AROUND THE WORLD IN 103 DAYS

by Peter Scott

THIS account of our travels has been divided into a preliminary description of the whole journey followed by a more detailed description of the various species of Anatidae we encountered, told largely by direct quotation from diaries written at the time. For this Annual Report it seemed more appropriate to group these extracts from the diaries under the headings of the species concerned, which will also make them easier for reference than a chronological presentation.

This, then, is the story. Last winter my wife and I set out on a journey round the world which had a threefold objective. In my capacity as President of the International Yacht Racing Union I was required to attend the Olympic Games at Melbourne and to be Chairman of the International Jury for the Yachting events. Such a journey obviously presented an excellent opportunity of seeing and filming the wild life of Australia, and those other countries which lay on our route, for presentation on television; and finally here was a chance to see a number of species of ducks which I had never seen before.

When I left England I had never seen alive 17 of the 116 full species of Anatidae which are known to science, and when I got back only 9 remained to be seen (of which 2 are in any case almost certainly extinct).[1]

Accompanying us on our journey was the brilliant young cinematographer, Charles Lagus—cameraman of the Zoo Quest television series. His films, together with some of mine, were later shown on B.B.C. television under the title 'Faraway Look'. The three of us travelled almost entirely by air and were seldom more than two or three days in the same place. We flew by way of Amsterdam, Rome, Basrah, Karachi, Rangoon, Bangkok and Singapore to Darwin, Australia.

AUSTRALIA

Near Darwin we were, for a week, in the hands of Harry Frith, a biologist working for the Commonwealth Scientific and Industrial Research Organisa-

[1] Crested or Korean Shelduck and Auckland Island Merganser are probably extinct; the remaining seven species are: Freckled Duck of Australia, Bernier's Teal of Madagascar, Stellers and Spectacled Eiders from Arctic breeding grounds (both to be seen in Alaska), Chinese and Brazilian Mergansers, and the Masked Duck of the West Indies and tropical South America.

tion on the Magpie Goose with particular reference to its conflict with rice-growing interests. Harry had been to Slimbridge, and later accompanied us on a rocket-netting trip in Scotland two years before.

You will read in the diary about the Magpie Goose and the various ducks we found there, including the enchanting Green Pygmy Goose. Besides these we saw a great profusion of tropical birds from the Brolga or Native Companion Crane downwards; there were storks, ibises, herons, egrets, spoonbills, the bustard or Plains Turkey, cockatoos both black and white, parakeets of great brilliance, White-breasted Sea Eagles, Kookaburras, roller, bee-eater, the cuckoo which is called the 'Swamp Pheasant', the Pee-wee or Magpie Lark, which is neither a lark nor a magpie, nor for that matter a peewit, but is related to the wood-shrikes. We identified 62 species of birds in five days, and in addition we saw buffalos and dingos (both probably introduced by primitive man), wallabies, flying foxes, magnificent reptiles—including a fine big monitor called a Race-horse Goanna, which was common, and the superb Frilly Lizard, *Chlamydosaurus kingi*, 2½ feet long, which runs on its hind legs only and spreads a huge orange and black frill to discourage its enemies. There were fascinating smaller animals—mud-skippers, frogs, spiders and insects—'doo-doos' we called them, using the East African word.

Frilly Lizard (*Chlamydosaurus kingi*)

From Darwin we flew to Perth, where our plans were laid by Vincent Serventy mainly around two excursions to see ducks, one before and one after a lecture engagement in the city. It was here that we saw five new species of ducks, four of them on one day within half an hour: Musk Duck, Blue-bill, Australian White-eye and Australian Shoveler. The fifth, the Pink-eared Duck, we saw during a delightful trip in which we camped under a huge gum tree on a sand spit beside the Dumbleyung River.

From Melbourne we went to various places which were within reach during the week-ends of the Olympic Games period. One was spent, with Harry Frith again, on an ambitious journey to the interior of New South Wales. We flew to Canberra and then motored past Wagga-Wagga to Griffith. The object here was to get better films and make closer study of the Pink-eared Duck and to see the amazing Mallee Fowl. In the event we saw the Pink-ears well, including our first newly hatched ducklings of this species, the downy pattern, of

Male Mallee Hen (*Leipoa ocellata*)

course, being of great significance in the evolutionary relationships of ducks.

The Mallee Hen is one of the Megapodes which incubate their eggs in mounds of sand and rotting vegetation. For four years Harry Frith has been making a study of this species. In a square mile of mallee (eucalyptus scrub) he had recorded 58 nests, of which about 17 were in use each year. He had used special instruments for recording nest temperatures and had watched and filmed the birds. The Mallee Hen's year consists of a short period of courtship and nest building (usually on an existing mound). The male does all the building, then digs a hole in the top into which the female lays one egg which is covered up and, in the early part of the season, incubated by the heat of the decaying organic matter. A week later she lays another egg, and so on throughout the winter and early spring, until more than 20 eggs have been laid. Apart from laying the eggs she has nothing further to do with the nest or the young. The male alone controls the temperature, thrusting his head into the nest and probably using his tongue as a thermometer. According to his findings he either heaps sand on to the 10-foot diameter nest mound or scratches it off. There is an intricate interaction between the heat of the decaying mallee leaves and twigs and the heat of the sun. Towards the end of six months' laying season almost all the heat is derived from the sun, as the vegetable heat is expended and the midsummer sun is so hot. The chicks hatch in mid-heap and somehow or other fight their way to the surface. They are entirely independent and neither parent pays any attention to them. They have to rear themselves separately, as only one hatches each week. The principal enemy of the Mallee Hen is the European Fox, reputedly introduced into Australia for fox-hunting, and now immensely numerous. It digs up and eats the eggs. In the course of studying the Mallee Hen Harry had found a bird, Joe, which was exceptionally tame and confiding. He took us to its nest and, sure enough, there was Joe, a much larger bird than I had expected—as big as a female turkey. Harry sat on the edge of the nest throwing sand up into the air. The red dust floated down in cascades which were too much for Joe. He advanced to the nest, looked over the edge of the hole which Harry had dug, turned his back and started to throw the sand back in again. He was 5 feet away from Harry as he worked; I was 10 feet away and in full view as I filmed. Charles Lagus was 30 feet away, also filming, and my wife was taking stills. Nothing seemed to upset Joe.

It was at Griffith that we saw wild budgerigars (amongst seven species of parrots and parrakeets), Red and Blue Kangaroos, a Blue-tongued Skink, and the very numerous Shingle-back or Bob-tailed Skink (*Trachysaurus rugosus*).

On another week-end we went to Flinders Island in the Bass Strait between Tasmania and Australia. Here, as the guests of Dr Dom Serventy, we stayed on tiny Fisher Island, headquarters of the nine-year-old research into the biology

of the Mutton Bird or Short-tailed Shearwater, *Puffinus tenuirostris*. One of the principal objects of this visit was to see Cape Barren (Cereopsis) Geese in their native haunts. We also saw Musk Ducks living at sea—an unexpected habitat. Besides, there were nesting Fairy Penguins, White-faced Petrels, Caspian Terns, Black Oyster-catchers, Silver and Pacific Gulls and passing Australian Pelicans; and we caught and filmed a fair-sized octopus.

Koala

From Melbourne we also went to Philip Island, which lies about 70 miles south of the city, in order to see wild Koala Bears, with which the eucalyptus trees were full. I climbed up beside one female with baby and she allowed me to stroke her and scratch her head. On the same evening at dusk we watched the Little Blue Penguins filing up a special track from the beach to their nesting burrows in the sand dunes. The little birds march up in a sort of procession watched by 50 or 60 people every night standing behind a special fence and shining torches on them, to which the penguins pay practically no attention.

When the Olympic Games were over we flew to Sydney, where Sir Edward Hallstrom showed us the Taronga Park Zoo and made plans for us to visit his properties in New Guinea. Dr Alan Keast took us to the National Park to see and film the Satin Bower Bird at its bower.

NEW GUINEA

On 12 December we flew northward to New Guinea, where we spent a week in the Wahgi Valley as Sir Edward Hallstrom's guests. We were most hospitably entertained by Mr and Mrs Frank Pemble-Smith, and spent much of our time with the distinguished zoologist and animal collector, Fred Shaw-Mayer, who probably knows more about New Guinea's fauna than any other living man. In the Fauna Section at Nodugl—half zoo, half sanctuary—of which he is in charge, we saw an incomparable collection of Birds of Paradise and the rare Salvadori's Ducks which have been successfully bred in captivity there. Unfortunately, though we spent several days hunting, we never saw the ducks in the

wild state. They were 'the ones which got away'. But we did see the New Guinea race of the Grey Teal, *Anas gibberifrons gibberifrons*, which has only once before been recorded from that area. Commoner were Australian Black Ducks, *Anas superciliosa.*

Because the natives kill great quantities of birds to supply feathers for their magnificent head-dresses, Birds of Paradise are not common, although we had a good view of a wild male Salvadori's Red Bird, *Paradisa apoda salvadorii.*

Tree Kangaroos and Phalangers and the rare Wild Dog were the most attractive of the New Guinea mammals we saw. The lizards, frogs, spiders and insects were as remarkable as I had always imagined they might be in this naturalist's paradise.

Western civilisation only reached the Wahgi Valley about twenty years ago, and the impressive development of villages and towns has been achieved with only two lines of communication with the outside world—radio and aircraft—although a temperamental road, subject to frequent landslides, has just been built. Our departure was delayed by an unsuccessful and alarming attempt to fly over a range of mountains enveloped in a cumulo-nimbus cloud system of vast proportions. However, we got through next morning, returning the same day by way of Lae and Port Moresby to Cairns in Queensland.

THE BARRIER REEF

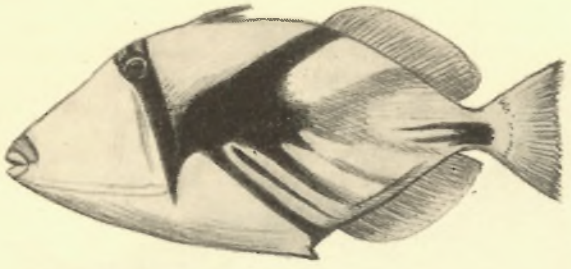
We had only three days in which to see something of the Barrier Reef. On each of those days we swam for long periods with mask and snorkel, which neither Philippa nor I had ever done before. In my diary at the time I wrote:

'23–25 December. For part of these three days I have been in a new world. Nothing I have done in Natural History in all my life has stirred me quite so sharply as my first experience of skin-diving on a coral reef. Konrad Lorenz said when I saw him in Bavaria in September that this was one thing I must do before I died—and now I have done it, or rather started to do it. The dramatic threshold which is crossed as soon as one puts one's face-mask below the surface is, to a naturalist, nothing less than staggering in its impact. Much has been written already about the scarcely explored new continent of the ocean; I have read these descriptions in the books of Cousteau and Diolé, and yet I was unprepared for the visionary revelation when I first saw the real thing.

'I must try and describe it chronologically and in detail, but the effect on my mind is still rather kaleidoscopic and bewildering. First it should be explained that the adventure falls into four chapters and an appendix—and, by the way, I have no hesitation in using the word adventure, for this type of swimming cannot fail to be high adventure, nothing less, for any naturalist; indeed for any imaginative person who has never done it before. The four chapters were four separate dives, two on the first day and one on each of the next two. The appendix is two visits to the Underwater Observatory on Green Island. As befits such a sequence, each chapter was a little bit more exciting and more moving than the one before. The final effect was overwhelming, so that in spite of trials and tribulations with ill-designed equipment, and intense discomforts arising therefrom, I cannot see how I can escape from its lure. I am already an addict and I have not yet used an aqualung.'

From then on the diary is full of drawings of fish, although a part of Christmas Eve was spent among the huge colony of Noddy, Sooty and Crested Terns at a

small coral island called Michaelmas Cay. Christmas Day was spent mostly in the water at Green Island discovering the common fish of the corals, the glorious little bright blue damsel fish which rejoice in the generic name of *Abudefduf* and the black and white *Dascyllus*, the pompous-looking Pig-snout Trigger Fish with his complicated pattern of black and white and orange and bright blue, the superb Anemone Fish of the genus *Amphiprion* (there were three species here and the commonest was also the most brilliant—*A. percula*, a goldfish with pale blue bands), the ridiculous Razorfish which always swim standing on their heads and are always in pairs, and many species of Butterfly Fish of the genus *Chaetodon*. The numbers and diversity of the animal life in these supremely beautiful coral gardens was perpetually breathtaking. It was a day of enchantment.

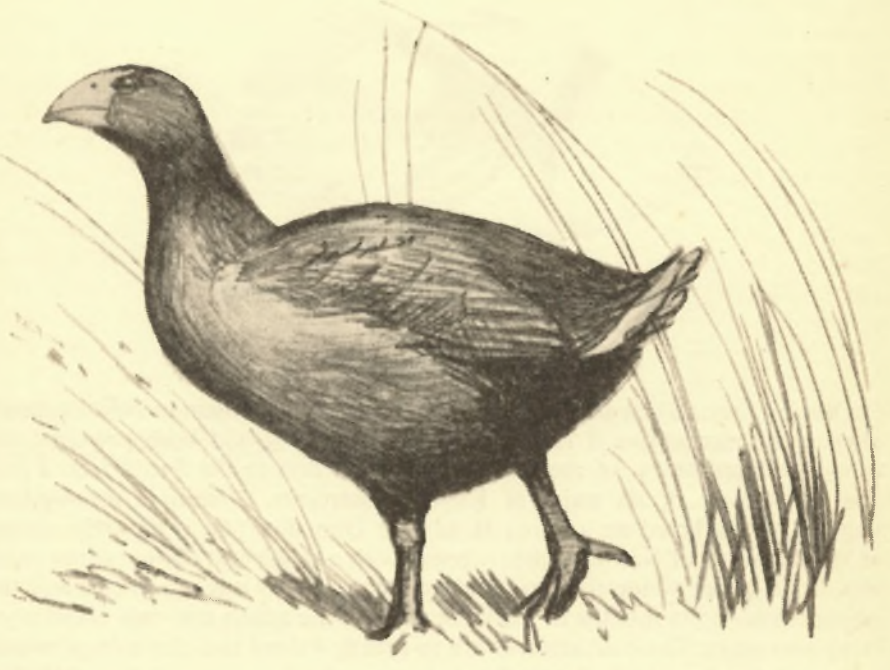


Pig-snout Trigger Fish (*Ballistapus aculeatus*)

NEW ZEALAND

On Boxing Day we flew to Sydney and next day in a jet stream to New Zealand. There a comprehensive if rather exhausting itinerary had been prepared for us by the Department of the Interior. We went first to the South Island and saw the colony of six pairs of Royal Albatrosses, *Diomedea epomophora sanfordi*, which breed on Taiaroa Head near Dunedin. This is the only colony on the mainland of New Zealand; it began with a single nest about twenty years ago. It has taken a long time to build up, because only one egg is laid and the young takes eleven months to leave the nest, so the adults can only breed once every two years. These albatrosses are so greatly valued that the colony, which is surrounded by a barbed-wire fence, is protected by a special Act of Parliament. Stan Sharpe, the warden, took Charles Lagus and me to one nest, which I described thus in my diary: '. . . The cart track ran horizontally round the steep face of the hill, and slap in the middle of it, in a clearing of the tall summer grass, sat an Albatross (unexpectedly huge if one has not seen albatrosses at close quarters before). It was a male and it looked slightly embarassed; it snapped its bill with a resonant rattle and a little grunt. Stan took its egg from under it, we looked at it (very small for the size of the bird), and he put it back again. The bird was quite extraordinarily steady and did not seem to be at all resentful of us. So close were we that we could see the feather lice wandering among the feathers of the head. We filmed him extensively, including large close-ups of his friendly eye and tube nostrils, and fetched the tape-recorder to record his rattle. . . . Stan Sharpe had been looking after the colony for six years. He knew a very great deal about his albatrosses. He told us that a large part of the diet is squids, which have been identified by the eye lenses cast up in pellets by the birds round the nest. . . .'

On the following day I was taken to see the Takahe (*Notornis mantelli*) by Dr Gordon Williams, biologist of the Department of the Interior, who is studying it, and who had visited Slimbridge to show us films of it a few years before. We flew into Takahe Valley in a Grumman Wigeon amphibian piloted by Jim Monk, and landed on Lake Orbell (named after the ornithologist who rediscovered it about ten years ago after a long search). It was pouring with rain, and continued to do so almost without stopping for the whole of the four hours we were there. We were soaked through and excessively cold, but we saw one Takahe among the tussocks of Snow Grass, heard two more and found the hatched nest containing the eggshell and membrane. I also saw my first Blue Ducks (described on p. 104).



Takahe (*Notornis mantelli*)

Permission for this excursion had only been granted as a very special favour at the last moment, and in return for such advice on Takahe conservation as I might be able to give. Unfortunately neither my wife nor Charles Lagus were permitted to go with me. This was sad, though the reluctance of the authorities to allow visitors into this last stronghold of the great flightless moorhen is fully understood, and I was grateful indeed that I was allowed to go at all. There are possibly not many more than 60 Takahe now living. Higher estimates are considered to have been over-optimistic. The habitat is strictly limited, so no great increase can be expected, except perhaps by artificial means in captivity.

At Lake Ellesmere, near Christchurch, with Gordon Williams and Ken Myers, we saw huge flocks of Australian Black Swans, an introduced bird which has been even more successful in New Zealand than in its native land. On one day we saw more than 20,000, which may have been as little as a quarter of the

Black Swans

population of this fifteen-mile-long lagoon. We also saw a flock of between 3000 and 4000 moulting Canada Geese (and some New Zealand Shovelers).

The converted wartime Harbour Defence M.L., now the Motor Yacht *Alert*, was put at our disposal in the Cook Strait (between the North and South Islands of New Zealand) by its owner, Alex Black, and with us for a two-day cruise were a party of half a dozen, including that distinguished ornithologist, Dr Bob Falla of the Dominion Museum, Wellington. On a small island, one of the Trios, we found almost every Blue Penguin or Shearwater burrow occupied by a Tuatara (*Sphenodon punctatus*). These reptiles are not related to any of the living forms of lizard, and form a sort of living link with the Dinosaurs (the Coelocanth fish is analogous). The largest we found, sharing a burrow with a moulting adult Penguin, was about 2½ feet long. They are sturdy greenish grey animals with a fringe of soft white spines, vertical pupils to their eyes like a cat and a breakable tail which regenerates. Apparently they breed, and grow, very slowly, but nevertheless there must have been several thousands on this island. They survive only on this and a small number of other islands round New Zealand, but nowhere on the mainland. On the Trios, too, were some huge crickets, *Hemideina thoracica*, known by the Maori name Weta. The females were 4 inches long, glossy yellowish brown, and the males slightly smaller with a head nearly an inch long and 5-inch antennae.

From the *Alert* we landed at Kapiti Island and saw the rare parrot known as the Kaka, *Nestor meridionalis*. Here in the evening I gave a lecture to an 'ornithological camp' which was interrupted by the call of a wild Kiwi nearby.

At this camp we met Dr Graham Turbott (then Director of the Auckland Museum), an old friend who has visited Slimbridge, and who was to show us Brown Ducks at Waipu in the North Island, and Archie Blackburn, who was to take us to see and to film Blue Ducks near Gisborne, also in the North Island. How we saw these two species is described on pp. 104–112. Graham Turbott and Roy Cavanagh of the Department of the Interior (who was later to send us a fine selection of live New Zealand Ducks for the Trust) were with us

Tuatara (*Sphenodon punctatus*)

on an excursion to Cape Kidnappers to see the fine Gannet colony there, and took us to Rotorua, where we saw 'Black Teal' (the New Zealand Scaup) and were shown the hot springs by guide Rangi. At Waipu, on a sand-bar at the mouth of the river, we found three newly hatched young of the New Zealand Dotterel, *Charadrius obscurus*, attended by their parents, one of whom performed a spectacular distraction display. This is one of the world's rare birds—a pale-coloured sand plover—of which probably only 300 exist.

Kaka (*Nestor meridionalis*)

FIJI

From Auckland we flew north across the Pacific to Fiji. For a week we stayed in one place—a unique hotel at Korolevu on the south coast of the main island, Viti Levu. My diary for Thursday 17 January begins: 'We went out before breakfast to bathe, 25 yards from our thatched burré, and as soon as I put my mask under the water I realised that our week would be a success. There were hosts of little fish of all shapes and sizes and colours. The brilliant blue one in which the male has orange fins which I had seen at Michaelmas Cay was quite common; there were multi-coloured Wrasse everywhere; it was a scene of amazing beauty and diversity. At breakfast I drew all the different fish I could remember seeing and it came to 22 species. Once more, as on the Barrier Reef, I had the sudden joy of revelation. This new world, which can so easily be seen just by putting on a mask and dipping one's eyes below the surface, is a paradise for anyone with an interest in Natural History. Immediately I began to see the discoveries in the fields of animal behaviour, of speciation, of genetics, which are so obviously there for the taking—offering themselves to the observant fish-watcher. It would be interesting enough without the beauty, but to an artist the colour and form and movement were breathtaking, so that my cup was full. . . .'

We swam for about five hours each day and were able to distinguish 108 different species of fish, to say nothing of the crabs, shrimps, molluscs, sea urchins, starfish, worms, sea cucumbers, anemones and corals. One night after dinner I swam with a waterproof torch and found that all the fish were quite different. The common fishes of the daylight were nowhere to be seen, but a number of nocturnal species had taken their place. The Fijians of Korolevu sang 'Isa Lei' for us when we left after an enchanted week.

HAWAII

We left Fiji on the evening of Wednesday 23 January and flew for 13 hours, arriving in Honolulu on the morning of Wednesday 23 January, a peculiar phenomenon associated with the crossing of the International Date-line. Our main object while in Hawaii was to make contact with those responsible for the future of the Ne-ne (Hawaiian Goose). In Honolulu we were looked after by Paul Breese, Director of the excellent Zoo and Chairman of an Advisory Committee which keeps watch over the status of the bird. We saw some of the yearling Ne-ne which he then had at the Zoo. Then we flew 200 miles to Hilo, on the big island of Hawaii, to be the guests of Mr Herbert Shipman, who perhaps more than any other man is responsible for the turn in the tide of the Ne-ne population. We visited Pohakuloa, where Ne-ne have been bred in captivity in covered pens ever since the Trust sent its Curator, John Yealland, to Hawaii to rear the first goslings there in 1950. The birds are now in the care of Dave Woodside, and we saw several broods of goslings with white Muscovy Duck foster-mothers. We drew up a list of the Ne-ne known to be alive at that date—26 January 1957. The total was 103.[1]

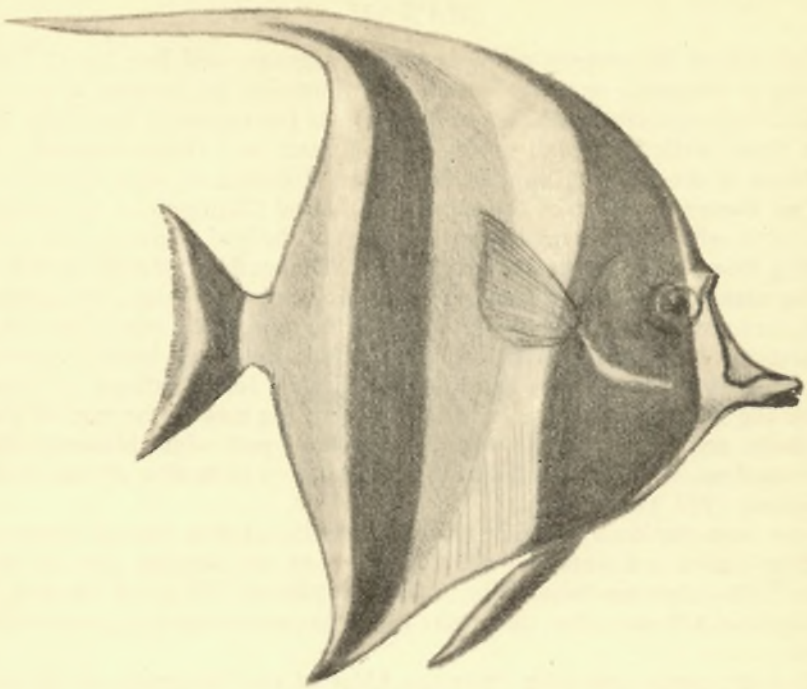
There were further eggs being incubated at Pohakuloa, and of course the breeding season in Europe was still to come. (As this account goes to press, 1 May 1958—there are believed to be between 140 and 150 living Ne-ne in the world, about 100 more than there were when the species was at its lowest ebb in 1949.)

We spent much time with Professor Elder of the University of Missouri, who was in the middle of an intensive study of the Ne-ne. Bill Elder was an old friend whom I had first met at Delta in Canada, and who subsequently brought his fluoroscope equipment to Europe and did important work with it during the rocket-netting season of 1953. Bill took us on a strenuous day walking across the *a-a*, a particularly rough and jagged type of lava which covers the slopes of the great volcano Mauna Loa, in an area where he had found Ne-ne nesting. He showed us a recently hatched nest of a pair he had been studying, under a fallen tree bole in a *kipuka*—an island of vegetation in the surrounding sea of

Yellow Tang (*Zebrasoma flavescens*)

a-a. Although we did not succeed in seeing a wild Ne-ne, we did see an Iiwi, and two other species of the native bird family, the Drepanidae.

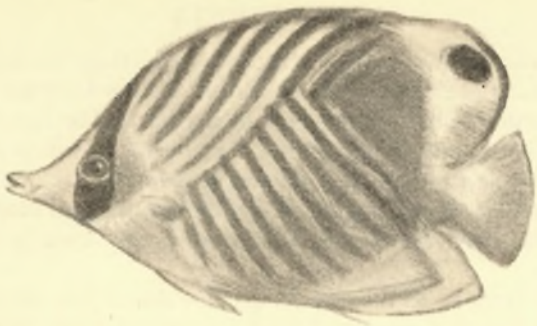
[1] A more up-to-date table, drawn up in September 1957, appears on p. 113.



Moorish Idol (*Zanclus canescens*)

While in Hawaii we had a chance to swim with masks and flippers on the Kona coast, where the fishes were as beautiful and varied as they had been in Fiji though the water was much colder. Many of the species were the same, but some of the most numerous were new to us and the relative abundance of the familiar ones was quite different. In Kealakakua Bay, beneath the monument which marks the spot where Captain Cook was killed, Charles and Phil and I met a very large grouper (probably *Epinephelus thompsoni*) which we reckoned was almost exactly the same length as Phil and probably weighed about 250 lb. He was curious and swam up round me in quite a friendly fashion.

But even more exciting to me were the great shoals of slightly apologetic yellow Tang, *Zebrasoma flavescens*, like little yellow plates on edge, the gaudy Moorish Idols, *Zanclus canescens*, black and white and yellow and pale blue and looking vaguely like big Angel Fish, the complacent, even pontifical-looking Trigger Fishes, *Melichthys buniva* and *Ballistes vidua*, which progress by purposefully waving their dorsal and anal fins, the slightly deprecating Convict Tang, *Acanthurus sandvicensis*, and his near relative, *Acanthurus olivaceus*, with a great flash of orange outlined in black on his flanks. And the Box Fish, and the Parrot Fish, and the little Wrasse, and above all the great variety of Butterfly Fish (Chaetodonts), which are mostly yellow and always go about in pairs. We found more than a dozen species of the genus *Chaetodon* in Hawaii, all apparently living in the same kind of habitat, on the same kind of food, and at the same depth; in fact in the same ecological niche. For a while I puzzled over the evolutionary origin of this, and then I thought that it could



Chaetodon setifer

all be explained by some large-scale disaster such as a glacial period which had overtaken the ancestral *Chaetodon*. In various isolated and sheltered spots fishes had survived and varied over a long period to form a number of species. Then conditions had improved and the different species had been able to spread themselves once more through the warm seas. But, being full species by now, they had remained distinct. The patterns which differentiate the species are striking and conspicuous, and the fishes are evidently monogamous and form devoted pairs. And so, on one small patch of coral you may see pairs of half-a-dozen species of Butterfly Fish.

I wrote in my diary of that day: '. . . I had been in the water 40 minutes the first time and 50 minutes the second, which with 40 minutes or so in Kailua harbour in the morning made 2 hours and 10 minutes of swimming—and what swimming! Now that some of the fishes are becoming quite familiar—old friends almost—one is inclined to glance at them almost without noticing them; at least this would be so if I did not find myself returning to the amazing beauty of the underwater scene. And so it remains unbelievable, out-of-this-world, a unique and glorious experience of which I could never tire. I find myself still echoing Konrad Lorenz's injunction to me in Bavaria, "This you must do before you die". Every naturalist, every zoologist—but more than that every single person with an eye for beauty and an inquiring mind should—no, must—look down through a face-mask at a tropical coral reef. . . .'

Back in Honolulu, Paul Breese arranged for us to meet Dr Vernon Brock, head of the Fish and Wildlife Service of the Territory. We had an interesting discussion over lunch, at which we were joined by Dick Woodworth, who is responsible for the Pohakuloa Project at headquarters in Honolulu. One of the great problems is how to release hand-reared birds successfully into the wild range, and I outlined my scheme for a Ne-ne Park, a large vermin-proof enclosure in which pinioned Ne-ne could be kept, instead of the covered pens at Pohakuloa (which is outside the wild range and in unsuitable country). It is only by allowing pinioned parents to raise full-winged young that I believe the wild population can be successfully reinforced.

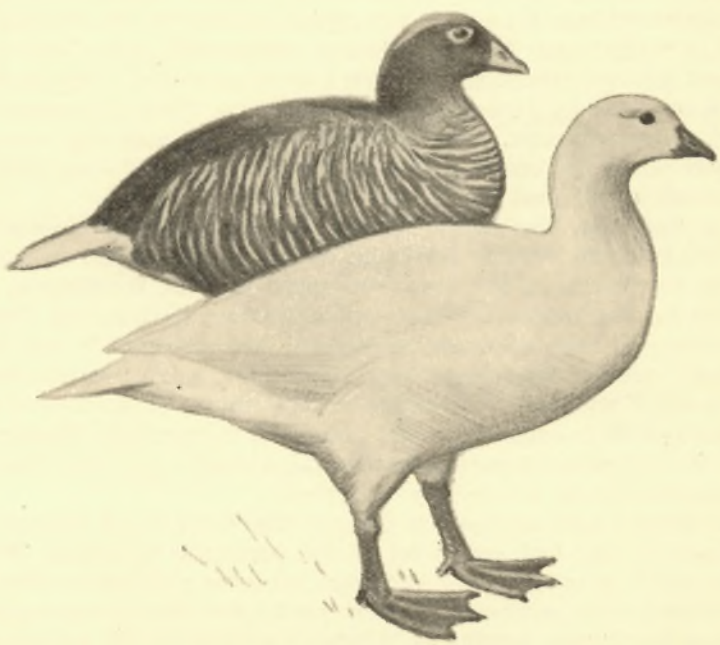
Vernon Brock's main interest is in fish, and after lunch we all went swimming with aqualungs—my first experience of this admirable invention. We dived in a fairly shallow pool just off the Aquarium, but it was sufficient to demonstrate the possibilities of the equipment. Vernon was kind enough to spend some time in the Aquarium Library helping me to identify some of the fish we had seen on the Barrier Reef and in Fiji and on the Kona Coast of Hawaii.

CALIFORNIA

On Sunday 3 February we arrived at Los Angeles from Honolulu to spend a few days with our old friend Jean Delacour, who is Director of the County Museum. The garden of his home is most beautiful and he has some delightful aviaries. He took us to see Bill Parsonson's aviaries in which he has a pair of Kelp Geese which he has kept in good health for more than a year, although there are long periods when the grass is dry and brown and inedible to a goose. He also had three Peruvian Ruddy Ducks—the only ones in captivity in the world.

Jean Delacour took us to the San Diego Zoo which was crammed with wild Pintails, and on the way there and back we passed a bay with Black Brant, 300 strong, feeding on the mud close to the road. He took us to the fabulous Marineland where the tame Dolphins play with such evident enjoyment, and he accompanied us to Merced in the San Joachim Valley, where Dave Marshall (whose article on the Pacific Flyway appears on p. 128) had come south from the Malheur Refuge especially to show us the Ross's Geese which he had been studying during the previous year. In the winter of 1955–56 there had been an estimated world population of 12,000 Ross's Geese, but this winter of 1956–57 had only disclosed a maximum of 8000. Dave was not sure whether he had lost a significant flock somewhere or whether the population had fallen by that amount. In view of the bad summer in the Arctic in 1956 it seems not unlikely that the Ross's numbers had sharply fallen, especially as, in spite of the complete protection afforded to them, several thousand Ross's are known to be shot annually in error for Lesser Snow Geese, which are not protected.

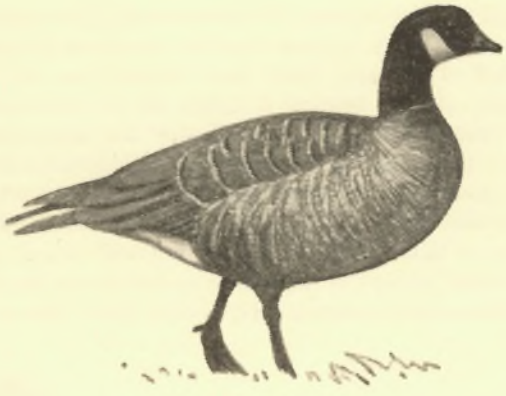
We saw 1100 Ross's Geese in one flock and 400 in another; we saw a great concourse of 6000 geese of which the majority were Cackling, but there were



Kelp Goose (*Chloephaga h. hybrida*)

also Taverner's Canada Geese, White-fronts, Lesser Snow and Ross's Geese; and we confirmed what I already knew, that for profusion and variety of Anatidae there can be few places in the world to equal the Sacramento and San Joachim Valleys of California in midwinter.

And so to New York for a lecture under the auspices of the Audubon Society, and then back home again on 14 February after 103 days of travel.



Cackling Goose (*B. c. minima*)