

DMITRY L. MUSOLIN: *Curriculum Vitae*

Associate Professor of Department of Forest Protection and Game Management &
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Saint Petersburg State Forest Technical University
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Senior Research Scientist of Laboratory of Evolutionary and Physiological Ecology of Insects, Department of
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RESEARCH INTERESTS:

Primary: Insect eco-physiology: Heteroptera diapause syndrome; Environmental control of seasonal development in Heteroptera; Life-history responses of insects to climate change.

Secondary: Forest entomology; Insect photoperiodism.

EDUCATION:

M.Sc. in Forestry (Forest Entomology) (1993). Saint Petersburg State Forest Technical Academy, Russia. Honors degree. M.Sc. thesis: *Influence of Industrial Pollution on Birch Leaf-mining Sawflies (Insecta, Hymenoptera, Tenthredinidae)*. Advisor: Prof. A. V. Selikhovkin.

Ph.D. in Entomology (1997). Saint Petersburg State University, Russia. Dissertation: *Seasonal Cycles of Heteroptera: Diversity and Environmental Control*. Advisor: Prof. A. H. Saulich.

M.Sc. in Environmental Sciences and Policy (1998). Central European University, Budapest, Hungary (accredited by the University of Manchester, U.K.). Thesis: *Environmental Control of Insect Seasonality: Diversity of Patterns in Nature and Practical Applications*. Advisors: Prof. R. Mnatsakanian and Prof. T. R. E. Southwood.

PROFESSIONAL EXPERIENCE:

2011–now: Director, Department of Advanced Training and Graduate Studies, Saint Petersburg State Forest Technical University, Saint Petersburg, Russia.

2010–now: Assistant Professor, Department of Zoology and Game Science, Saint Petersburg State Forest Technical University, Saint Petersburg, Russia.

2009–now: Senior Research Scientist, Department and Laboratory of Entomology, Faculty of Biology and Soil Sciences, Saint Petersburg State University, Saint Petersburg, Russia.

2005–2009: Postdoctoral Research Fellow, *21st Century Center of Excellence* Program at Kyoto University (Laboratory of Insect Ecology, Graduate School of Agriculture), Kyoto, Japan.

2001–2005: Postdoctoral Research Fellow / Research Associate, National Agricultural Research Center for Hokkaido Region, Sapporo, Japan.

1998–2000: Postdoctoral Research Fellow, Graduate School of Science, Osaka City University, Osaka, Japan.

1994–1997: Researcher, Biological Institute of Saint Petersburg State University, Saint Petersburg, Russia.

1993–1995: Assistant Lecturer, Course of Forest Entomology, Saint Petersburg State Forest Technical Academy, Saint Petersburg, Russia.

1989–1993: Researcher / Junior Researcher in several projects, Dept. of Zoology, Saint Petersburg State Forest Technical Academy, Saint Petersburg, Russia.

TEACHING EXPERIENCE:

1993–1995, 2011–now: *Forest Entomology* Course (*General Entomology* and *Forest Insect Ecology* Units) at Saint Petersburg State Forest Technical Academy, Saint Petersburg, Russia.

2010–now: *Forest Invertebrates* Course at Saint Petersburg State Forest Technical Academy, Saint Petersburg, Russia.

1995–1997: Joint supervision of 2 M.Sc. students at Saint Petersburg State University, Saint Petersburg, Russia (a project of Mr. A. Maysov resulted in a publication in *Applied Entomology and Zoology* [1999]).

2005–2009: Joint supervision of 3 M.Sc. students at Kyoto University, Kyoto, Japan (a project of Mr. D. Tougou resulted in papers published in *Entomologia Experimentalis et Applicata* [2009] and *Global Change Biology* [2010]; the project of Mr. K. Takeda resulted in a MS submitted to *Physiological Entomology*).

AWARDS, SCHOLARSHIPS, AND GRANTS:

1992: Prof. G. F. Morozoff Scholarship. Saint Petersburg State Forest Technical Academy, Russia.
 1994: Scholarship for Research in Biodiversity. Soros Foundation and Academy of Natural Sciences, Russia.
 1994: Year Scholarship, Center For International Mobility, Finland.
 1996 & 1997: Year Scholarships, International Soros Science Educational Program.
 1996: Year Fellowship, Central European University, Budapest, Hungary.
 1997: NANSEN Grant Nansen Environmental and Remote Sensing Center and University of Bergen, Norway.
 1998: Two-year Postdoctoral Fellowship for Foreign Researchers, Japan Society for the Promotion of Science.
 2001: Two-year Postdoctoral Fellowship for Foreign Researchers, Science and Technology Agency (Japan).
 2003: Long-Term Invitation Fellowship for Research in Japan, Japan Society for the Promotion of Science.
 2004: Funded Delegate Program Grant, XXII International Congress of Entomology (Brisbane, Australia).
 2009: Invited speaker Travel Grant, III International Symposium on Biological Control of Arthropods (New Zealand).
 2011: Participation grant for ThermAdapt Science Meeting *Evolutionary and Plastic Responses of Animal Growth to Different Temperatures: Adaptations and Constraints*. Tartu, Estonia.

PROFESSIONAL AFFILIATIONS:

1990–now: Russian Entomological Society.
 1999–2001: Japanese Society of Applied Entomology and Zoology.
 1999–2001: The Entomological Society of Japan.

PEER REVIEWING:

- **journals/periodicals:** *Agricultural and Forest Entomology*, *Annals of the Entomological Society of America*, *Applied Entomology and Zoology*, *BioControl*, *Boletín de Biodiversidad de Chile*, *Bulletin of Entomological Research*, *Bulletin of Insectology*, *Ecological Entomology*, *Entomological Science*, *Environmental Entomology*, *Global Change Biology*, *Insect Science*, *Journal of Applied Ecology*, *Journal of Applied Entomology*, *Journal of Insect Physiology*, *Neotropical Entomology*, *Physiological Entomology*, *Phytoparasitica*, *Psyche*, *Transactions of the Saint Petersburg Forest Technical Academy*;
- **grant agencies:** *Grant Agency of the Czech Republic (Czech Science Foundation)*, *The Villum Kann Rasmussen Foundation (Denmark)*.

MAIN PUBLICATIONS:

Books:

Saulich A.H. & Musolin D.L., 2007. *Seasonal Development of Aquatic and Semiaquatic True Bugs (Heteroptera)*. St. Petersburg (Russia): St. Petersburg University Press. 205 pp. (in Russian, with an extended 6-page English Summary). [ISBN 978-5-288-04332-1; www.unipress.ru/2007/sau.html]

Book chapters:

Fujisaki K., Shimizu K., Tougou D. & Musolin D., 2009. The impact of global warming on insects: Case studies of the cotton bollworm *Helicoverpa armigera* and the southern green stink bug *Nezara viridula*. In: Fujisaki K., Nishida R. & Sakoma M. (eds.). *Entomological Science and Its Perspective*. Kyoto (Japan): Kyoto University Press. Pp. 13–40 (in Japanese). [ISBN 978-4-86798-775-7]

Edited conference proceedings books:

Fundamental Issues of Entomology in the XXI Century. (Ed. by V.E. Kipyatkov & D.L. Musolin). Proceedings of the International Conference. St. Petersburg (Russia): St. Petersburg University Press. 198 pp. (in Russian).

Transactions of the Saint Petersburg Forest Technical Academy. Vol. 196. (The volume ed. by D.L. Musolin). Proceedings of the IV Memorial O. A. Kataev Scientific Readings Saint Petersburg, Russia. 340 c. [pdf: 5,9 Mb]

Peer-reviewed international journals:

Tada A., Kikuchi Y., Hosokawa T., Musolin D.L., Fujisaki K., Fukatsu T., 2011. Obligate association with gut bacterial symbiont in Japanese populations of the southern green stinkbug *Nezara viridula* (Heteroptera):

- Pentatomidae). *Applied Entomology and Zoology*. Vol. 46 (4): 483–488.
<http://www.springerlink.com/content/m217514767011v2t/>]
- Musolin D.L., Tougou D. & Fujisaki K., 2011. Photoperiodic response in the subtropical and warm-temperate zone populations of the southern green stink bug *Nezara viridula*: why does it not fit the common latitudinal trend? *Physiological Entomology*. Vol. 36 (4): 379–384.
<http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3032.2011.00797.x/abstract>]
- Takeda K., Musolin D.L. & Fujisaki K., 2010. Dissecting insect responses to climate warming: overwintering and post-diapause performance in the southern green stink bug, *Nezara viridula*, under simulated climate-change conditions. *Physiological Entomology* Vol. 35 (4): 343–353. [DOI: 10.1111/j.1365-3032.2010.00748.x]
<http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3032.2010.00748.x/abstract>>
- Musolin D.L., Tougou D. & Fujisaki K., 2010. Too hot to handle? Phenological and life-history responses to simulated climate change of the southern green stink bug *Nezara viridula* (Heteroptera: Pentatomidae). *Global Change Biology*. Vol. 16 (1): 73–87. [DOI: 10.1111/j.1365-2486.2009.01914.x]
<http://www3.interscience.wiley.com/journal/122369335/abstract>>
- [highlighted in *Journal of Experimental Biology*: Cobb M. Hot bugs show effects of climate change. *Journal of Experimental Biology*. 2010. Vol. 213 (11): V. [DOI: 10.1242/jeb.036541]
<http://jeb.biologists.org/cgi/content/full/213/11/v?etoc>]
- Tougou D., Musolin D.L. & Fujisaki K., 2009. Some like it hot! Rapid climate change promotes changes in distribution ranges of *Nezara viridula* and *Nezara antennata* in Japan. *Entomologia Experimentalis et Applicata*. Vol. 130 (3): 249–258. [DOI: 10.1111/j.1570-7458.2008.00818.x]
<http://www3.interscience.wiley.com/journal/122189322/abstract>>
- Musolin D.L. & Ito K., 2008. Photoperiodic and temperature control of nymphal development and induction of reproductive diapause in two predatory *Orius* bugs: interspecific and geographic differences. *Physiological Entomology*. Vol. 33 (4): 291–301. [DOI: 10.1111/j.1365-3032.2008.00628.x]
<http://www3.interscience.wiley.com/journal/121413096/abstract>>
- Musolin D.L., 2007. Insects in a warmer world: ecological, physiological and life-history responses of true bugs (Heteroptera) to climate change. *Global Change Biology*. Vol. 13 (8): 1565–1585. [DOI: 10.1111/j.1365-2486.2007.01395.x] <<http://www3.interscience.wiley.com/journal/117991624/abstract>>
- [the same paper as a contribution to the thematic *virtual issue* of *Global Change Biology*: **Impacts of Environmental Change on Insect Management and Conservation** (edited by H. Jones). 2007. Vol. 13 (v1): <<http://www.wiley.com/bw/vi.asp?ref=1354-1013#180>>]
- Musolin D.L., Fujisaki K. & Numata H., 2007. Photoperiodic control of diapause termination, colour change and postdiapause reproduction in the southern green stink bug, *Nezara viridula*. *Physiological Entomology*. Vol. 32 (1): 64–72. [DOI: 10.1111/j.1365-3032.2006.00542.x]
<http://www3.interscience.wiley.com/journal/118486749/abstract>>
- Musolin D.L., Tsytsulina K. & Ito K., 2004. Photoperiodic and temperature control of reproductive diapause induction in the predatory bug *Orius strigicollis* (Heteroptera: Anthicoridae) and its implications for biological control. *Biological Control*. Vol. 31 (1): 91–98. [DOI: 10.1016/j.biocontrol.2004.04.001]
<http://www.sciencedirect.com/science/article/B6WBP-4CB0GS3-3/1/f3700f1d4005891b357b5cdefda29b48>>
- Musolin D.L. & Numata H., 2004. Late-season induction of diapause in *Nezara viridula* and its effect on adult coloration and post-diapause reproductive performance. *Entomologia Experimentalis et Applicata*. Vol. 11 (1): 1–6. [DOI: 10.1111/j.0013-8703.2004.00137.x]
<http://www3.interscience.wiley.com/journal/118750703/abstract>>
- Musolin D.L. & Numata H., 2003. Timing of diapause induction and its life-history consequences in *Nezara viridula*: Is it costly to expand the distribution range? *Ecological Entomology*. Vol. 28 (6): 694–703. [DOI: 10.1111/j.1365-2311.2003.00559.x]
<http://www3.interscience.wiley.com/journal/118840474/abstract>>
- Musolin D.L. & Numata H., 2003. Photoperiodic and temperature control of diapause induction and colour change in the southern green stink bug *Nezara viridula*. *Physiological Entomology*. Vol. 28 (2): 65–74. [DOI: 10.1046/j.1365-3032.2003.00307.x]
<http://www3.interscience.wiley.com/journal/118882632/abstract>>
- Torres J.B., Musolin D.L. & Zanuncio J.C., 2002. Thermal requirements and parasitism capacity of *Trissolcus brochymenae* (Ashmead) (Hymenoptera: Scelionidae) under constant and fluctuating temperatures, and assessment of development in field conditions. *Biocontrol Science and Technology*. Vol. 12 (5): 583–593.

[DOI: 10.1080/0958315021000016243]

<<http://www.informaworld.com/smpp/content~content=a713655674~db=all>>

- Musolin D.L. & Saulich A.H., 2001. Environmental control of voltinism of the stinkbug *Graphosoma lineatum* in the forest-steppe zone (Heteroptera: Pentatomidae). *Entomologia Generalis*. Vol. 25 (4): 255–264.
- Musolin D.L., Numata H. & 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*. Vol. 100 (2): 211–219. [DOI: 10.1046/j.1570-7458.2001.00866.x]
<<http://www3.interscience.wiley.com/journal/118971817/abstract>>
- Musolin D.L. & Saulich A.H., 2000. Summer dormancy ensures univoltinism in the predatory bug *Picromerus bidens*. *Entomologia Experimentalis et Applicata*. Vol. 95 (3): 259–267. [DOI: 10.1046/j.1570-7458.2000.00665.x] <<http://www3.interscience.wiley.com/journal/119034108/abstract>>
- Musolin D.L. & Saulich A.H., 1999. Diversity of seasonal adaptations in terrestrial true bugs (Heteroptera) from the Temperate Zone. *Entomological Science*. Vol. 2 (4): 623–639.
- Musolin D.L., Maysov A.V. & Saulich A.H., 1999. Egg diapause in *Alydus calcaratus* (L.) (Heteroptera: Alydidae): Photoperiodic induction under natural temperature conditions. *Applied Entomology and Zoology*. Vol. 34 (4): 469–473.
- Saulich A.H. & Musolin D.L., 1996. Univoltinism and its regulation in some temperate true bugs (Heteroptera). *European Journal of Entomology*. Vol. 93 (3): 507–518.
<<http://www.eje.cz/scripts/viewabstract.php?abstract=655&browsevol=0>>

Peer-reviewed national journals and periodicals:

- Musolin D.L. & Saulich A.Kh., 2011. Changes of natural distribution ranges of insects under conditions of the current climate warming. *Transactions of the Saint Petersburg Forest Technical Academy*. Saint Petersburg, Russia. Vol. 196: 246–254. [pdf: 1.2 Mb]
- Musolin D.L. & Saulich A.Kh., 2010. Seasonal development of anthocorid bugs of temperate climate zone. *Transactions of the Saint Petersburg Forest Technical Academy*. Vol. 192: 186–193.
- Saulich A.Kh. & Musolin D.L., 2009. Seasonal development and ecology of anthocorids (Heteroptera, Anthocoridae). *Entomologicheskoe Obozrenie*. Vol. 88 (2): 257–291 (in Russian, English summary). [English translation: *Entomological Review*. 2009. Vol. 89 (5): 501–528]
<<http://www.springerlink.com/content/k20410212640u726/>>
- Musolin D.L. & Fujisaki K., 2006. Changes in ranges: trends in distribution of true bugs (Heteroptera) under conditions of the current climate warming. *Russian Entomological Journal*. Vol. 15 (2): 175–179.
- Musolin D.L. & Saulich A.H., 1997. Photoperiodic control of nymphal growth in true bugs (Heteroptera). *Zoologicheskii Zhurnal*. Vol. 76 (5): 530–542 (in Russian, English summary). [English translation: *Entomological Review*. 1997. Vol. 77 (6): 768–780]
<http://www.maik.rssi.ru/abstract/enteng/97/enteng0768_abstract.pdf>
- Musolin D.L., 1996. Photoperiodic induction of aestivation in the stink bug *Picromerus bidens* (Heteroptera, Pentatomidae). A preliminary report. *Zoologicheskii Zhurnal*. Vol. 75 (12): 1901–1904 (in Russian, English summary). [English translation: *Entomological Review*. 1996. Vol. 76 (8): 1058–1060]
<http://www.maik.rssi.ru/abstract/enteng/96/enteng1058_abstract.pdf>
- Musolin D.L. & Saulich A.Kh., 1996. Photoperiodic control of seasonal development in bugs (Heteroptera). *Entomologicheskoe Obozrenie*. Vol. 75 (3): 489–506 (in Russian, English summary). [English translation: *Entomological Review*. 1996. Vol. 76 (7): 849–864]
<http://www.maik.rssi.ru/abstract/enteng/96/enteng0849_abstract.pdf>
- Musolin D.L. & Saulich A.H., 1995. Factorial regulation of seasonal cycle in stink bug *Graphosoma lineatum* (Heteroptera, Pentatomidae). 1. Temperature and photoperiodic responses. *Entomologicheskoe Obozrenie*. Vol. 74 (4): 736–743 (in Russian, English summary). [English translation: *Entomological Review*. 1996. Vol. 75 (9): 84–93]

Other periodicals:

- Musolin D.L., 2011. Life-history responses to the simulated climate warming of *Nezara viridula*. *Het News* (Newsletter of the UK Heteroptera Recording Schemes). 17/18 (Ser. 2): 10–13.
<<http://www.hetnews.org.uk/pdfs/Issue%2017-18.pdf>>

- Teale S., Hodge P., Boyd J., Musolin D. & Bantock T., 2010. *Picromerus bidens* in autumn (a note). *Het News (Newsletter of the UK Heteroptera Recording Schemes)*. 16 (Ser. 2): 11. <http://www.hetnews.org.uk/pdfs/Issue%2016_Autumn%202010_1170kb.pdf>
- Musolin D.L., 2010. Range expansion of the southern green stink bug *Nezara viridula* (Heteroptera: Pentatomidae) in response to the rapid climate change in Japan. *Het News (Newsletter of the UK Heteroptera Recording Schemes)*. 15 (Ser. 2): 4–6. <http://www.hetnews.org.uk/pdfs/Issue%2015_Spring%202010_862kb.pdf>
- Musolin D.L., Voigt D., 2010. Obituary — Pablo Javier Perez Goodwyn, 1971–2009, Heteropterist. *Het News (Newsletter of the UK Heteroptera Recording Schemes)*. 15 (Ser. 2): 7–8. <http://www.hetnews.org.uk/pdfs/Issue%2015_Spring%202010_862kb.pdf>
- Saulich A.H. & Musolin D.L., 2008. Seasonal development of aquatic & semiaquatic true bugs (Heteroptera) [an extended English summary of the book]. *Het News (Newsletter of the UK Heteroptera Recording Schemes)*. 11 (Ser. 2): 4–6. <http://www.hetnews.org.uk/pdfs/Issue%2011_Spring%202008_1667Kb.pdf>
- Saulich A.H. & Musolin D.L., 2007. Four seasons: Diversity of seasonal adaptations and ecological mechanisms controlling seasonal development in true bugs (Heteroptera) in the temperate climate. Stekolnikov A.A. (ed.) *Adaptive Strategies of Terrestrial Arthropods to Unfavourable Environmental Conditions: A collection of papers in memory of Professor Viktor Petrovich Tyshchenko* (Proceedings of the Biological Institute of St. Petersburg State University, vol. 53): 25–106. (in Russian, with expanded 3-page English summary).
- Musolin D.L., 2005. The southern green shield bug *Nezara viridula* (L.) expands its distribution range, not only in the U.K. *Het News (Newsletter of the Heteroptera Recording Schemes)*. 5 (Ser. 2): 2–3. <http://www.hetnews.org.uk/pdfs/Issue%205_Spring%202005_380Kb.pdf>
- Musolin D.L., 1999. Environmental control of insect development: From pure research to practical applications. *The Department of Environmental Sciences and Policy Journal* (Central European University, Budapest). Vol. 2: 7–16.
- Musolin D.L., 1998. A review of tree species tolerant to sulphur dioxide. In: Sennov S.N. (Ed.). *Forestry, Silviculture, and Soil Science*. State Forest Technical Academy. St. Petersburg. P. 61–66 (in Russian).
- Musolin D.L., 1992. The influence of air pollution on birch mining sawflies. In: Solovjev V.A. (Ed.). *Ecology and Forest Protection*. Forest Technical Academy. St. Petersburg. P. 70–75 (in Russian).
- Musolin D.L., 1989. Phyllophagous arthropods in Leningrad and Leningrad region. In: Solovjev V.A. (Ed.). *Ecology and Forest Protection*. Forest Technical Academy. Leningrad. P. 74–76 (in Russian).

Other publications: published abstracts – 43.

Comments for media: Infestations of bed bugs: <http://www.tv100.ru/video/view/34600/>

INVITED TALKS:

- 2010: IV Memorial Readings in Memory of Professor Oleg A. Kataev *Fauna and Ecology of Dendrophylous Forest Insects in Eurasia*. St Petersburg, Russia.
- 2009: III International Symposium on Biological Control of Arthropods. Christchurch, New Zealand.
- 2008: XXIII International Congress of Entomology. Durban, South Africa.

OTHER RECENT PRESENTATIONS:

- 2011: 4th International Symposium on the Environmental Physiology of Ectotherms and Plants. Rennes, France.
- 2011: *Fundamental Issues of Entomology in the XXI Century*. The International Conference. St. Petersburg, Russia.
- 2011: ThermAdapt Science Meeting *Evolutionary and Plastic Responses of Animal Growth to Different Temperatures: Adaptations and Constraints*. Tartu, Estonia.
- 2009: 3rd International Symposium on the Environmental Physiology of Ectotherms and Plants. Tsukuba, Japan.
- 2009: 53rd Annual Meeting of the Japanese Society of Applied Entomology and Zoology. Sapporo, Japan.
- 2007: The Symposium “*New Models for Integrated Pest Management*”. Kyoto, Japan.
- 2007: The 2nd International Symposium on the Environmental Physiology of Ectotherms and Plants. Dunedin, New Zealand.
- 2005: The First International Symposium on the Environmental Physiology of Ectotherms and Plants. Roskilde, Denmark.
- 2004: XXII International Congress of Entomology. Brisbane, Australia.

ORGANIZED CONFERENCES:

2011: *National Conference "Diseases and Pests of Forests in Russia: the XXI century" and V Annual Scientific Readings in Memory of Professor O. A. Kataev*. Yekaterinburg, Russia.

2011: *Fundamental Issues of Entomology in the XXI Century*. The International Conference. St. Petersburg, Russia.

CHAIR OF MEETING SESSIONS:

2011: 4th International Symposium on the Environmental Physiology of Ectotherms and Plants. Rennes, France.

REFERENCES:

- **Aida Saulich**, Prof., Dept. of Entomology, Faculty of Biology and Soil Sciences, Saint Petersburg State University, Saint Petersburg, Russia, <325mik40@gmail.com>
- **Hideharu Numata**, Prof., Dept. of Zoology, Graduate School of Science, Kyoto University, Kyoto, Japan, <numata@ethol.zool.kyoto-u.ac.jp>
- **Kenji Fujisaki**, Prof., Graduate School of Agriculture, Kyoto University, Kyoto, Japan, <fujisaki@adm.kais.kyoto-u.ac.jp>
- **Richard Harrington**, Dr., Plant and Invertebrate Ecology Division, Rothamsted Research, Harpenden, Hertfordshire, UK, <richard.harrington@bbsrc.ac.uk>
- **John Ruberson**, Prof., Dept. of Entomology, University of Georgia, Tifton, GA, USA, <ruberson@tifton.uga.edu>
- **David Denlinger**, Distinguished Prof., Chair of Dept. of Entomology, Ohio State University, Columbus, OH, USA; editor of *Journal of Insect Physiology*, <denlinger.1@osu.edu>
- **Kiyomitsu Ito**, Dr., former Head of Laboratory, National Agricultural Research Center for Hokkaido Region, Sapporo, Japan, <kymt@kta.biglobe.ne.jp>