

Preliminary observation of native *Glyptostrobus pensilis* (taxodiaceae) stands in vietnam

Averyanov L.V., Phan K.L., Nguyen T.H., Nguyen S.K., Nguyen T.V., Pham T.D.

Komarov Botanical Institute of the Russian Academy of Sciences, Prof. Popov str., 2, St. Petersburg, 197376, Russian Federation; Institute of Ecology and Biological Resources, 18 Hoang Quoc Viet, Nghia Do, Cau Giay, Hanoi, Viet Nam; Center for Plant Conservation, Vietnam Union of Science and Technology Associations, 25/32/191, Lac Long Quan Rd, Nghia Do, Cau Giay District, Ha Noi, Viet Nam; Hanoi University of Science, 334 Nguyen Trai, Thanh Xuan, Hanoi, Viet Nam

Abstract: Results of preliminary studies of last remnants of *Glyptostrobus pensilis* native populations in Vietnam are presented in the paper in form of standard taxonomical treatment with comments on ecology, population structure and natural conditions of its habitats. Perspectives of conservation of this unique Tertiary relict are specially assessed and discussed.

Author Keywords: Eastern Indochina; *Glyptostrobus pensilis*; Native populations; Taxodiaceae; Tertiary relict; Vietnam

Index Keywords: Cupressaceae; *Glyptostrobus pensilis*

Year: 2009

Source title: Taiwania

Volume: 54

Issue: 3

Page : 191-212

Link: Scopus Link

Correspondence Address: Averyanov, L. V.; Komarov Botanical Institute of the Russian Academy of Sciences, Prof. Popov str., 2, St. Petersburg, 197376, Russian Federation; email: av_leonid@yahoo.com
ISSN: 0372333X

Language of Original Document: English

Abbreviated Source Title: Taiwania

Document Type: Article

Source: Scopus

Authors with affiliations:

- Averyanov, L.V., Komarov Botanical Institute of the Russian Academy of Sciences, Prof. Popov str., 2, St. Petersburg, 197376, Russian Federation
- Phan, K.L., Institute of Ecology and Biological Resources, 18 Hoang Quoc Viet, Nghia Do, Cau Giay, Hanoi, Viet Nam, Center for Plant Conservation, Vietnam Union of Science and Technology Associations, 25/32/191, Lac Long Quan Rd, Nghia Do, Cau Giay District, Ha Noi, Viet Nam, Hanoi University of Science, 334 Nguyen Trai, Thanh Xuan, Hanoi, Viet Nam
- Nguyen, T.H., Institute of Ecology and Biological Resources, 18 Hoang Quoc Viet, Nghia Do, Cau Giay, Hanoi, Viet Nam, Center for Plant Conservation, Vietnam Union of Science and Technology Associations, 25/32/191, Lac Long Quan Rd, Nghia Do, Cau Giay District, Ha Noi, Viet Nam

- Nguyen, S.K., Institute of Ecology and Biological Resources, 18 Hoang Quoc Viet, Nghia Do, Cau Giay, Hanoi, Viet Nam, Center for Plant Conservation, Vietnam Union of Science and Technology Associations, 25/32/191, Lac Long Quan Rd, Nghia Do, Cau Giay District, Ha Noi, Viet Nam
- Nguyen, T.V., Institute of Ecology and Biological Resources, 18 Hoang Quoc Viet, Nghia Do, Cau Giay, Hanoi, Viet Nam, Center for Plant Conservation, Vietnam Union of Science and Technology Associations, 25/32/191, Lac Long Quan Rd, Nghia Do, Cau Giay District, Ha Noi, Viet Nam
- Pham, T.D., Center for Plant Conservation, Vietnam Union of Science and Technology Associations, 25/32/191, Lac Long Quan Rd, Nghia Do, Cau Giay District, Ha Noi, Viet Nam

References:

- Averyanov, L.V., Loc, P.K., Hiep, N.T., Harder, D.K., Phytogeographic review of Vietnam and adjacent areas of (2003) Eastern Indochina. *Komarovia*, 3, pp. 1-83
- Dallimore, W., Jackson, A.B., Harrison, S.G., (1967) A handbook of Coniferae and Ginkgoaceae, p. 729. , 4th ed. St.Martin's Press. New York, USA
- Decision 32. 2006. Governmental Decree No 32/2006/ND-CP date on 30 March 2006 on the Management of native, threatened, precious and rare plants and animals. Hanoi (no pagination)
- Farjon, A., (2005) A monograph of Cupressaceae and Sciadopitys, p. 648. , Cambridge Printing, Royal Botanic Gardens, Kew, UK
- Fu, L.-G., Yu, Y.-F., Mill, R.R., Taxodiaceae Warming (1999) Flora of China. 4. , Wu, Z.-Y. and Peter H. Raven (eds.), Cycadaceae through Fagaceae: 54-61. Science Press, Beijing, China. Missouri Botanical Garden, St. Louis, USA
- Ho, P.-H., (1999), p. 991. , An illustrated flora of Vietnam. 1. Nha Xuat Ban Tre, tp Ho Chi Minh. Vietnam(2001) IUCN Red List Categories: Version 3.1, , http://www.iucnredlist.org/static/categories_criteria_3_1, IUCN, Prepared by the IUCN Species Survival Commission. IUCN. Gland, Switzerland, and Cambridge, UK
- Le, K.B., Phan, K.L., VI - Taxodiaceae Rich. - H Bt Mc (1984) *Florae Taynguyenensis*, p. 235. , Vin Sinh Vt Hc. Hà Ni. Vietnam, in Vietnamese
- (1907), Lecomte, M. H. and H. Humbert. (eds.), Flore Générale de l'Indochine Vol. 1-7 & Supplements, Paris, France
- Li, F.-G., Xia, N.-H., Population structure and genetic diversity of an endangered species, *Glyptostrobus pensilis* (Cupressaceae) (2005) *Bot. Bull. Acad. Sin.*, 46, pp. 155-162
- Loureiro, J., (1793) *Flora Cochinchinensis*, p. 882. , T. 1-2. Impenfis Haude Spener, Berolini, Germany
- Luu, N.D.T., Thomas, P.I., Conifers of Vietnam (2004) An illustrated field guide for the most important forest trees, p. 86. , Darwin Initiative, Hanoi, Vietnam
- Nguyen, T.H., Vidal, J.E., Gymnospermae (1996) Flore du Cambodge du Laos et du Viêtnam, p. 166. , 28. Mus. Nat. D'Hist. Natur., Paris, France
- Nguyen, T.H., Phan, K.L., Luu, N.D.T., Thomas, P.I., Farjon, A., Averyanov, L., Regaldo, J., (2004) Vietnam Conifers: Conservation Status Review 2004, p. 128. , Fauna & Flora International, Vietnam Programme, Hanoi, Vietnam
- Phan, K.L., Species of Pinopsida in Vietnam (1984) *Journ. Biol. (Hanoi)*, 6 (4), pp. 5-10. , (in Vietnamese)
- Schmid, M., Végétation du Vietnam: Le massif sud-annamitique et les regions limitrophes (1974) ORSTOM, p. 243. , Paris, France
- Takhtajan, A., (1978) The floristic regions of the world, p. 247. , Nauka, Leningrad, Russia, in Russian
- Takhtajan, A., (1986) Floristic Regions of the World. Univ., p. 522. , California Press, Berkeley, Los Angeles, London, U.S.A
- (2004) Sourcebook of Existing and Proposed Protected Areas in Vietnam, , http://birdlifeindochina.org/birdlife/source_book/source_book, Tordoff, A. W., T. Q. Bao, N. D. Tu and L. M. Hung (eds.), 2 ed. Birdlife International in Indochina and the Ministry of Agriculture and Rural Development, Hanoi, Vietnam

- Vidakovic, M., (1991) Conifers, Morphology and Variation, p. 755. , Graficki Zavod Hrvatske, Croatia
- (1996) Vietnam Forest trees. Forest Inventory and Planning Institute, p. 788. , Vu, Van Dung (ed.), Agricultural Publishing House. Hanoi, Vietnam