Analele Universităţii din Craiova, seria Agricultură – Montanologie – Cadastru (Annals of the University of Craiova - Agriculture, Montanology, Cadastre Series) Vol. XLIV 2014

MEDICINAL PLANTS FROM GREENHOUSES COLLECTION "AL. BUIA" BOTANICAL GARDEN (NOTE II)

BORUZ VIOLETA, CRUCERU SONIA

Keywords: medicinal plants, greenhouses, Botanical Garden

ABSTRACT

In the paper are presented the medicinal plants from the greenhouses collection of Botanical Garden "Al. Buia" from the University of Craiova. The species existing in the collection are better known as ornamental plants than as medicinal plants. These taxa with ornamental and medical value were obtained largely through the exchange of plant material between the Botanical Garden and other similar institutions.

INTRODUCTION

Botanical Gardens have an important role in *ex situ* conservation of collections of living plants, as a precaution against loss of species or natural genetic resources. Existing plants in collections need to be known in all aspects. From the collection Botanical Garden greenhouses were selected main taxa that have therapeutic properties. Some of them were presented in Note I (Boruz & Cruceru 2013), and Note II is a continuation of the list previous presented.

MATERIAL AND METHODS

Medicinal plants in the collection are presented in a table in alphabetical order, as follows: scientific name and family specified for each taxon, vernacular names, geoelement, plant part(s) used for therapeutic purposes, medical uses and observations (phenological data, and where appropriate if any precautions in the use of plants for medical purposes). For identification and nomenclature modern speciality literature has been used.

Nomenclature is presented according to international databases (The Plant List, GRIN).

RESULTS AND DISCUSSIONS

In the table 1 are presented frequent usages of medicinal plants in greenhouses collection:

Table 1

The medicinal plants identified in the collection greenhouses

Taxon name (Family name)	Vernacular names	Geoelement	Medical uses / Pharmacological aspects	Plant part(s) used	Observations
Acalypha hispida Burm. f. (Euphorbiaceae)	Chenille plant, Red- cattail, Philippine-medusa	Tropical Asia, Australia	Decoction of leaves and flowers taken internally as laxative, diuretic and for gonorrhea. Bark root used for pulmonary problems. Extract of leaves was evaluated for phytochemical, cytotoxic and antibacterial activities (Bokshi et al., 2012)	Leaves, flower, root	Flourished. Poisonous plant
Allamanda schottii Pohl (Apocynaceae)	Dwarf golden trumpet, Bush allamanda	Southern America	Anti-proliferative effect (Anderson et al., 1988)	The root extract	Flourished
Aristolochia elegans Mast.	Calico-flower	Southern America	Antibacterial, antiprotozoal, anti HIV activities (Jiménez-	Leaves, roots,	Flourished and

(Aristolochiaceae)			Arellanes et al., 2012)	seeds	fructified. Poisonous plant
Aucuba japonica Thunb. (Cornaceae)	Japanese-laurel, Spotted-laurel	Asia-Temperate	Anti-inflammatory, anti-microbial, anti-algesic and anti-tumor activities (Kim et al., 2014)	Leaves	Has not flourished
Brugmansia arborea (L.) Lagerh. (Solanaceae)	Angeĺ's-trumpet	Southern America	Aphrodisiac activity, Anti Oxidant activity (used externally as aqueous extract); Hallucinogenic (Ferreira-Júnior, 2010)	Leaves	Flourished
Callistemon lanceolatus (Sm.) Sweet (Myrtaceae)	Crimson bottlebrush	South-eastern Australia	Anti- inflammatory (Kumar et al., 2011), antifungal, antioxidant, antithrombin, antidiabetic, antimicrobial and herbicidal activities (Das & Singh 2012)	Leaves, flowers and seeds	Has not flourished
Catharanthus roseus (L.) G. Don (Apocynaceae)	Madagascar periwinkle, bright-eyes	Madagascar	The sap is extremely toxic. Antioxidant and antidiabetic (Tiong et al., 2013), antimicrobial activity (Patil & Gosh, 2010), anticancer activities (Widowati et al., 2013)	Leaves, stem, root and flower	Flourished and fructified
Codiaeum variegatum (L.) Rumph. ex A. Juss. (Euphorbiaceae)	Variegated croton	Southern India, Sri Lanka, Indonesia, Malaysia	Treatment of epilepsy (Moshi & Kagashe, 2004)	Leaves	Flourished
Costus afer Ker-Gawl. (Zingiberaceae)	Bush cane, Ginger-lili, Spiral-ginger	Senegal, east to Ethiopia, Angola	Antimicrobial (Akpan et al., 2012)	Leaves	Flourished
Hedychium coronarium J. Koenig (Zingiberaceae)	White ginger-lily, cinnamon-jasmine, butterfly-ginger, butterfly-lily	The Himalayas region of Nepal and India	The seed is aromatic, carminative and stomachic, the root is antirheumatic, excitant and tonic, the ground rhizome is used a febrifuge. An essential oil from the roots is carminative and antihelmintic (Van Thanh et al., 2014)	Seeds, root, rhizome	Flourished
Hibiscus rosa-sinensis L. (Malvaceae)	China-rose, Chinese hibiscus	Tropical Asia	Flowers –decoction given in bronchial catarrh, infusion of petals is a refrigerant drink in fever, useful in cystitis. The leaves – anodyne, emollient; cooling, astringent, remove burning of the body, urinary discharges; Various parts of this plant, like leaves, flowers and roots, have been known to possess medicinal properties like aphrodisiac, menorrhagia, oral contraceptive, laxative etc. (Kumar & Singh, 2012)	Flowers, leaves	Flourished
Lantana camara L. (Verbenaceae)	Big sage, Wild sage	Central and South America	Antibacterial activity, treatment of cuts, ulcers, swellings, cataract, eczema and rheumatism, bronchitis and arterial hypertension (Saxena et al., 2012)	Leaves, flower, stem and root	Flourished and fructified

Myrsine africana L. (Myrsinaceae)	African-boxwood	Africa, Asia-Temperate, Asia-Tropical	The aerial parts of plant are found to possess anti-tumor, purgative, anti-fertility, antihelmintic and antimicrobial (Abbhi et al., 2011)	Aerial parts	Has not flourished
Murraya exotica L. (Rutaceae)	Orange-jasmine, Mock orange	Tropical Asia: India, Southern China, Taiwan, Thailand	The leaves and root bark are sometime used to treat rheumatism, and hysteria. The leaves are stimulant and astringent used in the form on an infusion to treat diarrhea and dysentery (Gautam & Goel, 2012). The methanol extract of leaves of traditionally used was evaluated for possible cytotoxic, thrombolytic and antioxidant (Khatun et al., 2014)	Leaves and root	Flourished and fructified
Nerium oleander L. (Apocynaceae)	Oleander, Rose bay, Rose laurel	Northern Africa, eastern Mediterranean basin and Southeast Asia	The leaf is used as a cardiotonic, diuretic, anti-bacterial in cutaneous eruptions, and is also effective against snake-bites; the root is used for curing different types of cancers, ulcers and leprosy (Singhal & Gupta, 2011); Hepatoprotective and antioxidant activity of methanolic extract of flowers (Singhal & Gupta, 2012); The flowers, leaves, juice or latex, bark and roots have been used against corns, warts, cancerous ulcers, carcinoma ulcerating or hard tumors (Adome et al., 2003)	Leaves, flowers, roots	If ingested the stem or leaves and/or *Nerium* extracts are consumed or ingested in high enough quantities it is toxic.
Ochna serrulata (Hochst.) Walp. (Ochnaceae)	Carnival Ochna; Mickey Mouse bush	South Africa	Antibacterial (Makhafola & Eloff, 2012)	Leaves	Flourished and fructified
Pittosporum undulatum Vent. (Pittosporaceae)	Sweet Pittosporum, Australian cheesewood, Orange-berry pittosporum	Eastern Australia	Anti-inflamatory and antitumoral (Sadgrove & Jones 2013)	Fruits	Flourished and fructified

CONCLUSIONS

The work presented a number of 17 taxa with therapeutic properties of greenhouses in the Botanical Garden in Craiova. They belong to 13 families, most species presented being perennials.

Biological material existing in greenhouses is an important basis for the process of education and scientific research.

With the collections it shelters, the Botanical Garden of Craiova contributes to the protection and preservation of natural heritage.

BIBLIOGRAPHY

1. **Abbhi, V., Joseph, L., George, M.,** 2011 - *Phytochemical analysis of fruits extract of Myrsine africana*, Int J Pharm Pharm Sci, 3(4): 427-430.

2. **Adome, R. O., Gachihi, J. W., Onegi, B., Tamale, J., Apio, S. O.,** 2003 - *The cardiotonic effect of the crude ethanolic extract of Nerium oleander in the isolated guinea pig hearts,* African health science, 3(2): 77-82.

3. **Akpan, M. M., Odeomena, C. S., Nwachukwu, C. N., Danladi, B.,** 2012 - *Antimicrobial assessment of ethanolic extract of Costus afer leaves***,** Asian Journal of Plant Science and Research, 2(3): 335-341.

4. **Al-Jamal, A.-R., Alqadi, T.,** 2011 - *Effects of Rosemary (Rosmarinus officinalis) on Lipid Profile of Diabetic Rats,* Jordan Journal of Biological Sciences, 4(4): 199-204.

5. **Anderson, J. E., Chang, C.-J., McLaughlin, J. L.,** 1988 - *Bioactive Components of Allamanda schottii,* J. Nat. Prod., 51(2): 307–308.

6. **Bokshi, B., Sayeed, M. A. S., Ahmed, M. I., Karmakar, U. K., Sadhu, S. K.,** 2012 - *Assessment of antimicrobial and cytotoxic activities of ethanolic extract of leaves of Acalypha hispida*, IJPSR, 3(6): 1705-1708.

7. **Boruz Violeta, Cruceru Sonia,** 2013 - *Medicinal Plants from Greenhouses Collection "Al. Buia" Botanical Garden of the University of Craiova (Note I)*, Analele Universităţii din Craiova, seria Agricultură – Montanologie – Cadastru (Annals of the University of Craiova - Agriculture, Montanology, Cadastre Series) Vol. XLIII: 83 – 89.

8. **Das, S., Singh, U.,** 2012 - *Therapeutic potentials of Callistemon lanceolatus DC,* International Journal of Advances in Pharmacy, Biology and Chemistry, 1(2): 206-210.

9. **Ferreira-Júnior, W. S., Cruz Margarita Paloma, Vieira, F. J., Albuquerque, U. P.,** 2010 - *Are hallucinogenic plants efficacious in curing diseases?*, Boletin Latinoamericano y del Caribe de Plantas Medicinales y Aromáticas, 9(4): 292-301.

10. **Gautam, M. K., Goel, R. K.,** 2012 - *Exploration of preliminary phytochemical studies of leaves of Murraya paniculata L.*, Int. J. of Pharm. & Life Sci. (IJPLS), 3(8): 1871-1874.

11. **Jiménez-Arellanes, A., León-Díaz, R., Meckes, M., Tapia, A., Molina-Salinas, G. M., Luna-Herrera, J., Yépez-Mulia, L.,** 2012 - *Antiprotozoal and Antimycobacterial Activities of Pure Compounds from* Aristolochia elegans *Rhizomes*, Evid Based Complement Alternat Med.: 593403.

12. **Khatun, A., Rahman, M., Jahan, S.,** 2014 - *Preliminary phytochemical, cytotoxic, thrombolytic and antioxidant activities of the methanol extract of Murraya exotica Linn. leaves*, Orient Pharm Exp Med: 1-9.

13. **Kim, Y. M., Sim, U. C., Shin, Y., Kim Kwon, Y.,** 2014 - *Aucubin promotes neurite outgrowth in neural stem cells and axonal regeneration in sciatic nerves*, Exp Neurobiol.: 23(3): 238-45, Korea.

14. **Kumar, S., Kumar, V., Prakash, O. M.,** 2011 - *Pharmacognostic study and anti-inflammatory activity of Callistemon lanceolatus leaf*, Asian Pac J Trop Biomed, 1(3): 177-181.

15. **Kumar, A., Singh, A.,** 2012 - *Review on Hibiscus rosa sinensis*, International Journal of Research in Pharmaceutical and Biomedical Sciences, 3(2): 534-538.

16. **Makhafola, T. J., Eloff, J. N.,** 2012 - *Five Ochna species have high antibacterial activity and more than ten antibacterial compounds*, S Afr J Sci, 108(1/2): 1-6.

17. **Moshi, M. J., Kagashe, G. A.,** 2004 - *A study of the effect of extracts of Codiaeum variegatum (L.) A. Juss. on Picrotoxin- induced convulsions in mice*, Tanzania Medical Journal, 19(1): 12-14.

18. **Patil, P. J., Ghosh, J. S.,** 2010 - *Antimicrobial activity of Catharanthus roseus – a detailed study*, British Journal of Pharmacology and Toxicology, 1(1): 40-44.

19. **Sadgrove, N. J., Jones, G. L.,** 2013 - *Chemical and biological characterisation of solvent extracts and essential oils from leaves and fruit of two Australian species of Pittosporum (Pittosporaceae) used in aboriginal medicinal practice*, J Ethnopharmacol., 145(3): 813-21.

20. **Saxena, M., Saxena, J., Khare, S.,** 2012 - *A brief review on: Therapeutical values of Lantana camara plant,* International Journal of Pharmacy & Life Sciences, 3(3): 1551-1554.

21. **Singhal, K. G., Gupta, G. D.,** 2011 - *Some Central Nervous System Activities of Nerium oleander Linn (Kaner) Flower Extract,* Trop J Pharm Res, 10(4): 455-461.

22. **Singhal, K. G., Gupta, G. D.,** 2012 - *Hepatoprotective and antioxidant activity of methanolic extract of flowers of Nerium oleander against CCl4-induced liver injury in rats*, Asian Pacific J. of Tropical Medicine: 677-685.

23. **Tiong, S. H., Looi, C. Y., Hazni, H., Paydar, M., Wong, W. F., Cheah, S.-Ch., Mustafa, M. R., Awang, K.,** 2013 - *Antidiabetic and Antioxidant Properties of Alkaloids from Catharanthus roseus (L.) G. Don,* Molecules, 18(8): 9770-9784.

24. **Van Thanh, B., Dai, T. D., Thang, T. D., Binh, N. Q., Ngoc Anh, L. D., Ogunwande, I. A.,** 2014 - *Composition of essential oils of four Hedychium species from Vietnam*, Chemistry Central Journal, 8: 1-54.

25. **Widowati, W., Mozef, T., Risdian, C., Yellinaty, Y.,** 2013 - *Anticancer and free radical scavenging potency of Catharanthus roseus, Dendrophthoe pentandra, Piper betle and Curcuma mangga extracts in breast cancer cell lines*, Oxid Antioxid Med Sci., 2(2): 137-140.

26. **http**://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl: accesed 9th of August, 2014

27. **http**://www.theplantlist.org/tpl/record/tro: accesed 9th of August, 2014