

ПРОФЕСІЙНА ПІДГОТОВКА МАЙБУТНІХ ІНЖЕНЕРІВ-ПЕДАГОГІВ,
УЧИТЕЛІВ ФІЗИКИ ТА ТЕХНОЛОГІЙ

THE PLANT SPECIES IN KEW'S PRINCESS OF WALES CONSERVATORY

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The Princess of Wales Conservatory Kew's gardens (Fig. 1). contains ten different environments covering a range of tropical conditions and climatic zones commemorating Princess Augusto, who founded the Gardens opened by Diana, Princess of Wales, in July 1987 (Fig. 2). Diana, Princess of Wales was named the Patron of the Royal Botanic Gardens, Kew.

Thus, the aim of our work was to investigate the presented flora at the Princess of Wales Conservatory Kew's gardens in London.



The aim may be achieved through the completion of the following tasks: 1) to analyze the theoretical material on the topic; 2) to get information on the introduced plants; 3) to describe ones [1; 2; 4; 7; 8].

At the Princess of Wales Conservatory we can explore plants from ten different climate zones including cacti (Fig. 3), orchids, carnivorous plants and the remarkable

Fig.1. Princess of Wales Conservatory Titan arum (Fig. 5), which produces one of the largest flowering structures and foulest odours in the plant kingdom. Growing plants under glass presents many challenges. Each species has particular requirements for humidity and temperature, food and light levels. They have come from complex ecosystems – some depend on fungi in the soil to access nutrients, others on insects for pollination or birds to disperse their seeds. The glasshouses of Kew provide carefully managed growing spaces



Fig. 2. Diana, Princess of Wales in Kew (1987).for plants that have developed in their natural environments for millions of years [5; 9; 10].

In this, the most complex conservatory at Kew, there are ten computer-controlled climatic zones under one roof.

Dry tropics. The main zone at the southern end, it represents the world's warm, arid regions. Here you can find species of agave, aloe and cacti (Fig. 3). In 1811, botanist, explorer and artist William John Burchell recorded finding a "curiously strange pebble", which he discovered was a plant that "... in colour and appearance bore the closest resemblance to the stones between which it was growing" (Fig. 4). A real desert child, lithops ("Living stone plant", "Flowering plant") favours arid or semi-arid areas that



Fig. 3. Inside Princess of Wales Conservatory.

receive less than 100–150 millimetres of rainfall per year and in temperatures that often reach between 42-45 degrees Celsius, although it is also found in more vegetated grasslands with higher rainfall. In the coastal areas of the Namib Desert, it depends on the mist to obtain moisture. Only 38 species have been identified, most being found in Namibia and South Africa and one species in Botswana. It is usually located on well-drained stony slopes and ridges strewn with small stones and mostly occurs amongst the lighter-coloured quartzites, pegmatites,



Fig. 4. Lithops from Namibia. [2017/03/17/lithops-living-stones/](https://www.gondwana-collection.com/article/2017/03/17/lithops-living-stones/).

granites, gneisses, schists or alcretes ([https://www.gondwana-collection.com/article/](https://www.gondwana-collection.com/article/2017/03/17/lithops-living-stones/)

Wet tropics (Fig. 6). The main zone in the northern end, it represents



Fig. 5. Titan arum (Amorphophallus).

ecosystems such as rainforests and mangrove swamps. *Amorphophallus titanum* (Fig. 5) produces a stench of rotting flesh to attract insects in the tropical rainforest. In 1889, Kew became the first place to experience the flowering of the titan arum [1] outside of its native Sumatra. (<https://www.kew.org/kew-gardens/attractions/princess-of-wales-conservatory>).

Carnivorous plants. Two zones devoted to carnivorous plants including pitcher plants, *Nepenthes*, and Venus flytraps, *Dionaea muscipula*.

Ferns. A tropical and a temperate zone to reflecting the needs of ferns from these two different regions.

Orchids. A hot steamy zone featuring tropical epiphytic or air-rooting varieties with showy flowers and specific adaptations to an aerial environment in the rainforest canopy. And a cooler zone for orchid species with their roots in the earth of tropical mountain regions (Fig. 7).

Significant numbers of orchids, Water lilies, cacti, lithops, carnivorous plants, and bromeliads are housed in the various zones. The



Fig. 7. Exotic orchid pond.

conservatory has an area of 4,499 square metres and replaces 26 individual houses, which by the end of the 1960s were showing considerable structural deterioration. As it is designed to minimise the amount of energy taken to run it, the cooler zones are grouped around the outside and the more tropical zones are in the central area where heat is conserved. The glass roof extends down to the ground, giving the conservatory a distinctive appearance and helping to maximise the use of the sun's energy. During the construction of the conservatory a time capsule was buried. It contains the seeds of basic crops and endangered plant species and key publications on conservation [11;12].

At last, *The Princess of Wales Conservatory* Kew's gardens is the most modern greenhouse. It's actually a cluster of ten separate spaces, each climactically-optimised for different families of plants. One moment you'll be in an arid, cacti-filled environment, the next, in a sweaty rainforest paradise.

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Fig. 6. The Amazon giant water lily. collection also extends outside the conservatory where some hardier species can be found. The conservatory has an area of 4,499 square metres and replaces 26 individual houses, which by the end of the 1960s were showing considerable structural deterioration. As it is designed to minimise the amount of energy taken to run it, the cooler zones are grouped around the outside and the more tropical zones are in the central area where heat is conserved. The glass

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