

บรรณานุกรม

- กรมประมง กระทรวงเกษตรและสหกรณ์ (2540) ภาพปลาและสัตว์น้ำของไทย. องค์การค้ำของ
คุรุสภา กรุงเทพมหานคร.
- ประจํา หล้าอุบล (2525) บทปฏิบัติการวิชากุ้ง (*Natantia*) วิทยาศาสตร์ทางทะเล 432. ภาควิชา
วิทยาศาสตร์ทางทะเล คณะประมง มหาวิทยาลัยเกษตรศาสตร์ (อัคราณา).
- ภรณ์ อุทโยภาส (2543) การใช้ความไม่สมดุลยีนๆในสัตว์น้ำเป็นตัวบ่งชี้ความเครียดทาง
สิ่งแวดล้อมในนิเวศน้ำจืด. ภาควิชาเทคโนโลยีชีวภาพ คณะวิทยาศาสตร์และเทคโนโลยี
มหาวิทยาลัยธรรมศาสตร์ รังสิต ปทุมธานี (อัคราณา).
- ดร. วิทย์ เทียงบูรณธรรม (2539) พจนานุกรมสัตว์และพืชในประเทศไทย. บริษัทรวมสาส์น (1977)
จำกัด กรุงเทพมหานคร.
- คุณหญิงสุชาดา ศรีเพ็ญ (2542) พรรณไม้ในในประเทศไทย. อมรินทร์พรินติ้งแอนพับลิชชิง จำกัด
(มหาชน) กรุงเทพมหานคร.
- สุรศักดิ์ วงศ์กิตติเวชกุล (2540) สารานุกรมปลาไทย. บริษัทซัพพลาย จำกัด กรุงเทพมหานคร
- อาจ แจ่มเมฆ (2526) ปฏิบัติการสัตว์วิทยา. ไทยวัฒนาพานิช กรุงเทพมหานคร
- Alibert, P. Renaud, S., Dod, B., Bonhomme, F. and Auffray, J-C. (1994) Fluctuating asymmetry
in the *Mus musculus* hybrid zone: a heterotic effect in disrupted co-adapted genomes.
Proceeding of the Royal Society of London, 258: 53-59.
- Bader, R. S. (1965) Fluctuating asymmetry in the dentition of the house mouse. *Growth*,
29: 291-300.
- Baker, C. M. A. and Manwell, C. (1977) Heterozygosity of the sheep: polymorphism of 'malic
enzyme', isocitrate dehydrogenase (Nadp), catalase and esterase. *Australian Journal of
Biological Science*, 30: 127-140.
- Barden, H. S. (1983) Growth and development of selected hard tissues in Down syndrome.
A review. *Human Biology*, 55: 539-576.
- Beacham, T. D. (1990) A genetic analysis of meristic and morphometric variation in chum salmon
(*Oncorhynchus keta*) at three different temperatures. *Canadian Journal of Zoology*,
68:225-229.
- Beardmore, J. A. (1960) Developmental stability in constant and fluctuating temperatures.
Heredity, 14: 411-422.

- Beardmore, J. A. and Shami, S. A. (1979) Heterozygosity and the optimum phenotype under stabilising selection. *Aquilo. Ser. Zool.*, **20**: 100-110.
- Bengtsson, B. E., Bengtsson, A. and Himberg, M. (1985) Fish deformities and pollution in some Swedish waters. *Ambio*, **14**(1): 32-35.
- Bottini, E., Gloria-Bottini, F., Lucarelli, P., Polzonetti, Al Santoro, F. and Ververi, A. (1979) Genetic polymorphisms and intrauterine development: Evidence of decreased heterozygosity in light for dates human newborn babies. *Experientia*, **35**: 1565-1567.
- Brücker, D. (1976) The influence of genetic variability on wing asymmetry in honeybees (*Apis mellifera*). *Evolution*, **30**: 100-108.
- Campbell, N. A. (1996) *Biology*, 4th ed. The Benjamin/Cummings. New York.
- Carbonell, R. and Telleriá, J. L. (1998) Increased asymmetry of tarsus-length in three populations of Blackcaps *Sylvia articapilla* as related to proximity to range boundary. *IBIS*, **140**(2): 331-333.
- Clarke, G. M. (1992) Fluctuating asymmetry: a technique for measuring developmental stress of genetic and environmental origin. *Acta Zoologica Fennica*, **191**: 31-35.
- Clarke, G. M. (1993) Fluctuating asymmetry of invertebrate populations as a biological indicator of environmental quality. *Environmental Pollution*, **82**: 207-211.
- Clarke, G. M. (1994) Developmental stability analysis: an early-warning system for biological monitoring of water quality. *Australian Biologist*, **7**(2): 94-102.
- Clarke, G. M., Brand, G. W. and Whitten, M. J. (1986) Fluctuating asymmetry: a technique for measuring developmental stress caused by inbreeding. *Australian Journal of Biological Sciences*, **39**: 145-53.
- Clarke, G. M. and McKenzie, J. A. (1987) Developmental stability of insecticide resistant phenotypes in blowfly: a result of canalizing natural selection. *Nature*, **325**: 345-346.
- Clarke, G. M., Oldroyd, B. P. and Hunt, P. (1992) The genetic basis of developmental stability in *Apis mellifera*: heterozygosity versus genic balance. *Evolution*, **46**(3): 753-762.
- Cothran, E. G., Chesser, R., Smith, M. H. and Johns, P. E. (1983) Influences of genetic variability and maternal factors on fetal growth in white-tailed deer. *Evolution*, **37**: 282-291.
- Cowart, M. N. and Graham, J. H. (1999) Within-and-among individual variation in fluctuating asymmetry of leaves in the Fig (*Ficus carica* L.). *International Journal of Plant Science*, **160**(10): 116-121.

- Danzmann, R. G., Ferguson, M. M. and Allendorf, F. W. (1987) Heterozygosity and oxygen-consumption rate as predictors of growth and developmental rate in rainbow trout. *Physiological Zoology*, **60**: 211-220.
- Danzmann, R. G., Ferguson, M. M. and Allendorf, F. W. (1998) Heterozygosity and components of fitness in a strain of rainbow trout. *Biological Journal of the Linnean Society*, **39**: 265-304.
- Diehl, W. J. (1989) Genetics of carbohydrate metabolism and growth in *Eisemia foetida* (Oligochatea: Lumbricidae). *Heredity*, **61**: 379-387.
- Diehl, W. J., Gaffney, P. M. and Koehn, R. K. (1986) Physiological and genetic aspects of growth in the mussel *Mytilus edulis*. I. Oxygen consumption, growth, and weight loss. *Physiological Zoology*, **59**: 201-211.
- Dobzhansky, T. (1950) Genetics of natural populations. XIX. Origin of heterosis through natural selection in populations of *Drosophila pseudoobscura*. *Genetics*, **35**: 288-302.
- Dobzhansky, T. and Wallace, B. (1953) The genetics of homeostasis in *Drosophila*. *Proceeding of the National Academy of Science*, **39**: 162-171.
- Emlen, J. M., Freeman, D. C. and Graham, J. H. (1993) Nonlinear growth dynamics and the origin of fluctuating asymmetry. *Genetica*, **89**: 77-96.
- Felley, J. (1980) Analysis of morphology and asymmetry in bluegill sunfish (*Lepomis macrochirus*) in the southeastern United States. *Copeia*: 18-29.
- Fraser, F. C. (1994) Developmental instability and fluctuating asymmetry in man. In Markow, T. A. (Ed.) *Developmental instability and evolutionary implications*. Kluwer Academic Publishers, The Netherlands.
- Freeman, D. C., Graham, J. H. and Emlen, J. M. (1994) Developmental stability in plants: symmetries, stress and epigenesis. In Markow, T. A. (Ed.) *Developmental instability and evolutionary implications*. Kluwer Academic Publishers, The Netherlands.
- Freeman, D. C., Turner, W. A., McArthur, E. D. and Graham, J. H. (1991) Characterization of a narrow hybrid zone between two subspecies of big sagebrush (*Artemisia tridentata*: Asteraceae). *American Journal of Botany*, **78**: 805-815.
- Garn, S. M., Lewis, A. B. and Kerewsky, R. S. (1967) Buccolingual size asymmetry and its developmental meaning. *Angle Orthodontist*, **37**: 186-193.

- Garton, D. W. (1984) Relationship between multiple locus heterozygosity and physiological energetics of growth in the estuarine gastropod *Thais haemastoma*. *Physiological Zoology*, 57: 530-543.
- Garton, D. W., Koehn, R. K. and Scott, T. M. (1984) Multiple-locus heterozygosity and the physiological energetics of growth in the coot clam, *Mulinia lateralis*, from a natural population. *Genetics*: 445-455.
- Gill, H. S. (1993) Description of a new genus of goby from southern Australia, including osteological comparisons with related genera. *Record Western Australian Museum*, 16(2): 175-210.
- Graham, J. H. (1992) Genomic coadaptation and developmental stability in hybrid zones. *Acta Zoologica Fennica*, 191: 121-132.
- Graham, J. H., Emlen, J. M. and Freeman, D. C. (1993) Developmental stability and its applications in ecotoxicology. *Ecotoxicology*, 2: 175-184.
- Graham, J.H., Emlen, J. M., Freeman, D. C., Leamy, L. J. and Kieser, J. A. (1998) Directional asymmetry and the measurement of developmental instability. *Biological Journal of the Linnean Society*, 64: 1-16.
- Graham, J. H. and Felley, J. D. (1985) Genomic coadaptation and developmental stability within introgressed populations of *Enneacanthus gloriosus* and *E. obesus* (Pisces, Centrarchidae). *Evolution*, 39: 104-14.
- Graham, J. H., Freeman, D. C. and Emlen, J. M. (1994) Antisymmetry, directional asymmetry, and dynamic morphogenesis. In Markow, T. A. (Ed.) *Developmental instability and evolutionary implications*. Kluwer Academic Publishers, The Netherlands.
- Hallgrímsson, B. (1998) Fluctuating asymmetry in the mammalian skeleton: evolutionary and developmental implications. *Evolutionary Biology*, 30: 187-251.
- Hicks, M. V. (1981) Bilateral asymmetry in yellow perch (*Perca flavescens*) as an indicator of environmental contamination. M.S. Thesis, Ohio State University, USA.
- Jackson, J. F. (1973) A search for the population asymmetry parameter. *Systematic Zoology*, 22: 166-70.
- Jago, C. H. and Haines, T. A. (1985) Fluctuating asymmetry in fishes inhabiting acidified and unacidified lakes. *Canadian Journal of Zoology*, 63: 130-138.
- Jinda Thiemmedh (1968) Fishes of Thailand: Their English, scientific and Thai names. *Kasetsart University Fishery Research Bulletin No 4*.

- Johnson, G. B. (1975) *Enzyme polymorphism and adaptation*. Stadler Symposium, volume 7, University of Missouri, Columbia.
- Jokela, P. and Portin, P. (1991) Effect of extra Y chromosome on number and fluctuating asymmetry of sternopleural bristles in *Drosophila melanogaster*. *Hereditas*, **114**: 177-187.
- Joswiak, G. R., Smith, C. R. and Moore, W. S. (1985) Allozyme markers in the lizard hybrids *Sceloporus undulatus* x *S. woodi*. *Isozyme Bulletin*, **18**: 81.
- Kat, P. W. (1982) The relationship between heterozygosity for enzyme loci and developmental homeostasis in peripheral populations of aquatic bivalves (Unionidae). *The American Naturalist*, **119**: 824-32.
- Khan, S. U. (1980) *Pesticides in the soil environment*. Elsevier, New York.
- King, D. P. E. (1985) Enzyme heterozygosity associated with anatomical character variance and growth in the herring (*Clupea harengus* L.). *Heredity*, **54**: 289-296.
- Koehn, R. K. (1970) Functional and evolutionary dynamics of polymorphic esterases in catostomid fishes. *Transactions of the American Fisheries Society*, **99**: 219-228.
- Koehn, R. K., Diehl, W. J. and Scott, T. M. (1988) The differential contribution by individual enzymes of glycolysis and protein catabolism to the relationship between heterozygosity and growth rate in the coot clam, *Mulinia lateralis*. *Genetics*, **118**: 121-130.
- Koehn, R. K. and Gaffney, P. M. (1984) Genetic heterozygosity and growth rate in *Mytilus edulis*. *Marine Biology*, **82**: 1-7.
- Koehn, R. K. and Shumway, S. E. (1982) A genetic/physiological explanation for differential growth rate among individuals of the American oyster, *Crassostrea virginica* (Gmelin). *Marine Biology letters*, **3**: 35-42.
- Lamb, T., Novak, J. M. and Mahoney, D. L. (1990) Morphological asymmetry and interspecific hybridization: a case study using hylid frogs. *Journal of Evolutionary Biology*, **3**: 295-309.
- Leamy, L. (1984) Morphometric studies in inbred and hybrid house mice. V. Directional and fluctuating asymmetry. *The American Naturalist*, **123**(5): 579-593.
- Leamy, L. (1992) Morphometric studies in inbred and hybrid house mice. VII. Heterosis in fluctuating asymmetry at different ages. *Acta Zoologica Fennica*, **191**: 111-119.
- Leary, R. F., Allendorf, F. W. and Knudsen, K. L. (1983) Developmental stability and enzyme heterozygosity in rainbow trout. *Nature*, **301**: 71-72.

- Leary, R. F., Allendorf, F. W. and Knudsen, K. L. (1984) Superior developmental stability of heterozygotes at enzyme loci in salmonid fishes. *The American Naturalist*, **124**: 540-541.
- Leary, R. F., Allendorf, F. W. and Knudsen, K. L. (1985a) Developmental instability as an indicator of reduced genetic variation in hatchery trout. *Transactions of the American Fisheries Society*, **114**: 230-235.
- Leary, R. F., Allendorf, F. W. and Knudsen, K. L. and Thorgaard, G. H. (1985b) Heterozygosity and developmental stability in gynogenetic diploid and triploid rainbow trout. *Heredity*, **54**: 219-225.
- Leary, R. F., Allendorf, F. W. and Knudsen, K. L. (1985c) Developmental instability and high meristic counts in interspecific hybrids of salmonid fishes. *Evolution*, **39**(6): 1318-1326.
- Leary, R. F., Allendorf, F. W. and Knudsen, K. L. and Thorgaard, G. H. (1985d) Heterozygosity and developmental stability in gynogenetic diploid and triploid rainbow trout. *Heredity*, **54**: 219-225.
- Leary, R. F. and Allendorf, F. W. (1989) Fluctuating asymmetry as an indicator of stress: implications for conservation biology. *TREE*, **4**(7): 214-217.
- Leary, R. F., Allendorf, F. W. and Knudsen, K. L. (1991) Effects of rearing density on meristics and developmental stability of rainbow trout. *Copeia*: 44-49.
- Leary, R. F., Allendorf, F. W. and Knudsen, K. L. (1992) Genetic, environmental, and developmental causes of meristic variation in rainbow trout. *Acta Zoologica Fennica*, **191**: 79-95.
- Leary, R. F., Allendorf, F. W. and Knudsen, K. L. (1994) Null alleles at two lactate dehydrogenase loci in rainbow trout are associated with decreased developmental stability. In Markow, T. A. (Ed.) *Developmental instability and evolutionary implications*. Kluwer Academic Publishers, The Netherlands.
- Lerner, I. M. (1954) *Genetic homeostasis*. Wiley, New York.
- Lindsey, C. C. (1988) Factors controlling meristic variation. In Hoar, W. S. and Randall, D. J. (Eds). *Fish physiology. Volume XI. The physiology of developing fish part B: viviparity and posthatching juveniles*. Academic Press, New York. pp. 197-274.
- Livshits, G., Otremski, I. and Kobliansky, E. (1987) Longitudinal growth of infants in families of "mixed" and "non-mixed" ethnic origin in Israel. *Human Biology*, **59**: 933-949.

- Livshits, G. and Smouse, P. E. (1994) Relationship between fluctuating asymmetry, morphological modality and heterozygosity in an elderly Israeli population. In Markow, T. A. (Ed.) *Developmental instability and evolutionary implications*. Kluwer Academic Publishers, The Netherlands.
- Leung, B. and Forbes, M. R. (1997) Modelling fluctuating asymmetry in relation to stress and fitness. *OIKOS*, **78**(2): 397-405
- Makaveev, T., Venev, I. and Baulov, M. (1978) Investigations on activity level and polymorphisms of some blood enzyme in farm animals with different growth energy. II. Correlations between homo- and heterozygosity of some protein and enzyme phenotypes and fattening ability and slaughter indices in various breeds of fattened pigs. *Genetic Selection Evolution*, **10**: 229-236.
- Manley, S. A. M. and Ledig, F. T. (1979) Photosynthesis in black and red spruce and their hybrid derivations: ecological isolation and hybrid adaptive inferiority. *Canadian Journal of Botany*, **57**: 307-314.
- Mather, K. (1953) Genetical control of stability in development. *Heredity*, **7**: 297-336.
- McKenzie, J. A. (1987) Insecticide resistance in the Australian sheep blowfly—message for pesticide usage. *Chemical Industry*, **8**: 266-269.
- McKenzie, J. A. and Clarke, G. M. (1988) Diazonin resistance, fluctuating asymmetry and fitness in the Australian sheep blowfly, *Lucilia cuprina*. *Genetics*, **120**: 213-220.
- Midgley, G. F., Wand, S. J. E. and Musil, C. F. (1998) Repeated exposure to enhanced UV-B radiation in successive generations increases developmental instability (leaf fluctuating asymmetry) in a desert annual. *Plant, Cell and Environment*, **21**: 437-442.
- Mitton, J. B. (1994) Enzyme heterozygosity, metabolism, and developmental stability. In Markow, T. A. (Ed.) *Developmental instability and evolutionary implications*. Kluwer Academic Publishers, The Netherlands.
- Mitton, J. B., Carey, C. and Kocher, T. D. (1986) The relation of enzyme heterozygosity to standard and active oxygen consumption and body size of tiger salamanders, *Ambystoma tigrinum*. *Physiological Zoology*, **59**: 574-582.
- Mitton, J. B. and Pierce, B. A. (1980) The distribution of individual heterozygosity in natural populations. *Genetics*, **95**: 1043-1054.
- Møller, A. P. (1998) Developmental instability of plants and radiation from Chernobyl. *OIKOS*, **81**: 444-448.

- Nora, J. J. and Nora, A. H. (1978) *Genetics and counseling in cardiovascular diseases*. Charles C. Thomas Press, Illinois.
- Palmer, A. R. (1994) Fluctuating asymmetry analyses: a primer. In Markow, T. A. (Ed.) *Developmental instability and evolutionary implications*. Kluwer Academic Publishers, The Natherland.
- Palmer, A. R. and Strobeck, C. (1986) Fluctuating asymmetry: measurement, analysis, patterns. *Annual Review of Ecology Systematics*, **17**: 391-421.
- Palmer, A. R. and Strobeck, C. (1992) Fluctuating asymmetry as a measure of developmental stability: Implications of non-normal distributions and power of statistical tests. *Acta Zoologica Fennica*, **191**: 57-72.
- Palmer, A. R., Strobeck, C. and Chippindale, A. K. (1994) Bilateral variation and the evolutionary origin of macroscopic asymmetries. In Markow, T. A. (Ed.) *Developmental instability and evolutionary implications*. Kluwer Academic Publishers, The Natherland.
- Pankakoski, E., Koivisto, I. and Hyvärinen, H. (1992) Reduced developmental stability as an indicator of heavy metal pollution in the common shrew *Sorex araneus*. *Acta Zoologica Fennica*, **191**: 57-72.
- Patterson, B. S. and Patton, J. L. (1990) Fluctuating asymmetry and allozymic heterozygosity among natural populations of pocket gophers (*Thomomys bottae*). *Biological Journal of Linnean Society*, **41**: 21-36.
- Pierce, B. A. and Mitton, J. B. (1982) Allozyme heterozygosity and growth in the tiger salamander, *Ambystoma tigrinum*. *Journal of Heredity*, **73**: 250-253.
- Poranee Utayopas (1997) *Fluctuating asymmetry of fish populations as bioindicator of environmental quality in aquatic ecosystems*. Ph. D. Thesis. Murdoch University, Western Australia
- Pothhoff, T. (1984) Clearing and staining techniques. In Moser, H. G., Richards, W. J., Cohen, D. M., Fahay, M. P., Kendall, A. W. Jr and Richardson, S. L. (Eds.). *Ontogeny and systematics of fishes*. American Society of Ichthyologists and Herpetologists Special Publication No 1. pp. 35-37.
- Quattro, J. M. and Vrijenhoek, R. C. (1989) Fitness differences among remnant populations of the endangered sonoran topminnow. *Science*, **245** : 976-978.
- Rice, W. R. (1989) Analysing tables of statistical tests. *Evolution*, **43**: 223-225.

- Ross, K. G. and Robertson, J. L. (1990) Developmental stability, heterozygosity, and fitness in two introduced fire ants (*Solenopsis invicta* and *S. richteri*) and their hybrid. *Heredity*, 64: 93-103.
- Sakai, K-I. And Shimamoto, Y. (1965) Developmental instability in leaves and flowers of *Nicotiana tabacum*. *Genetics*, 51: 801-812.
- Sarre, S. and Dearn, J. M. (1991) Morphological variation and fluctuating asymmetry among insular populations of sleepy lizard, *Trachydosaurus rugosus* Gray (Squamata: Scincidae). *Australian Journal of Zoology*, 39: 91-104.
- Shapiro, B. L. (1983) Down Syndrome-A disruption of homeostasis. *American Journal of Medical Genetic*, 14: 241-269.
- Shapiro, B. L. (1992) Development of human autosomal aneuploid phenotypes (with an emphasis on Down syndrome). *Acta Zoolologica Fennica*, 191: 97-105.
- Sigh, S. M. and Zouros, E. (1978) Genetic variation associated with growth rate in the American oyster (*Crassostrea virginica*). *Evolution*, 32: 342-353.
- Siikamäki, P. and Lammi, A. (1998) Fluctuating asymmetry in central and marginal populations of *Lychnis viscaria* in relation to genetic and environmental factors. *Evolution*, 52(5): 1285-1292.
- Shapiro, B. L. (1992) Development of human autosomal aneuploid phenotypes (with an emphasis on Down syndrome). *Acta Zoolologica Fennica*, 191: 97-105.
- Shavelston, R. J. (1988) *Statistical reasoning for the behaviour sciences*, 2nd ed. Allyn and Bacon, Boston.
- Sokal, R. R. and Rohlf, J. F. (1981) *Biometry*. W. H. Freeman & Co, San Francisco.
- Sokal, R. R. and Rohlf, J. F. (1995) *Biometry* 3rd ed. W. H. Freeman & Co, San Francisco.
- Soulé, M. E. (1979) Heterozygosity and developmental stability: another look. *Evolution*, 33: 396-401.
- Soulé, M. and Baker, B. (1968) Phenetics of natural populations. IV. The population asymmetry parameter in the butterfly *Coenonympha tullia*. *Heredity*, 23: 611-614.
- Swaddle, J. P., Witter, M. S. and Cuthill, I. C. (1994) The analysis of fluctuating asymmetry. *Animal Behaviour*, 48: 986-989.
- Tanaka, S. (1983) Variations in nine-spine sticklebacks *Pungitius pungitius* and *P. sinensis* in Honshu Japan. *Journal of Ichthyology*, 29: 203-212.

- Townsend, G. C. (1987) A correlative analysis of dental crown dimensions in individuals with Down syndrome. *Human Biology*, **59**: 537-548.
- Valentine, D. W. and Soulé, M. (1973) Effects of *p, p'*-DDT on developmental stability of pectoral fin rays in the grunion *Leuresthes tenuis*. *Fishery Bulletin*, **71(4)**: 921-26.
- Valentine, D. W., Soulé, M. E. and Samollow, P. (1973) Asymmetry analysis in fishes: a possible statistical indicator of environmental stress. *Fishery Bulletin*, **71(4)**: 357-70.
- Van Valen, L. (1962) A study of fluctuating asymmetry. *Evolution*, **16**: 125-42.
- Vrijenhoek, R. C. and Lerman, S. (1982) Heterozygosity and developmental stability under sexual and asexual breeding systems. *Evolution*, **36**: 768-76.
- Waddington, C. H. (1957) *The strategy of the genes*. Macmillan, New York.
- Wooten, M. C. and Smith, M. H. (1986) Fluctuating asymmetry and genetic variability in a natural population of *Mus musculus*. *Journal of Mammalogy*, **67**: 725-732.
- Yang, A., Dunnington, E. A. and Siegel, P. B. (1997) Developmental stability in stocks of White Leghorn chickens. *Poultry Science*, **76**: 1632-1636.
- Zakharov, V. M. (1981) Fluctuating asymmetry as an index of developmental homeostasis. *Genetika*, **13**: 241-256.
- Zakharov, V. M. (1982) Analysis of developmental stability as a method of determination of the optimal conditions of development (in Russian). *Dokl. Akad. Nauk SSSR*, **267**: 1016-1018.
- Zakharov, V. M. (1987) Animal asymmetry: population-phenogenetic approach (in Russian). *Nauka*, Moscow.
- Zakharov, V. M. (1989) Future prospects for population phenogenetics. *Sov. Sci. Rev. F. Physiol. Gen. Biol.*, **4**: 1-79.
- Zakharov, V. M. (1992) Population phenogenetics: analysis of developmental stability in natural populations. *Acta Zoolologica Fennica*, **191**: 7-30.
- Zakharov, V. M. and Bakulina, E. D. (1984) Disturbance of developmental stability at crossing different strains of *Drosophila virilis* (variation in the number of ovarioles taken as an example) *Genetika*, **20**: 1390-1391 (in Russian).
- Zakharov, V. M. and Yablokov, A. V. (1990) Skull asymmetry in the Baltic grey seal: effects of environmental pollution. *Ambio*, **19(5)**: 266-269.
- Zakharov, V. M. and Ziuganov, V. V. (1980) On the estimate of asymmetry of bilateral characters as population characteristic (in Russian). *Ekologia*, **1**: 10-16.

- Zakharov, V. M., Pankokowski, E., Sheftel, B. I., Peltonen, A. and Hanski, I. (1991)
Developmental stability and population dynamics in the common shrew *Sorex araneus*.
American Naturalist, 138: 797-810.
- Zink, R., Smith, M. and Patton, J. L. (1985) Association between heterozygosity and
morphological variance. *Journal of Heredity*, 76: 415-420.
- Ziuganov, V. V. (1984) An attempt to prognosticate genetic effects following possible contacts
between stickleback *Pungitius pungitius* and *P. platygaster* as a result of disturbance of
their natural ranges (In Russian). *Genetika*, 20: 1691-1700.
- Zouros, E. and Foltz, D. W. (1987) The use of allelic isozyme variation for the study of heterosis.
In Rattazzi, M. C., Scandalios, J. G. and Whitt, G. S. (Eds.) *Isozymes: current Topics in
Biological and Medical research, Vol. 13*. Alan R. Liss Inc., New York.

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