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viscosity of saliva is lower by 1,15, 1,08 and, respectively, 1,07 times compared to similar values obtained in children 5 - 6 years ($p < 0,001$).

Our detailed analysis of pH in children with different levels of caries intensity indicates that in the group of 3 - 4 years among children with low and medium levels of caries intensity, the pH value was ($6,74 \pm 0,03$) and, accordingly ($6,58 \pm 0,01$) and was higher compared with children with high and very high levels of caries intensity, in whom the value of this indicator was equal to ($6,51 \pm 0,02$) ($p < 0,001$, $p < 0,01$). We found the same tendency of pH change among children aged 5 - 6 years ($6,81 \pm 0,03$) and ($6,67 \pm 0,02$), against ($6,59 \pm 0,01$) ($p < 0,001$). In the process of pH analysis between different age groups of children it was found that among children 3 - 4 years with a high and very high level of caries intensity the pH value is 1.01 times lower compared to the value of children 5 - 6 years ($p < 0,01$). Similar data from our study were obtained by other researchers [2, 3].

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INDONESIAN ORCHID FESTIVAL 2020 AT KEW

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In February 2020, Kew Gardens' 25th annual orchid festival celebrated the incredible wildlife and vibrant culture of Indonesia – an archipelago of more than 17,804 islands, including Java ([video \[13\]](#)), Borneo ([video \[10; 54\]](#)), Sulawesi ([video \[8; 46\]](#)), Papua ([video \[30\]](#)) and Bali ([video \[4; 5; 49; 50\]](#)). Indonesia's landscape ([video \[20\]](#)) is as diverse as the flora and fauna that inhabit it, from tropical rainforests to spectacular volcanos ([Fig. 1, video \[45\]](#)).



Fig. 1. Indonesia.



Fig. 2. *Aerides odorata*.

Kew ([video \[53\]](#)) is a global leader in plant and fungal science and this year's festival is also showcase some of its ground-breaking work with collaborators in Indonesia to help identify, protect and promote the country's biodiversity. Stretching from Sumatra in the west to the island of New Guinea in the east, Kew has been working across Indonesia for many years. Working with their counterparts on the

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ground, Kew's scientists are undertaking intrepid field trips to discover new plants, aid conservation efforts, and promote sustainable development [7; 25].

There are many species of orchids in Indonesia (**Fig. 1**). Indonesia has more than 4,000 species of orchid, these are native to almost every part of the archipelago, growing at elevations from sea level (*Dendrobium striaenopsis* (**Fig. 3**) up to 3,000 meters (*Dendrobium cuthbertsonii* (**Fig. 4**) and temperatures between 8.7°C and 32°C. They are found on branches of Tamarindus trees at roadside in big cities like Jakarta, Bandung or Bogor (*Aerides odorata* (**Fig. 2**, **video [2]**) and *Rhynchostylis retusa* (**Fig. 6, 7**) to the canopy in our tropical rain forests.



Fig. 3. *Dendrobium striaenopsis*.



Fig. 4. *Dendrobium cuthbertsonii*.



Fig. 5. Blue orchid.



Fig. 6. *Rhynchostylis retusa*.



Fig. 7. *Rh. retusa* flowers.



Fig. 8. *Dendrobium tobaense*.

Today, many new species are still being found. Most of these are members of established genera (recent discovery of *Dendrobium tobaense* (**Fig. 8**, **video [12]**) in North Sumatra), but occasionally even a new genus is discovered [96].

Indonesia is a transcontinental unitary sovereign state located mainly in Southeast Asia, with some territories in Oceania (**video [27; 55]**). Situated between the Indian and Pacific oceans, it is the world's largest island country. At 1,904,569 square kilometres (735,358 square miles), Indonesia is the world's 14th largest country in terms of land area and the 7th largest in terms of combined sea and land area. With over 261 million people, it is the world's 4th most populous country as well as the most populous Austronesian and Muslim-majority country. Java, the world's most

populous island, contains more than half of the country's population. [27]. Indonesia boasts a hugely diverse range of societies and cultures with over 300 languages spoken across its many islands.

Indonesia has 17,804 islands, scattered over both sides of the equator, and with about 9,000 of them are inhabited. The largest are Java (**video [13]**), Sumatra (**video [56]**), Borneo (**video [18]**) (shared with Brunei and Malaysia), Sulawesi (**video [8]**), and New Guinea (shared with Papua New Guinea). Indonesia shares land borders with Malaysia on Borneo, Papua New Guinea on the island of New Guinea, and East Timor on the island of Timor. Indonesia shares maritime borders across narrow straits with Singapore, Malaysia, Vietnam, the Philippines, and Palau to the north, and Australia to the south.

At 4,884 metres (16,024 ft), Puncak Jaya (**video [35]**) is Indonesia's highest peak, and Lake Toba in Sumatra is the largest lake, with an area of 1,145 km² (442 sq mi). Indonesia's largest rivers are in Kalimantan and New Guinea, and include Kapuas, Barito, Mamberamo, Sepik and Mahakam; such rivers are communication and transport links between the island's river settlements [27].

Kalimantan (Borneo) (**Fig. 1, video [3; 54]**) is the richest island in numbers of species of orchids in the world. The Borneo Orchids Expedition [**video [10; 18 from 5.57min]**] focuses on visiting four locations to explore Borneo's amazing diversity of orchids; the Bako National Park (home to lowland heathforest orchids), Mount Kinabalu (for highland and ultrahighland orchids), Mulu National Park (for lowland rainforest, limestone growing and highland orchids) and Mount Trus Madi (for spectacular mossy cloud forests dripping with highland orchids). Although orchids are central to this expedition, the itinerary is balanced with many of Borneo's other wildlife highlights, including a plethora of carnivorous pitcher plants, proboscis monkeys, vast caves, canoe trips through lowland rainforest and, with luck, open

Rafflesia and *Amorphophallus* blooms (**video [56]**).

Sumatra has 986 species of orchids. Java more than 971. Sulawesi (Celebes) unrecorded (**video [32]**). Redfern's Sulawesi Orchids expedition explores the exuberant orchids and extremely rich plant diversity of this remarkable Indonesian island. In addition to remarkable endemic orchids, we will encounter spectacular pitcher plants, experience some of the island's extraordinary tribal history and indulge in an array of fantastic local cuisine. This expedition offers excellent opportunities to observe and photograph Sulawesi's iconic traditional cultures and many of the island's most spectacular animals, birds, and plants, but especially orchids and carnivorous pitcher plants.

123 species of orchids found in Maluku (Moluccas) at the eastern part of Indonesia and the Province of Papua (West New Guinea [**video 40; 33**]) has more than 1000, mainly *Dendrobium* and *Bulbophyllum*. New Guinea – one of the last great wildernesses on the planet – to explore a little-known range of mountains in search of the lost species. Along the way, we witness New Guinea's extraordinary cultural heritage, as well as amazing ant-plants, orchids and many species of little-known *Nepenthes*, and finally rediscover the lost species (**video [40]**).

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Most of these orchids can be seen at Cibodas and Bogor Botanical Gardens in West Java (**video [9]**). Bogor Botanical Garden (s'Lands Plantentuin te Buitenzorg) is one of the oldest and most celebrated of Asia's botanical gardens. This site contains some pictures of famous Indonesian orchid species like *Vanda* (**video [34]**, **Fig. 9**), *Phalaenopsis* (**video [19]**, **Fig. 10**), *Phapiopedilum* (**video [48]**, **Fig. 11**), *Dendrobium* (**Fig. 8**) and other popular genera like *Coelogyne* (**Video [31]**,



Fig. 9. *Vanda*.



Fig. 10. *Phalaenopsis*.



Fig. 11. *Phapiopedilum*.

Fig. 12), *Cymbidium* (**Fig. 13, 14**) or *Aerides* (**Fig. 2**), that have been used extensively in the production of an incredible number of hybrids.



Fig. 12. *Coelogyne*.



Fig. 13. *Cymbidium*. **Fig. 14.** *Cym. Satsuma Beach*.



The Indonesian blue orchid (**Fig. 5**) is one of the 5,000 colourful orchids and hundreds of other tropical plants in the Indonesia-themed Orchid Festival, inside the Prince of Wales Conservatory at the Royal Botanic Gardens in Kew [24].

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The orchids are located in the Princess of Wales Conservatory (**Fig. 15**). Over 5000 orchids hailing from the archipelago were on display in the Princess of Wales Conservatory, taking the form of flower arches, floral walls, and even sculptures of Indonesian wildlife. The centrepiece this year was a volcano, a nod to the geology of Indonesia (see **video [53]**).



Fig. 15. The Princess of Wales Conservatory.

Stepping into the Princess of Wales Conservatory (**Fig. 15**), visitors found themselves transported to an entrancing paradise evoking some of the sights, smells and sounds of Indonesia. To capture a glimpse of the wonders of this vast region, the orchid festival at Kew Gardens [23; 24; 41] was an immersive journey through the different zones of the glasshouse, where visitors found spectacularly beautiful orchid displays which each represent an aspect of Indonesian wildlife and culture (**video [6; 14; 21; 22; 51;52]**) [67], **Fig. 16, 17, 18**.

An erupting volcano, created from orchids formed a dramatic central pond display; Indonesia has over 100 active volcanos. As Indonesia has over 100 active volcanoes, organisers made an elaborate pond display of an erupting volcano made up of only orchids (**Fig. 19**). Bright orange orangutans (**Fig. 20**), a crouching tiger (**Fig. 21**) and a rhinoceros all made from flowers were hidden around the conservatory, representing wildlife from Java, Borneo, Sulawesi and some of the other 17,000 islands which make up Indonesia. The island of Sumatra is the only place we can find the infamous Titan Arum, *Amorphophallus titanum*, otherwise known as the 'corpse flower' thanks to the appalling smell of rotting flesh it produces when in bloom [12; 60], see **video [1; 56]**.

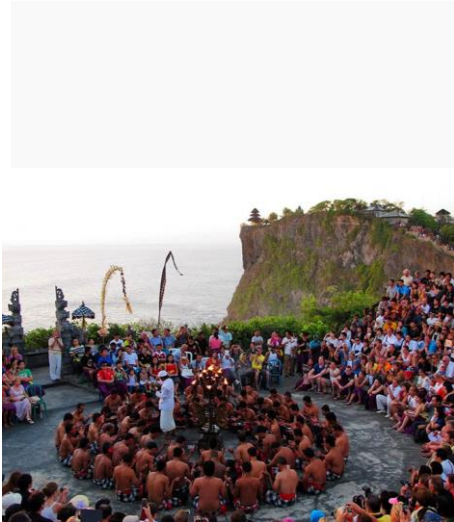


Fig. 16. Kecak Dance.



Fig. 17. Traditional Balinese Dance.



Fig. 18. Jauk dance.



Fig. 19. An erupting volcano.



Fig. 20. Orangutans.



Fig. 21. A crouching tiger.

Other programme highlights also included 'Orchids: After Hours', gamelan performances, traditional dancing, climate talks and cooking demos.

Elsewhere, an archway made up of hundreds of carnivorous pitcher plants (**Fig. 21, 22**) [25; 29], see video [16; 40].

Thus, The Kew Orchid Festival is an annual event hosted by the Royal Botanic Gardens, Kew, which is dedicated to the study and conservation of plants and fungi [23]. A celebration of plant and wildlife diversity from all over the world, it aims to showcase the natural beauty of the Earth's flora and fauna, promote the wonders of nature, and inspire everyone to do their part in the preservation of our planet's ecological balance.



Fig. 22. An archway of orchids.



Fig. 23. An archway of carnivorous pitcher plants.

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