in conversation about mayflies quickly becomes aware of his vast knowledge of the group, and one got the impression that he had to possess more unwritten information about mayflies than he had written, even given in his lengthy bibliography.

From the early fifties, Vladimír has been intensively studying the development of insect gonads in general, namely spermatogenesis and oogenesis. He started with the cockchafer that represented a serious pest at that time like model organism. He described spermatogenesis and oogenesis of this beetle in detail and published pioneer study on structure, function and transfer of the spermatophore published e.g. in *Nature*.

Last but not least, Vladimír was interested in specific and general problems of plant protection and in general problems of changing environment. For the past at least 20 years he has been intensively working in SGOMSEC (Scientific group of methods for safety evaluation of chemicals). He has prepared numerous contributions at this respect by no means limited only to insects. Vladimír worked for a long time in some scientific bodies like e.g. SCOPE, IUBS, ISCU or Man and Biosphere Programme.

Although this obituary is really not intended to enumerate the number of Vladimír's publications, awards, positions achieved and organizing activities, I would like to mention his 6 books and monographs, more than 100 original scientific papers and tens of other publications despite administrative duties would sometimes hardly left time for true laboratory or field work. To acknowledge his scientific credit, Vladimír Landa was elected a member of Russian Academy of Sciences, honorary member of Academia Scientiarum Fennica, former Czechoslovak Academy of Sciences and Czech and numerous abroad entomological and zoological societies and numerous editorial boards. As a teacher at the Charles University, Praha and the University of South Bohemia, České Budějovice, Vladimír incorporated his general and special knowledge into his courses and presentations. As a leading scientists, university professor and supervisor of younger colleagues he established his own scientific school characterized by a dynamic conception of the biological basis of the protection of plant from insect pests and integrated pest control. He has been the tutor of tens of PhD and

postdoc students some of whom are now leading scientists in entomological laboratories and other research institutions in the Czech Republic as well as abroad.

Anyway, one of his specific abroad activities must not be omitted. Being at his first visiting professor stage in the USA in 1968, the idea to organize international conferences on mayflies arose from a discussion with Prof. Edmunds and the late Prof. Peters. He was always proud to be a member of Permanent Committee of these conferences till the present. He was delighted and very happy to have a possibility to organize one of our conferences (1983) in the Czech Republic and host the conference participants in his Institute of Entomology.

A very modest man, Vladimír was always quiet and honest, well wishing and completely devoid of aggressiveness, never refusing to give advice or even a personal help to anybody. Among his great qualities were courtesy and fair play. Being a personality that is not easily forgotten he was respected and popular among his fellow ephemeropterologists and friends for his optimism and cheerful disposition. He will always be inseparable part of the development of our modern entomological research, and a fondly remembered person among his disciples and colleagues.

Scientific publications of Vladimír Landa

- Landa V. 1945. The Czech mayflies (Ephemeroptera) *Baetis pumilus*, *rhodani*, *bioculatus* et spec. Acta Entomol. bohemoslov. 42: 132-141 (in Czech).
- Landa V. 1946. Interesting differences in distribution of mayflies in streams of the vicinity of Prague. Věda přírodní 1: 2-8 (in Czech).
- Landa V. 1948. Contributions to the anatomy of Ephemeroptera larvae. I. Topography and anatomy of tracheal system. Věst. Čs. spol. zool. 12: 25-82.
- Landa V. 1949a. Molting of the tracheal system of ephemeroptera larvae and nymphs. Acta Entomol. bohemoslov. 48: 1-10 (in Czech).
- Landa V. 1949b. A contribution to the question of gynandromorphism in mayflies (Ephemeroptera). Věst. Čs. spol. zool. 13: 272-279 (in Czech).
- Jungr A, Kunst M, Landa V, Mařan J, Sládeček F. 1951. Zoology for the 3rd Grade of Grammar Schools. Praha: Pedagogické nakl. pp. 248 (in Czech).
- Landa V, Doskočil J, Janda V, Novák K, Skuhřavý V. 1952. Evaluation of the effects of air dusting with Dynocid on cockchafers. Sbor. Čsl. Akad. zeměděl. 25: 409-414 (in Czech).
- Landa V, Novák K, Skuhřavý V. 1952a. Experiments with land dusting using DDT and HCH against cockchafers. Sbor. Čsl. Akad. zeměděl. 25: 415-418 (in Czech).

- Landa V, Novák K, Skuhřavý V. 1952b. Effects of DDT and HCH on cockchafer imagos under the laboratory conditions. Zool. entomol. listy 3: 171-177 (in Czech).
- Kratochvíl J, Landa V, Novák K, Skuhřavý V. 1953. Cockchafers and their Control. Praha: Academia Publ. House. pp. 153 (in Czech).
- Landa V. 1954a. To the distribution of northern species of mayflies in Czechoslovakia. Acta Entomol. bohemoslov. 51: 225-236 (in Czech).
- Landa V. 1954b. Ephemeroptera. In: Hrbáček J., How and Why to Collect Insects. Praha: Academia Publ. House. pp. 77-81 (in Czech).
- Landa V. 1954c. Plecoptera. In: Hrbáček J., How and Why to Collect Insects. Praha: Academia Publ. House. pp. 82-84 (in Czech).
- Kunst M, Landa V, Oliva O, Skuhřavý V, Veselovský Z. 1954. Zoological Practicum. Praha: Academia Publ. House. pp. 248 (in Czech).
- Landa V. 1955. Ephemeroptera, Plecoptera, Odonata. In: Kratochvíl J., System and Names of Animals. Praha: Academia Publ. House. pp. 15-18 (in Czech).
- Landa V, Novák K, Skuhřavý V, Hrdý I. 1955. A contribution to the bionomy of adult cockchafers, *Melolontha melolontha* L. Zool. entomol. listy 4: 135-144 (in Czech).
- Landa V, Novák K, Skuhřavý V. 1956a. A contribution to the control of cockchafer larvae in cultivated landscape. Zool. listy 5: 125-134 (in Czech).
- Landa V, Novák K, Skuhřavý V. 1956b. The effects of aerosols on cockchafers. Sb. Čes. Akad. Zem. věd 29: 551-564 (in Czech).
- Landa V. 1957a. A morphological and ecological study of *Brachycercus harisella* Curt. (Ephemeroptera). Acta Entomol. bohemoslov. 54: 363-368 (in Czech).
- Landa V. 1957b. A contribution to distribution, systematics, development and ecology of *Habrophlebia fusca* (Curt.) and *Habrophlebia lauta* (McLachl.). Acta Entomol. bohemoslov. 54: 148-156 (in Czech).
- Landa V, Hrdý I, Novák K, Skuhřavý V. 1958. Results of the study of the control of cockchafers in Czechoslovakia. Zool. Čas. 37: 394-402.
- Landa V. 1959a. The effects of DDT and HCH on the development of gonads of cockchafers. Trudy Akad. Nauk SSSR. pp. 279 (in Russian).
- Landa V. 1959b. Problems of internal anatomy of Ephemeroptera and their relations to the phylogeny and systematics of the order. Proc. IXth Int. Congr. Zool., London. pp. 133-135.
- Landa V. 1959c. The development and function of the male reproductive organs of *Melolontha melolontha* L. Acta Entomol. bohemoslov. 56: 313-331.
- Landa V. 1959d. Mayflies - order Ephemeroptera. In: A key to fauna of Czechoslovakia, III. Praha: Academia Publ. House. pp. 143-167 (in Czech).
- Landa V. 1960a. Czechoslovak entomology and perspectives of its development. Acta Symp. evol. insect., Praha. 1959. pp. 31-35.
- Landa V. 1960b. Development and function of imaginal male gonads in some beetles. Proc. Indian Sci. Congr., Bombay. pp. 47.
- Landa V. 1960c. Development and function of imaginal male reproductive organs of the Cockchafer (*Melolontha melolontha* L.). 8 Symp. Evol. Insect. pp. 111-114.
- Landa V. 1960d. Origin, development and function of the spermatophore in cockchafer (*Melolontha melolontha* L.). Acta Entomol. bohemoslov. 57: 297-316.
- Landa V. 1960e. The development of reproductive organs of the Cockchafer (*Melolontha melolontha* L.) in relation to the fat body. Zool. listy 9: 331-336 (in Czech).
- Landa V. 1961a. Experiments with an artificial spermatophore in the Cockchafer (*Melolontha melolontha* L. Acta Entomol. bohemoslov. 58: 297-301 (in Czech).
- Landa V. 1961b. Use of an artificial spermatophore in the study of activation of spermatozoa and development of spermatophores in the Cockchafer. Nature 190: 935-936.
- Landa V. 1962a. New findings in the development of the spermatophore of *Melolontha melolontha* L. Proc. XIth. Int. Congr. Entomol. pp. 355-357.
- Landa V. 1962b. Die Entwicklung der Mitteleuropäischen Ephemeropteren. Proc. XIth. Int. Congr. Entomol. pp. 250-254 (in German).
- Landa V. 1964. Organisation, Ergebnisse und Probleme der faunistischen Forschung in der ČSSR. Tagungsber. Dtsch. Akad. Landw. Berlin 60: 7-18.
- Landa V, Řežábová B. 1965. The effects of chemosterilans on development of reproductive organs in insects. Proc. XIIth Congr. Entomol., London. pp. 516-517.
- Landa V. 1966. Ephemeroptera. In: Straškraba M., On the distribution of the macrofauna and fish in two streams, Lucina and Moravka. Arch. Hydrobiol. 61: 515-536.
- Landa V, Řežábová B. 1966. The problem of insect sterilization. Agrochemie 5: 150-152 (in Czech).
- Landa V, Řežábová B. 1967. Chemosterilants applied to insect control. Sbor. Možnosti využití biol. boje v ochraně zem. plodin a lesních kultur. Praha: ÚVTIZ. pp. 94-98 (in Czech).
- Řežábová B, Landa V. 1967. Effect of 6-azauridine on the development of the ovaries in the house fly *Musca domestica* L. (Diptera). Acta Entomol. bohemoslov. 64: 344-351.
- Landa V. 1968a. Developmental cycles of Central European Ephemeroptera and their interrelations. Acta Entomol. bohemoslov. 65: 276-284.
- Landa V. 1968b. Ephemeroptera. In: Skuhřavý V. *et al.*, Rearing of Insects. Praha: Academia. pp. 61-65 (in Czech).

- anda V. 1968c. Sterilization applied to insect control. *Ochrana rostlin* 18: 141-148 (in Czech).
- Landa V. 1968d. Contribution to the knowledge of the action of chemosterilants in the reproductive organs and tissues of insects. *Proc. XIII. Int. Congr. Entomol.* pp. 423-424.
- Landa V, Řežábová B. 1968. Effects of thalidomide on the development of the house fly, *Musca domestica* L. *Acta Entomol. bohemoslov.* 65: 212-215.
- Masner P, Sláma K, Landa V. 1968a. Natural and synthetic materials with insect hormone activity. IV. Specific female sterility effects produced by a juvenile hormone analogue. *J. Exp. Morphol. Embryol.* 20: 25-31.
- Masner P, Sláma K, Landa V. 1968b. Sexually spread insect sterility induced by the analogues of juvenile hormone. *Nature* 219: 395-396.
- Řežábová B, Hora J, Landa V, Černý V, Šorm F. 1968. Sterilizing effects of some 6-ketosteroids on housefly (*Musca domestica* L.). *Steroids* 63: 475-496.
- Landa V. 1969a. Effects of some chemosterilants on the reproductive organs of insects. *Centre Nat. Res. Sci.* 189: 411-420.
- Landa V. 1969b. Die faunistische Erforschung der Wasserinsekten in der Tschechoslowakei und die Verwertung ihrer Ergebnisse *Votr. 3. Ent. Symp. Faun. Mitt.* 1968. Abh. Ber. naturk. Mus. Görlitz 44: 21-29.
- Landa V. 1969c. Mayflies - Ephemeroptera. *Fauna of Czechoslovakia*, 18. Praha: Academia. pp. 352 (in Czech).
- Landa V. 1969d. Comparative anatomy of mayfly larvae (Ephemeroptera). *Acta Entomol. Bohemoslov.* 66: 288-316.
- Landa V. 1969e. Ephemeroptera. In: Novák K., *Methods of collecting and mounting insects.* Praha: Academia. pp. 113-117 (in Czech).
- Landa V, Řežábová B. 1969. Anwendung von Chemosterilanten bei der Insektenbekämpfung und die in der Tschechoslowakischen Sozialistischen Republik auf diesem Gebiet bisher durchgeführte Forschung. *Tagungsber. Berlin: Dtsch. Akad. Landw.* 65: 101-104.
- Landa V. 1970a. *Ecdyonurus submontanus*, *Heptagenia quadrilineata*, *Rhithrogena hercynia* - new species of mayflies of the family Heptageniidae from Czechoslovakia. *Acta Entomol. Bohemoslov.* 67: 13-20.
- Landa V. 1970b. The effects of some chemosterilants on the reproductive organs of insects. *Coll. Int. L'influence des stimuli externes sur la gametogenese des insects*, Tours 1969, CNRS, Paris. pp. 411-420.
- Masner P, Sláma K, Žďárek J, Landa V. 1970. Natural and synthetic materials with insect hormone activity. X. A method of sexually spread insect sterility. *J. Econ. Entomol.* 63: 706-710.
- Hodek I, Landa V. 1971. Anatomical and histological changes during dormancy in two Coccinellidae. *Entomophaga* 16: 239-251.
- Landa V, Matolín S. 1971. Effects of chemosterilants on reproductive organs and embryogenesis in insects. *Intern. Atomic Energy Agency* 138/41: 173-182.
- Masner P, Landa V. 1971. The formation of compound egg chambers in a bug (Hemiptera) sterilized with 6-azauridine. *Can. Entomol.* 103: 1063-1078.
- Matolín S, Landa V. 1971. The effect of furyltriazine on oogenesis and embryogenesis in *Musca domestica* L. *Acta Entomol. bohemoslov.* 68: 1-5.
- Landa V. 1972a. Analogues of the juvenile hormone as chemosterilants. *Proc. XIVth Int. Congr. Entomol., Canberra* 1972. pp. 232.
- Landa V. 1972b. A contribution to the evolution of the order Ephemeroptera based on comparative anatomy. In: Peters W.L., Peters J.G. (eds). *Proc. 1st Intern. Congr. Ephemeroptera*, Tallahassee, E. J. Brill, Leiden. pp. 155-159.
- Landa V. 1972c. Contribution to the knowledge of the action of chemosterilants in the reproductive organs and tissues of insects. *Proc. XIIIth Intern. Congr. Entomol., Moscow*, Vol. 3, pp. 423-424.
- Bennetová B, Landa V, Turner R.B. 1972. Metabolic changes in the ovaries of the house fly, *Musca domestica* L., after the administration of aziridine chemosterilants. *Proc. XIIIth Int. Congr. Entomol., Moscow*, Vol. 3. pp. 434.
- Masner P, Sláma K, Landa V. 1972. Sexually spread insect sterility induced by analogues of the juvenile hormone. *Proc. XIII. Int. Congr. Entomol., Moscow*. pp. 427-428.
- Metwally MM, Landa V. 1972. Sterilization of the Khapra beetle, *Trogoderma granarium* Everts, with juvenile hormone analogues. *Z. angew. Entomol.* 72: 97-109.
- Metwally MM, Sehnal F, Landa V. 1972. Reduction of fecundity and control of the Khapra beetle by juvenile hormone mimics. *J. econ. Entomol.* 65: 1603-1605.
- Novák K, Landa V, Řežábová B. 1972. The possibility of applying chemosterilants to the control of some forest pests. *Proc. XIII. Intern. Congr. Entomol., Moscow*. pp. 429.
- Landa V, Metwally MM. 1974. Effects of conventional chemosterilants and juvenile hormone analogues on spermatogenesis in *Trogoderma granarium* (Coleoptera, Dermestidae). *Acta Entomol. Bohemoslov.* 71: 145-152.
- Rohdendorf E.B, Landa V. 1974. Effects of metepa on oogenesis in *Thermobia domestica* (Thysanura, Lepismatidae). *Acta Entomol. Bohemoslov.* 71: 153-160.
- Landa V. 1975. Thirty years of Czechoslovak entomology. In: *Thirty Years of Czechoslovak Biology.*: Kraj. Ped. ústav, Praha, pp. 65-69 (in Czech).

- Bennett-Řežábová B, Landa V. 1975. Effects of an analogue of the juvenile hormone on ovarian development and fecundity in the housefly, *Musca domestica* L. Inter. Atomic Energy Agency, Vienna 186/64: 359-362.
- Ondráček J, Žďárek J, Landa V, Ďatlov J. 1976. Importance of antennae for orientation of insects in a non-uniform microwave electromagnetic field. Nature 260: 522-523.
- Sehnal F, Skuhřavý V, Hochmut R, Landa V. 1976. Survival and fertility of *Lymantria dispar* and *Lymantria monacha* treated with juvenoids at the larval stage. Acta Entomol. Bohemoslov. 73: 373-381.
- Landa V. 1977a. Problems of internal anatomy of Ephemeroptera and their relation to the Phylogeny and systematics of their Order. Proc. 15th Int. Congr. Zool. 54: 1-3.
- Landa V. 1977b. Ephemeroptera in: Check-list of Insect Fauna of Czechoslovakia. Acta Faun. Entomol. Mus. Nat. Prague 4: 23-25.
- Landa V, Žďárek J. 1977. The possibilities of insect control by means of hormones and their insect analogues. Textbook, College of Agricult.,: Stát. ped. nakl. Praha, pp. 115-132 (in Czech).
- Soldán T, Landa V. 1977. Three new species of the genus *Oligoneuriella* (Ephemeroptera, Oligoneuriidae). Acta Entomol. Bohemoslov. 74: 10-16.
- Deseö KV, Benettová-Řežábová B, Landa V. 1977. Histological investigations of the gonads of some Lepidopterous species having reduced reproduction elicited by short photoperiod. Acta Phytop. Acad. Sci. Hung. 12: 327-336.
- Landa V, Novák K. 1978. Czechoslovak and Soviet cooperation in entomology. Acta Entomol. Bohemoslov. 75: 209-213.
- Matolín S, Soldán T, Landa V. 1978. Effects of chemosterilants on the reproductive organs of *Leptinotarsa decemlineata*. Acta Entomol. Bohemoslov. 75: 102-108.
- Landa V, Soldán T, Peters WL. 1980. Comparative anatomy of larvae of the family Leptophlebiidae (Ephemeroptera) based on ventral nerve cord, alimentary canal, malpighian tubules, gonads, and tracheal system. Acta Entomol. Bohemoslov. 77: 169-195.
- Smetnik AI, Šumakov EM, Landa V. 1980. The using of pheromones for control plants. Inf. Bull. VPSMOBB 1: 73-77 (in Russian).
- Landa V, Soldán T. 1981. Anagenic trends in the arrangement of internal organs of mayfly larvae. Symp. Sovrem. probl. evol. biol. morfol. zhivotnykh, Moskva. pp. 43-45 (in Russian).
- Soldán T, Landa V. 1981. Gynandromorphism, intersexuality and teratology of external genitalia in the order Ephemeroptera. Věst. Čs. spol. zool. 45: 189-203.
- Landa V, Novák K. 1982. History of Czechoslovak entomology in the years 1945-1960. In: Věda v Československu 1945 - 1960. Praha, pp. 245-253 (in Czech).
- Landa V, Soldán T. 1982a. Changes in distribution of mayflies in Bohemia during the past 20-30 years with regards to the South Bohemian region. Sb. Jihočes. Muz. Čes. Budějovice, Přír. vědy 22: 21-28.
- Landa V, Soldán T. 1982b. Some faunistic and biogeographic aspects of the mayfly fauna of the Hercynian and Carpathian mountains systems in Czechoslovakia (Ephemeroptera). Acta Mus. Reginaehradensis. pp. 58-60.
- Landa V, Soldán T. 1982c. *Ecdyonurus samalorum* sp.n., a new species of mayfly from Czechoslovakia (Ephemeroptera, Heptageniidae). Acta Entomol. Bohemoslov. 79: 31-36.
- Landa V, Soldán T, Edmunds G.F., jr. 1982. Comparative anatomy of larvae of the family Ephemerellidae (Ephemeroptera). Acta Entomol. Bohemoslov. 79: 241-253.
- Landa V, Soldán T. 1983. Ephemeroptera from Mongolia. Folia Entomol. Hungar. 44: 189-204.
- Landa V, Davey K.G. 1983. Invertebrates. In: Vouk V.B., Sheehan P.J., (eds). Methods for Assessing the Effects of Chemicals on Reproductive Functions. SCOPE 22, London: John Wiley Sons. pp. 93-104.
- Landa V, Bennettová B, Gelbič I, Matolín S, Soldán T. 1983. Methods for the assessment of the effects of chemicals on the reproductive function of insects. In: Vouk VB, Sheehan PJ, (ed.). Methods for Assessing the Effects of Chemicals on Reproductive Functions, SCOPE 22, London: John Wiley Sons. pp. 415-438.
- Soldán T, Landa V. 1983. List of references dealing with the Czechoslovak mayfly fauna (1840-1982). Inst. Entomol., Czechoslov. Acad. Sci. pp. 20.
- Landa V, Soldán T. 1984. Anagenetic trends in the arrangement of internal organs in mayfly larvae (Ephemeroptera). XVIIth Int. Congr. Entomol., Hamburg, Abstracts. pp. 404.
- Landa V. 1984. Studies on aquatic insects in Czechoslovakia with regard to changes in the quality of water in the last 20-30 years. In: Landa V., Soldán T., Tonner M., (eds). Proc. IVth Int. Conf. Ephemer., Bechyně. pp. 317-321.
- Landa V, Novák K, Soldán T. 1984. Changes of pH values at selected localities of the Upper Vltava, Lužnice and Otava River in 1959 (1956) and 1981. Sb. Jihočes. Muz. Čes. Budějovice, Přír. vědy 24: 1-12 (in Czech).
- Soldán T, Landa V. 1984a. Review: Levanidova I.M., (ed): Amfibioteskiye nasekomye gornykh oblastey Dalnego Vostoka SSSR (Amphibiotic Insects of Montane Regions of the Far East of the USSR). Acta Entomol. Bohemoslov. 81: pp. 177.
- Soldán T, Landa V. 1984b. Review: Overrein L.N., Seip H.M., Tollan J.K., (eds). Acid Precipitation - Effects on Forest and Fish. Final Report of the

- SNSF Project 1972-1980. Věst. Čs. spol. zool. 48: pp. 160.
- Soldán T, Landa V. 1984c. A concise history of the research of mayflies (Ephemeroptera) in Czechoslovakia with regard to changes in the quality of water in the last 20-30 years. In: Landa V., Soldán T., Tonner M., (eds). Proc. IVth Int. Conf. Ephemeroptera., Bechyně. pp. 11-17.
- Landa V, Soldán T. 1985a. Distributional patterns, chorology, and origin of the Czechoslovak fauna of mayflies (Ephemeroptera). Acta Entomol. bohemoslov. 82: 241-268.
- Landa V, Soldán T. 1985b. Phylogeny and Higher Classification of the Order Ephemeroptera: A Discussion from the Comparative Anatomical Point of View. Studie ČSAV, Academia, Praha. pp. 124.
- Landa V, Soldán T. 1986a. Invasive behavioural patterns of mayflies (Insecta, Ephemeroptera) in some man-influenced aquatic biotopes in Czechoslovakia. Ekológia 5: 239-246.
- Landa V, Soldán T. 1986b. Qualitative and quantitative changes in the composition of mayflies (Ephemeroptera) at selected localities of the Labe basin. Zprávy čs. spol. zool. 19-20: 49-50 (in Czech).
- Soldán T, Landa V. 1986a. Life cycle of *Palingenia fuliginosa* (Ephemeroptera, Palingeniidae) in Czechoslovakia. In: Velthuis H.H.W., (ed.). Proc. 3rd Europ. Congr. Entomol., Part 1, Amsterdam. pp. 143-146.
- Soldán T, Landa V. 1986b. Review: Steimann H., Zombori L., An Atlas of Insect Morphology. Acta Entomol. Bohemoslov. 83: pp. 212.
- Landa V, Soldán T, Šula J. 1987. Methods for assessing the effects on non-human biota of mixtures of chemicals: tests for pathological effects on insects. In: Vouk V.B. *et al.*, (eds). Methods for Assessing the Effects of Mixtures of Chemicals, SCOPE. pp. 465-478.
- Landa V, Soldán T. 1988a. Internal organs of mayflies (Ephemeroptera): A contribution to anagenesis of some anatomical structures in insects. XVIIIth Int. Congr. Entomol., Vancouver, Abstracts. pp. 81.
- Landa V, Soldán T. 1988b. Multivariate analysis of compositional changes of communities of Ephemeroptera (Insecta) in the Elbe basin, Czechoslovakia. XVIIIth Int. Congr. Entomol., Vancouver, Abstracts. pp. 162.
- Landa V, Soldán T. 1989. Distribution of Mayflies (Ephemeroptera) and its changes in the Labe Basin of Czechoslovakia in Connection with Changes of Water Quality. Studie ČSAV Academia, Praha 17: pp. 171 (in Czech).
- Blumauerová M. *et al.* 1989. Research of streptomycetes producing pesticides and plant growth regulators. In: Bushell M.E., Gräfe U., (eds). Bioactive Metabolites from Microorganisms. Progr. industrial microbiology 27: 237-252.
- Lepš J, Soldán T, Landa V. 1989. Multivariate analysis of compositional changes in communities of Ephemeroptera (Insecta) in the Labe basin, Czechoslovakia: a comparison of methods. Coenoses 4: 29-37.
- Soldán T, Landa V. 1989. Saprobilität-Veränderungen an einigen Lokalitäten im Elbe-Stromgebiet auf Grund der Verbreitung der Eintagsfliegen (Ephemeroptera). In: Klausnitzer H., (ed.). Mitteilungen SIEEC XI, Gotha. pp. 349-353.
- Zachardová D, Sehnal F, Landa V. 1989. Makisterone a content and gonadal development in *Pyrrhocoris apterus* reared under long versus short photoperiods. In: Tonner M., Soldán T., Bennettová B., (eds). Regulation of insect reproduction IV. pp. 59-71.
- Lepš J, Soldán T, Landa V. 1990. Prediction of changes in Ephemeroptera communities - a transitional matrix approach. In: Campbell I.C., (ed.). Mayflies and Stoneflies Life Histories and Biology. Dordrecht: Kluwer Acad. Publ. pp. 281-287.
- Landa V, Soldán T. 1991a. The possibilities of mayfly faunistics to indicate environmental changes of large areas (Ephemeroptera). In: Alba-Tercedor J., Sanchez-Ortega A., (eds). Overview and Strategies of Ephemeroptera and Plecoptera. Gainesville, Florida, The Sandhill Crane Press. pp. 559-565.
- Landa V, Soldán T. 1991b. VI. Autocidde methods of insect pest control. In: Hrdý I. *et al.*, (eds). Biopesticided in Agriculture. pp. 100-102 (in Czech).
- Landa V, Šula J, Marec F, Mat'ha V, Soldán T. 1991. Methods for assessing exposure of insects. In: Tardiff R.G., Goldstein B., (eds). Methods for Assessing Exposure of Human and Non-Human Biota. SCOPE, London: John Wiley & Sons Ltd. pp. 249-266.
- Soldán T, Landa V. 1991. Two new species of Caenidae (Ephemeroptera) from Sri Lanka. In: Alba-Tercedor J., Sanchez-Ortega A., (eds). Overview and Strategies of Ephemeroptera and Plecoptera. Gainesville, Florida, The Sandhill Crane Press. pp. 235-244.
- Landa V, Soldán T. 1992. Methods to assess toxicity to aquatic systems in functional ecosystem. In: Tardiff R.G., (ed.). Methods to Assess Adverse Effects of Pesticides on Non-targed Organisms. N.York etc., John Wiley & Sons. pp. 191-206.
- Bennettová B, Jegorov A, Kopáček P, Žurovec M, Kopecký J, Landa V, Weiser J, Mat'ha V. 1992. The use of insects, insect tissues and cells for testing, evaluation and comparative studie of the mode of action of drugs, mycotoxins and other biologically active compounds. In: Bennettová B., Gelbič I., Soldán T., (eds). Advances in regulation of insect reproduction. Inst.of Entomol., Czech Acad. Sci. pp. 27-30.
- Bennettová B, Landa V, Jegorov A, Mat'ha V, Tykva R. 1992. The effect of cyclosporin a on reproductive system of *Sarcophaga bullata* Parker and *Musca domestica* L. In: Bennettová B., Gelbič I., Soldán T., (eds). Advances in regulation of insect

- reproduction. Inst.of Entomol., Czech Acad. Sci. pp. 31-35.
- Landa V, Soldán T. 1995. Mayflies as bioindicators of water quality and environmental change on a regional and global scale. In: Corkum L.D., Ciborowski J.J.H., (eds). Current Directions in Research on Ephemeroptera. Toronto: Can. Scholars Press Inc. pp. 21-30.
- Soldán T, Landa V. 1995. Aquatic insects (Ephemeroptera, Plecoptera, Trichoptera): a comparison from the bioindication point of view. In: Boháč J, Tříska J, Tichý R, (eds). 8th Intern. Bioindicators Symposium, Abstracts, pp. 98.
- Landa V, Zahrádková S, Soldán T, Helešic J. 1997. The Morava and Elbe river basins, Czech Republic: a comparison of long-term changes in mayfly (Ephemeroptera) biodiversity. In: Landolt P., Sartori M., (eds). Ephemeroptera & Plecoptera: Biology-Ecology-Systematics. Fribourg: Maron Tinguely & Lachat. pp. 219-226.
- Landa V, Helešic J, Soldán T, Zahrádková S. 1997. Stoneflies (Plecoptera) of the River Vltava, Czech Republic: a century of extinction. In: Landolt P., Sartori M., (eds). Ephemeroptera & Plecoptera: Biology-Ecology-Systematics, Fribourg: Maron+Tinguely & Lachat. pp. 288-295.
- Soldán T, Landa V. 1997. Methods of alternative testing in insects. 13th SGOMSEC. Joint Reserch Centre, Commission of the European Communities, Ispra, Italy, Jan. 25. Feb. 2, Abstracts. pp. 26-27.
- Landa V, Soldán T, Zahrádková S, Helešic J. 1998. Composition of fauna of stoneflies (Plecoptera) of the Czech Republic from the biodiversity conservation point of view. In: Brunnhofer V, Soldán T., (eds). Book of Abstracts, VIth European Congress of Entomology, České Budějovice, August 23-29. pp. 412-413.
- Soldán T, Landa V. 1998. A key to the Central European species of the genus *Rhithrogena* Eaton, 1881 (Ephemeroptera, Heptageniidae). Klapalekiana, 35: 25-37.
- Soldán T, Zahrádková S, Helešic J, Dušek L, Landa V. 1998. Distributional and Quantitative Patterns of Ephemeroptera and Plecoptera in the Czech Republic: A Possibility of Detection of Long-term Changes of Aquatic Biotopes. Folia Fac. Sci. Natur. Univ. Masarikiana. Brunensis 98: 1- 305.
- Soldán T, Landa V, Zahrádková S. 1999. Long-term changes of diversity of mayflies (Ephemeroptera) in the Křemelná river basin (Šumava Mts., Czech Republic). Silva Gabreta 3: 95-114.
- Soldán T, Landa V. 2000. Long-term changes of Ephemeroptera and Plecoptera (Insecta) diversity of three Šumava mountain lakes. Workshop on Acidified Lakes in the Bohemian/Bavarian Forest – History, Present and Future, March 21-23, 2000, České Budějovice. pp. 44.
- Soldán T, Zahrádková S, Landa V. 2001. Long-term changes of aquatic insects (Ephemeroptera, Plecoptera, Trichoptera) in a regulated segment of the river Křemelná (The Šumava Mts., Czech Republic). In: Pánek J., (ed.). Present status of Research in the Šumava National Park. Správa NP a CHKO Šumava, Vimperk. pp. 168-171 (in Czech).
- Soldán T, Landa V. 2002. Diversity of mayflies (Ephemeroptera) of the Novohradské Mountains: A review of recent knowledge. In: Papáček M., (ed.). Biodiversity and Environmental Conditions of the Novohradské Mountains. Univ. Soth Bohemia, Inst. Entomol., České Budějovice. pp. 211-218.