

Canary Islands Marine Biological Expedition 1965 — a Review by

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One of the most satisfactory British Scientific underwater expeditions of the past few years was the visit to the Canary Island of Lanzarote, organised by the Heriot Sub-Aqua Club of Edinburgh. A preliminary report and Volume One of the full report have been published, and two more volumes, at least, are promised. They are of special value to organisations hoping or preparing to undertake similar expeditions, because they not only contain scientific descriptions of the work done but give a comprehensive account of the work involved in mounting such expeditions.

PERSONNEL

The majority of the personnel were members of the Heriot Sub-Aqua group, which was formed for the purpose of training pupils of George Heriot's School in underwater diving methods and the application of these in the study of the underwater world. The group now has three categories of membership:—present senior pupils of the school, former pupils, and honorary members. These last are persons who because of their qualifications and interests have been able to assist in training of the group's members. Over the past few years the group has developed underwater survey techniques which include methods of specimen sampling and underwater photography.

The Canary Islands were chosen because they were likely to be under the influence of waters from the North Atlantic, the Mediterranean and North West Africa, tropical West Africa and the West Indies. The main problem was that of transporting the team and more than two and a half tons of stores to the Canaries.

FINANCIAL SUPPORT

Considerable financial and material assistance was necessary. The relatively unique nature of the expedition, combining the experiment of using young people alongside qualified biologists and the use of underwater diving techniques in the study of undersea life led eventually to the expedition receiving the recognition of UNESCO as well as obtaining the support of the Royal Geographical Society and the Duke of Edinburgh. With this impressive backing the expedition obtained further financial support and considerable material assistance from industry.

The party arrived at Arrecife (Lanzarote) on July 30th, 1965 and left on August 20th. Although the group had intended using a camp as its main base, a house was offered in Arrieta, a small fishing village in the north of the island. It was surrounded on three sides by the sea and was gladly accepted. The largest room in the house was set aside as a laboratory and equipment store, and the others used for living accommodation. In order to reach survey areas on the island, a microbus was hired with a driver. He not only knew all the problems of the roads but was also a keen spearfisherman and proved invaluable in suggesting good diving areas. Frequently his catches were of use in aug-



Radio telephone and dictaphone were used intensively

menting other observations which were made.

Lanzarote is a volcanic island. Although there has not been an eruption for nearly 200 years the ground is so hot in a region in the SW corner of the island that it is possible to cook food quite readily without any other source of heat.

The greater part of the population gains its livelihood from the sea. An industry which presents an impressive sight is that of salt production from salt water. Windmills pump up the water into huge pans where it is left to evaporate in the sun. The fishing industry has been increased in recent years by building a large fish drying plant occupying several acres. The latest introduction to the island and probably the most important step in increasing its prosperity is the building of a desalination plant near Arrecife. This was built by an American firm, and produces about 30 litres of fresh water a second. It is coupled to a power plant providing electricity for the island.

The expedition studied a very considerable part of the coastline and even went to two nearby islets. The water was quite warm at the surface, about 70 degrees F, but cold enough at depth to make suits necessary for long duration diving. Fish abounded round the island ranging from small fish such as the beautifully coloured Demoiselles to the larger wrasse and groupers. Other common fish included the moray and conger eels which were encountered on most dives, usually in rock crevices because of the danger from the moray eel, but no accidents occurred. The sting ray (*Trygon pastinaca*) was very common on the sea bed and some interesting photographs showing its efficient methods of hiding in the sand were taken.

In addition to fish many interesting species were recorded, a high percentage of which were Mediterranean species. But there was not the same abundance of life as the group had found during their previous explorations of Scottish waters. This they ascribe to the absence of a sheltering jungle of the large brown oar-weeds (*Laminaria*). The most conspicuous species in the sub-littoral zone was the long-spined black sea urchin (*Centrostephenus longispinus*) which was very common below 25-30 feet.

Generally speaking the various regions studied were very similar in their flora and fauna, but there were definite variations in the distribution of algae, mainly correlated differences in the degree of exposure of the different shores to wave action.

UNDERWATER CAVES INVESTIGATED

During underwater studies an overhang was frequently found at about 25-40 feet down. This was often cut into caves. The roofs and walls of the caves were encrusted by several species of calcareous red algae. Several fish were recorded in the dark regions.

One of the most interesting studies was the survey of an underground salt-water lake a few miles north of the village of Arrieta. In the past it was reported that a blind white crab, *Munidopsis polymorpha*, which normally has only been found at depths of over 5000 feet in the ocean, was living here. The group found the crab and took several specimens. They also photographed it in its habitat. Apart from this crab a few other species were recorded in the lake including a top-shell, a hermit crab, and a strange creature which appeared to be able to burrow into the rock and then protrude a long proboscis. It has still not been completely identified but is probably a *Bonellia* species.

Finds on the shore zone were very poor in comparison with those in British waters. The upper shore is usually barren or with occasional pools containing hermit crabs and shore crabs. The richest area was the lower region where several algae were found. The commonest animal was the snakelocks anemone. Others included a number of small crabs and small rock fish.

BIRDS and STARS

Although underwater research was the main work of the expedition, ornithological and astronomical studies were also made. A number of rare birds were found and photographs were taken of flamingoes. This is believed to be the first time that these birds have been positively recorded on the island. It may be that several of the 'rare' birds of passage and have not been present when the few ornithologists have visited the island.

Astronomical work was carried out under difficulties. The nights are long and the skies are clear especially on the upper slopes, but the biological work in the daytime in the exhausting heat made it possible for members of the team to stay up all night. Many meteors were seen and a number of earth satellites were recorded with the naked eye. The report clearly admits that none of the observations were of significant scientific value.

So it was the underwater world that the real work was done and a complete collection of specimens was brought back to Edinburgh. Most have now been identified, and the final report is expected in about a year. The reports are edited by Dr. C. S. Johnson, B.Sc., M.I.Biol., who was the leader of the expedition. Volume One * of the report is a most carefully prepared document with excellent sketches and sketch maps. It not only covers the scientific work but also the practical side of the expedition including the handling of stores etc. Apart from its value as a scientific record in its own right it should prove of the greatest value to any other team thinking of projecting studies in the island of Lanzarote.

* Price 10/- from Underwater World Library