

ZDRAVKO LORKOVIĆ (1900–1998) SHORT BIOGRAPHY AND SCIENTIFIC WORK

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Zdravko Lorković was an eminent biologist in world terms and one of the greatest in Croatia in the 20th century: an entomologist and lepidopterist, expert in taxonomy and ecology, geneticist and experimental evolutionist. He was born in 1900 in Zagreb an eminent family and spent his entire life here in Croatia. He started the study on the Technological Faculty of the University of Zagreb, but in 1920 the passion for nature overcomes and he begins the study of natural sciences on the Faculty of Philosophy. In 1922 Lorković becomes assistant curator of Prof. Tućan in the former Mineralogical and Petrological Museum (today a part of the Croatian Natural History Museum). Here he makes some excellent drawings for professor Tućans' textbook, starts his scientific work on minerals and publishes his first scientific paper (1923). Even as mineralogist he raises butterflies at the windows of the Museum and after almost 100 years his collection of butterflies comes to this institution, to the same address. In 1924 he gets his diploma with the thesis entitled »Experimental researches on the effects of the colour and odour on insects«. Even then he is aware of current thoughts in biology of the present time and estimates that these fluctuations promise revolutions in science. Few years later (1928) he received his PhD with work named »The analysis of the species concept and variability based on research on some butterflies« and very early starts his carrier as a professor. First, until 1951, at the Veterinary Faculty and after that at the Faculty of Medicine in Zagreb, under Professor B. Zarnik, where Lorković received his retirement in 1970. At the same time he taught zoology and entomology to students of the Agriculture and Forestry Faculty, and genetics to students of the Natural Science Faculty and post-graduate students of the University of Zagreb. From 1965 he was a regular member of Yugoslav Academy of Sciences and Arts (today the Croatian Academy of Sciences and Arts). He was a member of numerous professional societies like the Zoological Academy in Agra (India), the European Lepidopterological Society, the Lepidopterists' Society of the USA, the Entomological Society of the Kingdom of Serbs, Croats and Slovenians, the Yugoslav Entomological Society,

the Croatian Entomological Society and the Croatian Biological Society. He was for many years chief editor of the journal *Acta entomologica Jugoslavica* and last years of *Entomologia Croatica*, and was also in the editorial boards of the journals *Genetika*, *Periodicum biologorum*, *Natura Croatica* and *Shilap*. He published 86 scientific papers (including three important summaries of congress reports), and more than 50 professional papers, congress reports and obituaries.

For many holarctic lepidopterists Lorković was, before all, an appreciated taxonomist (1927, 1930/31, 1938, 1943, 1950, 1953c, 1955c, 1960, 1967, 1968, 1969, 1976a, 1985, 1989b, 1993a, 1998). He was a specialist in butterflies, especially in Pieridae, Lycaenidae, Nymphalidae and Satyridae. He described several new species of butterflies: *Dasychira grundi* 1930 (syn. *Calliteara pudibunda* Linnaeus, 1758), *Leptidea lactea* 1950, *Erebia calcaria* 1953, *E. nivalis* Lork. et de Lesse 1960, *Pieris balcana* 1969, and many subspecies *Cupido argiades tibetanus* 1943, *C. argiades nuditurca* 1943, *C. argiades*



From photodocumentation of Prof. Lorković – on Southern Mali Risnjak peak, 8. VIII. 1961. (photo: K. Igalffy)

merisina 1943, *Leptidea morsei batangi* 1950, *L. morsei ommani* 1950, *Erebia styx trentae* 1953, *E. cassioides illyrica* 1953, *E. cassioides illyromacedonica* 1953, *E. gorge vagana* 1955, *E. stirius kleki* 1955, *E. tyndarus allgauica* 1957, *E. calcarius cavallus* Lork. et de Lesse 1960, *E. oeme megaspodia* Mladinov et Lork. 1980, *Leptidea reali melanogyna* 1993. In taxonomic revisions through the morphology, ecology and colour pattern of similar species of butterfly, before modern sophisticated computer methods, he established the foundations of analytic methods of making distinctions with the aid of the discontinuity obtained through the correlation of several inherited qualitative and quantitative characteristics (Lorković's method with estimation of total and partial transitions; 1927, 1928, 1943), arising as a result of reproductive isolation. He discerned the taxonomic importance of morphological differences in non-functional parts of reproductive organs (1931, 1953a, 1955a).

He was one of the pioneers in the experimental investigations of the heterodynamic development of the butterfly pupae (1929a), and the phenotypic modifiability in seasonal generations in the temperate zone (1929b). From the time of his dissertation onwards, he devoted practically the whole of his life to the study of the speciation. From the very onset of his scientific work, it was clear that he supported the idea of evolution accepted in its entirety today. He was cited by evolutionist Ernst MAYR himself (1963) as author of a classic example of a complex morphological, genetic and ecological analysis of sibling species of butterflies of the genus *Everes* (= *Cupido*), in which, still in the first half of the 20th century (1928, 1938, 1942, 1943) he gave firm support to the conception of the biological species. Lorković was one of the pioneers of cytotaxonomy, and was the first to report the number of haploid chromosomes for more than 60 species of palearctic butterflies (1941, 1952, 1966, 1968). He was the author (1941, 1949) of the hypothesis that through diffuse kinetochore induced ploidy explained the appearance of an exceptionally large (*Leptidea*, *Polymmatius*) or small (*Erebia*) number of chromosomes in butterflies. His great knowledge of butterfly chromosomes and their meiotic behaviour (1974a, 1978) resulted in his being entrusted with the writing of a special chapter about chromosomes and their role in systematics and phylogenesis in the book *Introduction to Lepidopterozoology* (1990) from the series of monographs *The Butterflies of Europe*.

He introduced new methods of artificial butterfly copulation (1947, 1953a), thus increasing the experimental knowledge of phylogenetic relations, and thus the pathways of microevolution in butterflies (1978, 1997). In so doing, he himself performed a number of demonstrations that, in nature, speciation in different phases exists. Two Lorković's examples are of special interest: *Erebia tyndarus* and *Pieris napi* aggregate with different taxa that have only partially undergone the process of differentiation through reproductive isolation into new species (1953b, 1953c, 1957, 1958b, 1962b, 1989a). For such taxa, he accepted and corrected Mayr's definition of the concept of *semispecies*, and urged that the *semispecies* be accepted in international rules of zoological nomenclature (1953c, 1955b, 1958a, 1958b, Kiriakoff & Lork. 1958, Lork. & Kiriakoff 1958, 1961b, 1962a), which was only indirectly accomplished in nomenclature rule Article 6. (b) for members of *aggregate* (= Mayr's term «superspecies») of *species or subspecies within a species* (RIDE et al./eds/1985). He discerned the independence of the appearance of different reproductive isolation

mechanisms (1958b, 1961b, 1978), and proved their independence of total genetic diversity (1986).

Lorković bequeathed a collection of about 40,000 butterflies, half of which comprise a faunistic collection (mostly from the neighbourhood of Zagreb and from Mt Velebit in Croatia, as well as from the Alps and the high mountains of the western Balkan), and half are specimens from crossing experiments (mainly between Pieridae from Europe, and with taxa from Asia and North America), with the preserved documentation. The collection is kept as a special unit, with his microscope slides, library, letters, photographic documentation, diaries and notes in the Croatian Natural History Museum in Zagreb, where offprint of his papers can be obtained (e-mail: Martina.Sasic@hpm.hr).

REFERENCES

- MAYR, E., 1963: Animal species and evolution. Second edition. Belknap Press of Harvard University, Cambridge (USA).
- ŠKREB, N., 1979: Biography of academian Zdravko Lorković on the occasion of 75 year of his life. *Prir. istr. (JAZU)* **43**, 7–13 (Croatian).
- JAKŠIĆ, P., 1980: Academian Zdravko Lorković (80 years). *Acta entomol. Jugosl.* **16** (1–2), 7–18 (Croatian).
- RIDE, W. D. L. *et al.* (eds.), 1985: International Code of Zoological Nomenclature. Third edition. Int. Trust for Zool. Nomenclature, British Museum & Univ. of California Press, London, Berkeley and Los Angeles.
- KUDRNA, O. (ed.), 1990: Butterflies of Europe, Vol. 2, Introduction to Lepidopterology. AULA-Verlag, Wiesbaden.

BIBLIOGRAPHY

1. LORKOVIĆ, Z., 1923: Contribution to mineral deposits of Yugoslavia. *Glasn. Hrvatsk. Prir. Društva* **35**(1–2), 17–20 (Croatian).
2. LORKOVIĆ, Z., 1927: *Leptidea sinapis* ab. *major* Grund als selbständige Art aus Kroatien. *Glasn. ent. društva kr. Srba, Hrvata i Slovenaca.* **2**(1), 26–41 + 2 tabl (Croatian, summary in German).
3. LORKOVIĆ, Z., 1928: Analyse des Speziesbegriffes und der Variabilität der Species auf Grund von Untersuchungen einiger Lepidopteren. *Glasn. Hrvatsk. Prir. Društva* **39–40**, 1–64 + 2 tabl (Croatian, summary in German).
4. LORKOVIĆ, Z., 1929a: Gesetzmässigkeit in der Faltergrösse der jahreszeitlichen Generationen. *Glasn. Jugoslov. Ent. Društva* **3–4**(1–2), 109–116 (Croatian, summary in German).
5. LORKOVIĆ, Z., 1929b: Unterschiede zwischen homo- und heterodynamer Entwicklung bei den Insekten. *Jahrb. Univ. Zagreb*, 283–297 (Croatian, summary in German).
6. LORKOVIĆ, Z., 1930: *Dasychira grundi*, eine neue europäische Art. *Verh. Zool.-Bot. Ges Wien* **80**(1–2), 5–11.
7. LORKOVIĆ, Z., 1930/31: Verwandtschaftliche Beziehungen in der *morsei-major-sinapis*-Gruppe des Gen. *Leptidia*. *Z. d. Ö. E. V.* **14**(6), **15**(1), pp 33 + 2 tabl.
8. LORKOVIĆ, Z., 1931: Die Bedeutung der Form des Genitalapparates für die Systematik der Lycaenini. *Glasn. Jugoslov. Ent. Društva* **5–6**(1–2), 118–132. (Croatian, summary in German).

9. LORKOVIĆ, Z., 1932: Zugfalter und Winterschlaf. Intern. Entomolog. Zeitschrift Guben **25** (46), 466–471.
10. LORKOVIĆ, Z., 1933a: Die Aufklärung der artlichen Zugehörigkeit der *Lycaena dubia* Schulz. Intern. Entomolog. Zeitschrift Guben **27**(5), 55–58.
11. LORKOVIĆ, Z., 1933b: Beiträge zur Ernährungsbiologie der Insekten. Recueil de trav. offert. à J. Georgévitch, 163–176. (Croatian, summary in German).
12. LORKOVIĆ, Z., 1938: Studien über den Speziesbegriff. I. Artberechtigung von *Everes argiades* Pall., *E. alcetas* Hffgg. und *E. decolorata* Stgr. Mitt. Münchn. Ent. Ges. **28**(2), 215–246.
13. LORKOVIĆ, Z., 1939: Entomological investigations in Vardar valley. Ljetopis Jugoslavenske akademije znanosti i umjetnosti **51**, 159–162 (Croatian).
14. LORKOVIĆ, Z., 1941: Die Chromosomenzahlen in der Spermatogenese der Tagfalter. Chromosoma **2**(2), 155–191.
15. LORKOVIĆ, Z., 1942: Studien über den Speziesbegriff: II. Artberechtigung von *Everes argiades* Pall., *E. alcetas* Hffgg. und *E. decolorata* Stgr. Mitt. Münchn. Ent. Ges. **32**(2), 599–624 + 3 tabl.
16. LORKOVIĆ, Z., 1943: Modifikationen und Rassen von *Everes argiades* Pall. und ihre Beziehungen zu den klimatischen Faktoren ihrer Verbreitungsgebiete. Mitt. Münch. Ent. Ges. **33**(2–3), 431–478 + 5 tabl.
17. LORKOVIĆ, Z., 1947: Modes artificiels d'accouplement des papillons. Period. biol. **1**, 86–98 (Croatian, summary in French).
18. LORKOVIĆ, Z., 1949: Chromosomenzahlen-Vervielfachung bei Schmetterlingen und ein neuer Fall fünffacher Zahl. Rev. Suisse Zool. **56**(4), 243–249.
19. LORKOVIĆ, Z., 1950: Neue ostasiatische Arten und Rassen der Gattung *Leptidea* nebst Nomenklaturberichtigungen. Period. biol. **2**/3, 57–76.
20. LORKOVIĆ, Z., 1952: Beiträge zum Studium der Semispecies. Spezifität von *Erebia stirijs* Godt. und *E. styx* Frr. Z. Lepidopt. **2**(3), 159–176.
21. LORKOVIĆ, Z., 1953a: L'accouplement artificiel chez les lépidoptères et son application dans les recherches sur la fonction de l'appareil génital des insectes. Physiol. Comp. Oecol. **3**(2–3), 313–320.
22. LORKOVIĆ, Z., 1953b: Spezifische, semispezifische und rassische Differenzierung bei *Erebia tyndarus* Esp. I. Drei neue allopatrische Formen von *Erebia tyndarus* Esp. und der Grad ihrer Fortpflanzungsisolierung. Bull. Int. **10**, 163–192. (Extract of Croatian version from Acad. Yougoslave Sci., Cl. Sci. 294, 269–309)
23. LORKOVIĆ, Z., 1953c: Spezifische, semispezifische und rassische Differenzierung bei *Erebia tyndarus* Esp. II. Differenzierungsgrad und verwandtschaftliche Verhältnisse der europäischen Formen von *Erebia tyndarus* Esp. Bull. Int. **10**, 193–224. (Extract of Croatian version from Acad. Yougoslave Sci., Cl. Sci. 294, 315–358).
24. LORKOVIĆ, Z. & H. DE LESSE, 1954a: Expériences de croisements dans le genre *Erebia* (Lépidoptères Satyridae). Bull. Soc. Zool. France **79**(1), 31–39.
25. LORKOVIĆ, Z. & H. DE LESSE, 1954b: Nouvelles découvertes concernant le degré de parenté d'*Erebia tyndarus* Esp. et *E. cassioides* Hohenw. Lambillionea **54**(9–10), 58–67, (11–12), 78–86.
26. LORKOVIĆ, Z., 1955a: Variability of the organs of the genital armature in insects due to their functional value. Zbornik I. kongresa biol. Jugoslavije, Zagreb 12.–15. VII. 1953. Period. biol. **7**, 234–235. (Croatian, summary in English).
27. LORKOVIĆ, Z., 1955b: Semispecies a necessary new taxonomic category. Zbornik I. kongresa biologa Jugoslavije, Zagreb 12.–15. VII. 1953. Period. biol. **7**, 236–237. (Croatian, summary in English).
28. LORKOVIĆ, Z., 1955c: Die Populationsanalyse zweier neuen stenochoren *Erebia*-Rassen aus Kroatien. Period. biol. **8**, 53–76.

29. LORKOVIĆ, Z. & H. DE LESSE, 1955: Note supplémentaire sur le groupe d'*Erebia tyndarus* Esp. *Lambillionea* **55**(7–8), 55–58.
30. LORKOVIĆ, Z., 1957: Die Speziationsstufen in der *Erebia tyndarus* Gruppe. I. Die morphologischen, ökologischen und chorologischen Merkmale der alpinen Formen *cassioides*, *nivalis*, *tyndarus* und *calcarius*. *Period. biol.* **10**(1–2), 61–110 + 2 tabl.
31. LORKOVIĆ, Z., 1958a: Die Merkmale der unvollständigen Speziationsstufe und die Frage der Einführung der Semispezies in die Systematik. *Proc. of a symp. held at the Univ. of Uppsala in comemoration of the 250th anniversary of the birth of Carolus Linnaeus (1957)*. *Uppsala Universitets Årsskrift* **6**, 159–168.
32. LORKOVIĆ, Z., 1958b: Some peculiarities of spatially and sexually restricted gene exchange in the *Erebia tyndarus* Group. *Cold Spring Harbour Symp. on Quantitative Biology*, New York **3**.–11. 6. 1958, **23**, 319–325.
33. LORKOVIĆ, Z. & Č. HERMAN, 1958: The genetics of morphism in *Colias croceus* Fourc. from the surroundings of Zagreb. *Period. biol.* **11**(1–4), 55–59.
34. KIRIAKOFF, S. G. & Z. LORKOVIĆ, 1958: Proposed insertion in the »Règles« of provisions recognising »Superspecies« as a special category for the classification and nomenclature of taxa belonging to the above group as now proposed to be defined. *Bull. Zool. Nom.* **15/B** (Case No. 57), 1024–1030.
35. LORKOVIĆ, Z. & S. G. KIRIAKOFF, 1958: Proposed insertion in the »Règles« of provisions recognising »semispecies« as a special category for the classification and nomenclature of definite groups of taxa as now proposed to be defined. *Bull. Zool. Nom.* **15/B** (Case No. 58), 1031–1033.
36. LORKOVIĆ, Z. & H. DE LESSE, 1960: Recherches sur la distribution géographique des représentants du groupe d'*Erebia tyndarus* Esper, *Erebia calcarius* au Monte Cavallo au nord de Venise. *Boll. della Soc. Ent. Ital.* **90**(7–8), 123–129.
37. LORKOVIĆ, Z., 1961a: Zwei neuerliche Publikationen über einige Glieder der *Erebia tyndarus* – Gruppe (Lep., Satyridae). *Entomol. Ts. Årg.* **82**(3–4), 197–202.
38. LORKOVIĆ, Z., 1961b: Abstufungen der reproduktiven Isolationmechanismen in der *Erebia tyndarus* – Gruppe und deren Systematik. *Verhandlungen XI. Int. Kongress für Entomol.* Wien 1960 **1**, 134–142.
39. HERMAN, Č. & Z. LORKOVIĆ, 1961: Olivegreen mutation of the larvae's color. *Period. biol.* **14**(3–4), 151–153.
40. LORKOVIĆ, Z. & Č. HERMAN, 1961: The solution of a long outstanding problem in the genetics of dimorphism in *Colias*. *J. of the Lepidopterists' Society* **15**(1), 43–55
41. LORKOVIĆ, Z., 1962a: Wesen, Anwendungsbereich und Nomenklatur des Taxons Semispecies. *Verhandlungen XI. Int. Kongress für Entomol.* Wien 1960, **3**, 325–328.
42. LORKOVIĆ, Z., 1962b: The genetics and reproductive isolating mechanisms of the *Pieris napi-bryoniae* group. *J. of the Lepidopterists' Society* **16**(1), 5–19, (2), 105–127.
43. HERMAN, Č. & Z. LORKOVIĆ, 1962: New »spotted« gene in caterpillars of *Colias croceus* Fourc. *Bull. Sci. Cons. Acad. RPF Yougoslave*, A. **7**(3), 59–60.
44. HERMAN, Č. & Z. LORKOVIĆ, 1963: Changes of the genetic structure in laboratory populations of *Colias croceus*. *Bull. Sci. Cons. Acad. RSF Yougoslave*, A. **8**(3–4), 67.
45. LORKOVIĆ, Z., 1965: Über die neuerliche Verwirrung um die 2. Generation von *Euchloë orientalis* Brem. *Nachrichtenblatt der Bayer. Entomol.* **14**(1), 1–4, (2), 10–15.
46. LORKOVIĆ, Z. & R. SIJARIĆ, 1967: Der Grad der morphologischen und ökologischen Differenzierung zwischen *Aricia agetis* (Schiff.) and *A. allous* (Hbn.) in der Umgebung von Sarajevo. *Glasn. Zemaljskog muz. Bosne i Hercegovine* **6**, 129–170 (Croatian, summary in German).

47. LORKOVIĆ, Z., 1968: Systematisch-genetische und ökologische Besonderheiten von *Pieris er-gane* Hbn. (Lep., Pieridae). Mitt. Schweiz. Entomol. Ges. **41**(1–4), 233–244.
48. LORKOVIĆ, Z., 1969: Karyologischer Beitrag zur Frage der Fortpflanzungsverhältnisse süd-europäischer Taxone von *Pieris napi* (L.) (Lep., Pieridae). Period. biol. (1968) **21**(1–4), 95–136.
49. LORKOVIĆ, Z., 1971a: Färbungsanpassung einiger Rhopaloceren an den Steinboden im Karste. Ekologija **6**(2), 245–246.
50. LORKOVIĆ, Z., 1971b: *Pieris napi* (L.) morph *funebri*, an unusual new crossing recombina-tion. Acta entomol. Jugosl. **7**(1), 5–9 (Croatian, abstract in English, summary in German).
51. LORKOVIĆ, Z., 1971c: *Gegenes nostradamus* F. and *G. pumilio* Hffgg. on the eastern Adriatic coast. Acta entomol. Jugosl. **7**(2), 56.
52. KORUNIĆ, Z. & LORKOVIĆ, Z., 1971: A new mutant of the insect *Tribolium confusum* Duval (Coleoptera) found in Yugoslavia. Acta entomol. Jugosl. **7**(2), 49–55 (Croatian, summary in English).
53. LORKOVIĆ, Z. & L. MLADINOV, 1971: Butterflies of the upper Kupa valley. I. Rhopalocera and Hesperidae. Acta entomol. Jugosl. **7**(2), 65–70 (Croatian, summary in English).
54. LORKOVIĆ, Z., 1972: Karyological identification of the Caucasian species of the *Erebia tyn-darus* Group (Lep., Satyridae). Acta entomol. Jugosl. **8**(1–2), 111–121.
55. LORKOVIĆ, Z., 1973: 150 Jahre bis zur Entdeckung der präimaginalen Stadien von *Spialia orbifer* Hbn. (Lepid., Hesperidae). Acta entomol. Jugosl. **9**(1–2), 67–70.
56. LORKOVIĆ, Z., 1974a: Meiotic chromosome behaviour in *Pieris napi* X *P. melete* hybrids (Lep., Pieridae) and its taxonomic significance. Period. biol. **76**(2), 93–100.
57. LORKOVIĆ, Z., 1974b: Die Verteilung der Variabilität von *Hipparchia statilinus* Hufn. (Lepid., Satyridae) in Beziehung zum Karstboden des ostadriatischen Küstenlandes. Acta entomol. Jugosl. **10**(1–2), 41–53.
58. LORKOVIĆ, Z., 1975a: Die westliche Arealgrenze der *Leptidea morsei* Fent. und deren Fak-toren (Lep., Pieridae), Anlässlich des Erstfundes der Art für Bosnien und Herzegowina. Wiss. Mitt. Bosnisch-Herzegowinischen Landesmus., C. **4–5**, 143–151.
59. LORKOVIĆ, Z., 1975b: Karyologische Übereinstimmung sibirischer und nordamerikanischer *Erebia callias* Edw. (Lepidopt., Satyridae). Acta entomol. Jugosl. **11**(1–2), 41–46.
60. LORKOVIĆ, Z., 1976a: Taxonomische, ökologische und chorologische Beziehungen zwischen *Hipparchia fagi* Scop., *H. syriaca* Stgr. und *H. alcyone* D.&S. (Lepidopt. Satyridae). Acta entomol. Jugosl. **12**(1–2), 11–33.
61. LORKOVIĆ, Z., 1976b: *Apatura metis* Fr., neue Art für SR Kroatien und Jugoslawien (Lep., Nymphalidae). Acta entomol. Jugosl. **12**(1–2), 34 (Croatian, summary in German).
62. LORKOVIĆ, Z., 1977: Über die »Seltenheit« einzelner Nachfalterarten in der S. R. Kroa-tien. Acta entomol. Jugosl. **13**(1–2), 93–94 (Croatian, summary in German).
63. LORKOVIĆ, Z., 1978: Types of hybrid sterility in diurnal Lepidoptera, speciation and taxon-omy. Acta entomol. Jugosl. **14**(1–2), 13–26.
64. LORKOVIĆ, Z., 1979: Eine unerwartete nachträgliche Bestätigung. Atalanta **10**(2), 158.
65. MLADINOV, L. & Z. LORKOVIĆ, 1979: Characteristics of the lowland *Erebia oeme* Hbn. ssp. nov. from the upper Kupa Valley in NW Yugoslavia in comparison to the mountain popu-lations. Acta entomol. Jugosl. **15**(1–2), 35–54 + 1 tabl.
66. LORKOVIĆ, Z., 1981: *Ectropis crepuscularia* Hbn. in SR Kroatien (Jugoslawien)? Acta entomol. Jugosl. **17**(1–2), 155–156 (Croatian, summary in German).
67. LORKOVIĆ, Z. & S. SILADJEV, 1982: Der Erstfund der Raupe von *Apatura metis* (Freyer, 1829) in Europa und deren Biotopen. Atalanta **13**(2), 126–135.

68. LORKOVIĆ, Z., 1982a: Bemerkungen zu dem Fund von *Leptidea morsei* in Griechenland. *Nota lepid.* 5(2–3), 111–113.
69. LORKOVIĆ, Z., 1982b: Berichtigung zu dem Aufsatz: Bemerkungen zu dem Fund von *Leptidea morsei* Fent. in Griechenland (Pieridae). *Nota lepid.* 5(4), 169–170.
70. LORKOVIĆ, Z., 1983a: Zusätzliches zu dem präimaginal Stadien von *Apatura metis* (FREYER, 1829) (Lep., Nymphalidae). *Atalanta* 14(1), 12–23.
71. LORKOVIĆ, Z., 1983b: A new *Syrichtus* and two doubtful *Pyrgus* species for the fauna of Yugoslavia. *Acta entomol. Jugosl.* 19(1–2), 33–41.
72. SIJARIĆ, R., LORKOVIĆ, Z., CARNELUTTI, J. & P. JAKŠIĆ, 1984: Rhopalocera. In: Nonveiller, G. (Ed.), *The Fauna of Durmitor I.* CANU 18, Section of nat. sci. 11, 95–184 (Croatian, summary in English).
73. LORKOVIĆ, Z., 1985: Taxonomische Differenzierung der südöstlichsten Populationen von *Erebia stirijs* Godart 1824 (Lep., Satyridae). *Acta entomol. Jugosl.* 21(1–2), 9–15.
74. MLADINOV, L. & Z. LORKOVIĆ, 1985: Distribution of mountain Macrolepidoptera fauna in S. R. Croatia, Yugoslavia. *Acta entomol. Jugosl.* 21(1–2), 17–36 (Croatian, English abstract, German summary).
75. LORKOVIĆ, Z., 1986: Enzyme electrophoresis and interspecific hybridization in Pieridae (Lepidoptera). *J. Res. Lepid.* 24(4), 334–358.
76. LORKOVIĆ, Z. & B. MIHLJEVIĆ, 1988: Discovery of *Lycaena (Palaeochrysophanus) hippothoe* Linnaeus 1761 in Bosnia and Hercegovina and the first detection of its sympatry with *L. (P.) candens* H.-S. 1844 (Lepidoptera, Lycaenidae). *Glasn. Zemaljsk. Muz. Bosne i Hercegovine, Prir. nauke* 27, 119–131.
77. LORKOVIĆ, Z., 1989a: Der Karyotypus und die reproduktiven Beziehungen des Taxon *balcana* Lorković 1968 zu *Pieris napi* Linnaeus 1758 und *P. pseudorapae* Verity 1908 (Lepidoptera, Pieridae). *Glasn. Zemaljsk. Muz. Bosne i Hercegovine, Prir. nauke*, NS 28, 155–175.
78. LORKOVIĆ, Z., 1989b: Experimental evidence for the specific distinction between *Colias hyale* L. and *C. alfariensis* Ribbe (Pieridae). *Summ. of the 6th European Congress of lepidopterology, Sanremo 5.–9. 4. 1988.* *Nota lepid.* 12, suppl. 1, 34–35.
79. LORKOVIĆ, Z., 1990: The butterfly chromosomes and their application in systematics and phylogeny. In: O. KUDRNA (Ed.) *Butterflies of Europe Vol. 2, Introduction to Lepidopterology.* AULA-Verlag, Wiesbaden, pp. 332–396.
80. LORKOVIĆ, Z., SILADJEV, S. & R. KRANJČEV, 1992: Die Einwanderung von *Colias erate* (Esper, 1804) nach Mitteleuropa in den Jahren 1989 und 1990, ihre Überwinterung, Polymorphismus und Genetik. *Atalanta* 23(1–2), 89–102.
81. LORKOVIĆ, Z., 1993a: *Leptidea reali* Reissinger 1989 (=lorkovici Real 1988), a new European species (Lepid., Pieridae). *Nat. Croat.* 2(1), 1–26.
82. LORKOVIĆ, Z., 1993b: Ecological association of *Leptidea morsei major* Grund 1905 (Lepidoptera, Pieridae) with the oak forest *Lathyreto-quercetum petraeae* Hr-t 1957 in Croatia. *Period. biol.* 95(4), 455–457.
83. LORKOVIĆ, Z., 1997a: High vitality versus low fertility in artificial interspecific F₁ hybrids of butterflies (a preliminary report). *Entomol. Croat.* 2(1–2), 5–10.
84. LORKOVIĆ, Z., 1997b: Occurrence of *Pieris ergane* Geyer (Lepidoptera, Pieridae) on mount Sljeme near Zagreb, Croatia. *Entomol. Croat.* 2(1–2), 27–30.
85. KUČINIĆ, M. & LORKOVIĆ, Z., 1998: The distribution of the genus *Chresotis* 1840 (Insecta, Lepidoptera, Noctuidae) in Croatia. *Nat. Croat.* 7(2), 113–120.
86. LORKOVIĆ, Z., 1998: Über die gestielte Ader M1 bei Pieriden (Lepidoptera, Pieridae). *Stapfia* 55, 281–284.