One of the most beautiful of the many “must visit” places in Japan is the Ryukyu Archipelago. These islands are an absolute treasure trove of cultural, scenic and environmental discoveries, and the local people are known for their warmth and welcoming nature. Ikebana International is delighted to be able to host the 2017 World Convention in Okinawa, and I look forward to welcoming those of you who will be joining us then.
Those who are interested in flowers are generally interested in the environment. In many cultures, flowers and birds go together, and so, too, in my case. As well as being the Honorary President of Ikebana International, I am also the Honorary President of BirdLife International, a worldwide conservation partnership based in Cambridge, UK, and representing approximately 120 countries or territories. In this article, I would like to introduce you some of the birds of Okinawa Island as well as the other islands in the Ryukyu Archipelago and, in so doing, to give you a sense of the rich ecosystem of the area.

One Archipelago, Six Island Groups

The Ryukyu Archipelago is a chain of islands that stretches southwest in an arc from Kyushu to Chinese Taiwan. Also called the Nansei Islands, the archipelago consists of over 100 islands. Administratively, the island groups of Osumi, Tokara and Amami are part of Kagoshima Prefecture, whilst the island groups of Okinawa, Sakishima (consisting of Miyako and Yaeyama Islands), Yonaguni and Daito are part of Okinawa Prefecture. However, both in terms of environment and in terms of ethnicity and culture, the grouping does not sit well. In the first instance, the geological boundary is the Tokara Strait, which lies in between Tokara and Amami Islands, and in the second instance, the native population of Amami is ethnically and culturally Ryukyuan, as, together with the area which is now Okinawa Prefecture, it was part of the Ryukyu Kingdom from the 15th to the 19th century. To make matters more confusing, Okinawa is the name of a prefecture, of an island group and of the main island, so in this article I will try to specify to which it is that I am referring in each instance.

Two Endangered Species

With the exception of Daito Islands to the east, the islands of the Ryukyu Archipelago used to be connected with the continent. As it separated and the various islands of the archipelago were formed, many species, including different bird species, evolved. The best-known of these birds is the Okinawa Rail (Hypotaenidia okinawae, formerly Gallirallus okinawae) discovered in 1981 in Yambaru (Kunigami-gun), in the northern quarter of Okinawa Island. The natural forests of Yambaru are dominated by an evergreen oak, Castanopsis sieboldii, and are home to many endemic and endangered species, two of which are birds.

The Okinawa Rail is around 30cm in length, very short-tailed, and has long, strong legs.
making it a powerful runner. The back is a sombre dark olive-brown, but the black face and underparts, barred with white, and the red bill and legs, make it a very distinctive and attractive bird. It also has a very loud call, and often one hears it but does not see it although one knows that it is moving about in the vegetation. It is classified as Endangered as there is only a single, small population in a small range on just one island. It has suffered from loss of forest and from introduced predators, in particular the mongoose. In 1910, seventeen Javan Mongoose (Herpestes javanicus) were released in an attempt to combat a native venomous snake called Habu (Trimeresurus flavoviridis), but by the time the Okinawa Rail was discovered, in 1981, the mongoose had increased to an estimated 30,000 and were negatively impacting other species. The various indigenous species on Okinawa Island evolved and adapted over millions of years to an environment in which there were no terrestrial predators, so this invasive alien species has also become a problem for lizards, frogs and insects that are endemic to the island. The Ministry
of the Environment has worked with scientists and NGOs and initiated projects to control and capture the mongoose. As a result, the Okinawa Rail population has recovered somewhat and is now estimated at 1,700 individuals, up from 1,000.

The other endemic bird species in Yambaru is the Okinawa Woodpecker (*Dendrocopos noguchii*, formerly *Sapheopipo noguchii*). Yambaru is the only region in Japan that has more than one endemic bird species. This woodpecker has a single tiny declining population which is threatened by continued loss of mature forest to logging and development, and is classified as Critically Endangered. It is medium-sized, measuring about 31cm in length, and generally a deep brown with white spots on the wings. The crown of the male is dark red while that of the female is blackish-brown. There is an extraordinary difference in the foraging niches of males and females. Although we find that they both forage on dead and live trunks, the males have also adapted to feeding on the ground on soil-dwelling arthropods, as well as berries, seeds, acorns and other nuts. The estimated population...
komadori), both of which are also found on a few other Ryukyu islands. Of these, the Amami Woodcock is very rare in Yambaru, and, although more common in Amami, it is still classified as Vulnerable as it has a limited range and is susceptible to habitat loss, degradation and introduced predators. Although the Ryukyu Robin is a resident bird and very much a part of the dawn chorus in the Yambaru region, it has a small and declining range, and finds itself classified as Near Threatened for the same reasons.

Yambaru is a region with an extremely distinctive biota, but its diversity has been diminished by logging, dam construction, development, and the introduction of invasive alien species. So prompt measures are needed to prevent the degradation of this rich environment in order to save it for future generations to experience.

Interesting Residents
Some of the other birds that one finds in Okinawa may not be so threatened but they are still very interesting. First, the Ryukyu Green-pigeon (Treron permagnus), a resident in the broad-leaved evergreen woodlands of the Ryukyu Archipelago. Until quite recently this lovely bird was believed to be the northern form of the Whistling Green Pigeon (Treron formosae), but it is now recognised as a separate species, only found in the Ryukyu Islands. Officially, it is not a threatened species, but some experts have commented on the decline in numbers.

The Pacific Swallow (Hirundo tahitica) is also a resident species and breeds south of Amami Island. The Barn Swallow (Hirundo rustica) that

A Unique Biota
Species diversity in Yambaru forests is possibly highest among all Japanese forests. The region has a unique biota, and this may have contributed in a large way towards the evolution of many endemic species.

Yambaru is also home to some near-endemic species such as the Amami Woodcock (Scolopax mira) and the Ryukyu Robin (Erithacus

is 300 individuals and we are delighted that the number is on a slight increase.
breeds everywhere else in Japan is a migrant in this area. Compared to the Barn Swallow, the Pacific Swallow has a shorter, less-forked tail and no dark-blue breast band.

The Brown Hawk-owl (Ninox scutulata) is a summer visitor to other parts of Japan, but in Okinawa Prefecture, it is a resident bird. The owl in the photo was nesting in a tree by the local school and had become a little bit of a school mascot.

The Ruddy Kingfisher (Halcyon coromanda) ranges across east and Southeast Asia. It is a migrant, arriving in mid-April and departing towards the end of September. It has a distinctive and quite attractive call that signifies the start of summer for some locals. The Okinawan subspecies has an overall more purple tinge, which is not evident in Ruddy Kingfishers that one sees further north in Japan.

Okinawa Island lends itself to high species diversity and evolution of endemic species by being separated from the continent by a large expanse of water and by being above a certain size. This can be seen, not only in the number of endemic birds, but in other species as well. For example, of the 35 cicada species in Japan, 19 are to be found in Okinawa Island, and 7 of them are endemics, including the Ryukyu Aburazemi (Graptopsaltria bimaculata). The Ryukyu Archipelago is home to almost half of the various amphibian and reptile species found in Japan, and many of them are endemic to Okinawa Island. The rare and attractive Ryukyu Black-breasted Leaf Turtle (Geoemyda japonica) occurs only in primary or dense secondary forests and is threatened by deforestation within its own habitat. The population is badly declining and the turtle is listed as Endangered. There is an urgent necessity to secure and preserve its habitat.

**Southern Residents and Summer Visitors**

Moving further south to another group of islands in the archipelago, I would like to introduce one bird in particular, the Ryukyu Crested Serpent-eagle (Spilornis cheela perplexus). This is a medium-sized bird of prey that occurs on Ishigaki and Iriomote in the Yaeyama Islands, the remotest part of Japan from the main island. This is the northernmost distribution for this species. There is a resident population of approximately 100 individuals on each island. As the name suggests, these eagles have long feathers on the back of the head that, when raised, give them a crested appearance. They have a wide range across Asia and show much variation therein, as a consequence of which they are divided into many subspecies; the birds of the Yaeyama Islands are one such subspecies. Their diet consists of snakes, frogs, and lizards. The Crested Serpent-eagle is so much a part of their culture that the Yaeyama people have a song about it, which they sing on New Year’s Day and at festive occasions.

The archipelago has both high islands and coral islands, as well as a rich sea surrounding it. As a result, they are visited by seabirds as well, and I would like to introduce 3 species of tern: first of all, the Brown Noddy (Anous stolidus), then the Roseate Tern (Sterna dougallii), and finally the Black-naped Tern (Sterna sumatrana). They are all summer visitors, and they breed on the small rocky, coral, or sandy offshore islands in the area.
Darker Shades
Many bird species in the Ryukyu Archipelago may also be seen in other parts of Japan, but the interesting thing is that, on close inspection, they look different. Even allowing for individual differences and the effects of sunlight, birders agree that bird species which breed on both the main Japanese islands and the Ryukyu Archipelago are darker on the Ryukyus, almost as if they are suntanned. The Japanese Pygmy Woodpecker (*Picoides kizuki*, formerly *Dendrocopos kizuki*) is one such example.

Island Vulnerability
As we look at this wonderful archipelago, let us give thought to the character of islands. Islands act as “defences” against the influences of processes that occur on continents. This happens in all areas, not just biology and ecology, but also in human cultures. The insularity creates a uniqueness of evolution, but at the same time a vulnerability, in that they become defenceless when continental forces do eventually arrive. The more we choose to exploit the uniqueness of the environment or culture to serve our ends, the more we risk losing it. It is important to strike a good balance between economic development and preservation/conservation.

For the Future
My late husband was a great lover of all things Okinawan, but he insisted that our three daughters knew the history of the Ryukyu Kingdom and of the period before and after the Battle of Okinawa in which one in every four Okinawans lost his or her life. We also made sure that the children joined us in remembering those
of all nationalities who had so tragically lost their lives in Okinawa during the last war. As you all know, Ikebana International was founded in 1956 by the late Ellen Gordon Allen in the hope that flowers would build bridges of friendship between nations, uniting the world through our mutual love of nature and enjoyment of ikebana. With that in mind, I strongly feel that it is particularly befitting that this World Convention should take place in Okinawa, the location of the last battle of the Pacific War.

The Ryukyu Archipelago is a beautiful place, and while giving thought to the tragic moments in her history, perhaps we might bask in the glory of her natural beauty, and ponder anew. Wars never solve anything. But, if we have the energy to battle, might it not be for environmental conservation to protect the earth’s rich and intricate ecosystem? The battle would not just be on behalf of the birds and the flowers that you see in the wild. The battle would be for the future of mankind.

Photographs taken by Her Imperial Highness Princess Takamado unless otherwise stated

Note: As there is no globally accepted taxonomic list, BirdLife International maintains its own taxonomic checklist with the aim of providing a globally consistent taxonomic standard. The scientific and English names used in this article are based on this Checklist v8.0 (October 2015) current version. For further details, please refer to http://birdlife.org/datazone/species/taxonomy.html