

## CACTIE AT LONDON'S ROYAL BOTANIC GARDENS KEW

**Leskovets Yevheniia**

Student of Faculty of Science Education and Ecology

**Pe'ko Lyudmila**

Ph.D., Associate Professor

(Dragomanov National Pedagogical University)

Kew Gardens in London is the most beautiful botanical garden in the world. In



**Fig. 1. Princess of Wales conservatory.**



**Fig. 2. The Cactus House.**

deserts, where water is scarce one major strategy is to remain passive during the day, when temperature soar and only become active in the cool of the night. Desert in Kew's Princess of Wales conservatory (Fig. 1, 2, 3) contains plants from arid regions all around the world.

The Cactus House was devised to house the collection of Mrs A Sherman Hoyt, a Californian woman whose collection of cacti was the toast of 1929's Royal Horticultural Society show. She also donated a painting of a desert scene and various sands and rocks [8]. Cacti and other succulent plants have been placed among the rocks in positions as near as possible to those in which they are found in

their native home, and the whole effect makes

a remarkably striking picture, since the rocky foreground blends so naturally with the painted desert scene behind that it is by no means easy to detect any break between the actual living plants and those shown in the background. The Cactus House was opened to the public on March 24<sup>th</sup> 1930 (<https://www.nature.com/articles/129500e0>).

A **cactus** (plural: *cacti*, *cactuses*, or *cactus*) is a member of the plant family **Cactacea**, a family comprising about 127 genera with some 1750 known species of the order Caryophyllales. The word "cactus" derives, through Latin, from the Ancient Greek κάκτος, *kaktos*, a name originally used by Theophrastus for a spiny plant whose identity is not certain. Cacti occur in a wide range of shapes and sizes (<https://en.wikipedia.org/wiki/Cactus>). Cacti are succulent plants.

In botany, succulent plants, also known as succulents, are plants that have some parts that are more than normally thickened and fleshy, usually to retain water in arid climates or soil conditions. The word "succulent" comes from the Latin word *sucus*, meaning juice, or sap [7]. Succulent plants may store water in various structures, such as leaves and stems. Some definitions also include roots, thus geophytes that survive unfavorable periods by dying back to underground storage organs may be regarded as succulents. In horticultural use, the term "succulent" is sometimes used in a way which

excludes plants that botanists would regard as succulents, such as cacti. Succulents are often grown as ornamental plants because of their striking and unusual appearance.

Many plant families have multiple succulents found within them (over 25 plant families) [6]. In some families, such as *Aizoaceae*, *Cactaceae*, and *Crassulaceae*, most species are succulents (<https://www.revolvy.com/page/Succulent-plant>)

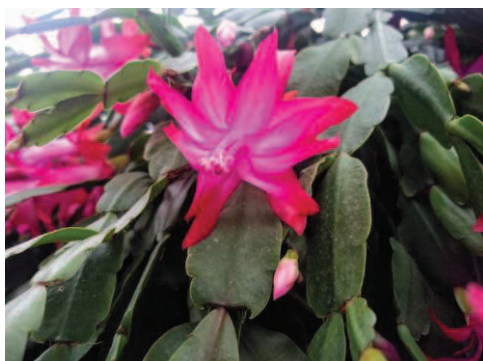
The International Organization for Succulent Plant Study (IOS) describes itself as a "non-governmental organization promoting the study and conservation of succulent and allied plants and encouraging collaboration among scientists and curators of significant living collections of such plants, professional or amateur"[8]. In 1984, it was decided that the Cactaceae Section of the IOS should set up a working party, now called the International Cactaceae Systematics Group (ICSG), to produce consensus classifications of cacti down to the level of genera (in the hierarchy of biological classification, genera come above species and below family). Their system has been used as the basis of subsequent classifications by E. Anderson [6] (<https://www.revolvy.com/page/Cactus>).



**Fig. 3.** Cacti area of the Tropical Nursery areas are flat or thin and spineless. Some cacti have leaves, and even flowers (Fig. 5).



**Fig. 4.** The golden barrel cactus



**Fig. 5.** *Schlumbergera bridgesii* 1840s by William Buckley at the Rollisson Nurseries in England. *Schlumbergera bridgesii* is a very popular and unusual cactus. The plant bodies

Cacti from desert areas are plump and spiny (Fig. 4) while cacti that originally grew in jungle

Thus, we give some examples. *The golden barrel cactus* (Fig. 4) forms a single very round globe of often gigantic dimensions: Specimens four feet in diameter are not unusual. Its ribs are lined with hooked yellow spines. The top of the plant is covered with thick, white wool. The yellow, cup-shaped flowers are rarely produced indoors and, even then, only on mature specimens. This cactus can tolerate low light for a surprisingly long time, showing no signs of growth and needing almost no water. It will, however, suddenly rot away. For healthy growth, full sun is required (<https://home.howstuffworks.com/golden-barrel-cactus.htm>).

*Schlumbergera bridgesii* (Christmas Cactus) is native to the coastal mountains of south-eastern Brasil (Fig. 5). English botanist Martyn Rix (a leading botanist, plant collector, gardener, independent botanical advisor and writer) identifies Christmas Cactus as a hybrid, *Schlumbergera*  $\times$  *buckleyi*, originally produced in the





Fig. 6. *Carnegiea gigantea*

are flattened and the leaves are actually stems. The flowers are produced from notches in these stems or from the tips. The fuchsia-like flowers bloom any time from December to February and last a long time. They are generally carmine red, tinged purple in the center, and perfectly symmetrical.

(<https://worldofsucculents.com/schlumbergera-bridgesii-christmas-cactus/>)

In conclusion, Kew Gardens expert horticulturists look at some of the stunning cacti in the Princess of Wales Conservatory and provide top tips on how to grow your own cactus from a clipping. Every cactus has a personality from the mammoth *Carnegiea gigantea* (Fig. 6) can grow up to 20 metres tall and last for 250 years, to the tiny *Blossfeldia* (Fig. 7, 8) which is the smallest cactus measuring around 2cm [12].



Fig. 7. *Blossfeldia*.



Fig. 8. Flowering *Blossfeldia*.

Cacti have a wide distribution in the Americas and a single epiphytic species that also reaches Africa and Asia. Apart from two poorly known species, the modern scientist [9] have assessed all other 1,478 species recognised in the family [8] in terms of their distribution and threats in a series of workshops focusing on the different centres of endemism and diversity (Mexico and US, Caribbean, Western South America and Brazil).

#### References

1. Петько Л.В. Актуальність формування професійно орієнтованого іншомовного навчального середовища в умовах університету / Л.В.Петько // Гуманітарний вісник ДВНЗ «Переяслав-Хмельницький державний педагогічний університет імені Григорія Сковороди»: збірник наукових праць. – Переяслав-Хмельницький, 2014. – Вип. 33. – С. 128–141.
2. Петько Л.В. Імператив глобалізаційних перспектив – формування професійно спрямованого іншомовного навчального середовища в умовах університету / Л.В.Петько // Педагогіка вищої та середньої школи: зб.наук.праць ; за ред. З.П.Бакум. – Криворізький педагогічний інститут ДВНЗ «Криворізький національний університет». – Вип. 41. – Кривий Ріг : Друкарня Романа Козлова, 2014. – С. 254–261.
3. Петько Л.В. Професійно орієнтоване іншомовне навчання в умовах університету / Л.В. Петько, С.М.Бабій // Підготовка фахівців у вищій школі: крок в Європу: Тр. III Молодіжної міжнар. наук.-практ. конф. (дистанційної), 20 травня 2015 р. ; за ред. І.М.Ковчиної. – К. : НПУ імені М.П.Драгоманова, 2015. – С. 18–19.
4. Петько, Л. В. Фільми іноземною мовою у формуванні ПОІНС для студентів-біологів / Л. В. Петько // Критичний підхід у викладанні природничих дисциплін : матеріали Міжнародної науково-методичної конференції, 14

листопада 2018 року / укл. : О П. Галай [та ін.]. - Київ : Вид-во НПУ імені М. П. Драгоманова, 2018 - С. 118-124.

5. Турчинова, Г. Зміст курсу навчання викладання біології англійською мовою / Г. Турчинова // Збірник наукових праць Уманського державного педагогічного університету імені Павла Тичини / [гол. ред.: М. Т. Мартинюк]. - Умань : ПП Жовтий, 2012. - Ч.1. - С. 307-317.

6. Турчинова, Г. В. Формування професійних умінь викладання біології англійською мовою / Г. В. Турчинова // Наукові записки : [Збірник наукових статей Національного педагогічного університету імені М. П. Драгоманова]. Серія : Педагогічні та історичні науки. - Київ : Вид. центр НПУ ім. М. П. Драгоманова, 2005. - Вип. 58. - С. 156-165.

7. Amazing Big Cactuses at Kew Gardens. **Video.** London. URL: <https://www.youtube.com/watch?v=RVoZfqzg3J8>

8. Anderson, Edward F. (2001), *The Cactus Family*, Pentland, Oregon: Timber Press, 2001pp. 99-103. ISBN 978-0-88192-498-5. URL: <https://www.amazon.ca/Cactus-Family-Edward-Anderson/dp/0881924989>

9. Cacti section at Princess of Wales Conservatory, Royal Botanic Gardens, Kew, London. **Video.** URL: <https://www.youtube.com/watch?v=Q8n3YeDjHh0>

10. How to grow your own cactus. **Video.** URL: <https://www.youtube.com/watch?v=6eKt4JHd4xo>

11. Hunt D., Taylor N., Charles G. (2006). *The New Cactus Lexicon*. Publisher: DH Books. Milborne Port, UK.

12. Goettsch B, Hilton-Taylor C, Cruz-Piñón G, et al. 2015. High proportion of cactus species threatened with extinction. *Nature Plants* 1: 1-7.

13. International Organization for Succulent Plant Study, Introduction: retrieved 2012-02-08 URL: <http://succulentresearch.org>

14. Rix Martyn. *The Golden Age of Botanical Art*. The University of Chicago Press, 2012. 257 p. - ISBN 978-0-226-11984-7. URL: <https://www.twirpx.com/file/1988494/>