

# FREE DIVING IN INDIAN WATERS

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## BIO-DATA

The authors Mr. Nagappan Nayar and Mr. S. Madhavan graduated from the Presidency College, Madras, in 1948 and later took their research degrees from the Madras University Zoology Laboratory in 1951.

They have been doing Fisheries Research work for the past 20 years and have brought out many Scientific Publications. Both of them are expert Aqua-lung diving Scientists, a unique distinction they hold, being the first in our country to undertake this type of work. They were trained under a scheme sponsored by the F. A. O. in 1959. In the following article they plead for more scientists to come forward to get trained in the aqua-lung diving so that vast unexplored areas of our country's inshore sea-bottom can be surveyed and studied.

The story of man's adventure into the sea and his dreams of exploring the underwater world is as old as time itself and a glance through the pages of history will show the various attempts made by him to surmount the difficulties in remaining under water for considerable periods. For instance the Greeks are said to have used reeds to breathe while swimming underwater. Alexander's army contained a detachment of well-trained divers with simple breathing devices for swimming under the water surface into the enemy's harbours and making surprise attacks. Aristotle also refers to simple underwater breathing gear in use in his times. Surely all these experiments and writings kindled

the imagination of modern scientists in their efforts to conquer the problems posed by the underwater world. The lure of the sea, with its limitless resources of food, minerals, hidden treasures, sunken fortunes, historical remains and variety of animal lives had been irresistible to the indomitable spirit of mankind and a challenge to the scientists. Strangely, the outbreak of the world war II ushered in an era of underwater science and technology. By trials, experience and sacrifice, scientists succeeded in penetrating even the abyssal depths of the oceans, to see for themselves what the underwater world has in store for them. The phenomenal success of the scientists in the exploration

of space and planets has been matched by their outstanding achievements in underwater exploration. It is now commonplace to read about aqua-lung divers underwater scooters of different types and designs, diving saucers and bathyscaphes. Even underwater laboratories are designed and constructed wherein scientists, men and women, go and spend their time for days together and carry out observations and studies. Millions of pounds worth of sunken treasures are being salvaged from ancient ship-wrecks every year. The role played by the above inventions in the field of biological and geological explorations too is important. No doubt the thrills and adventures of the underwater exploits have attracted men and women to take to diving as a sport as well, in addition to the many scientists who engage themselves in studying and photographing the animals and plants in their natural habitats.

By far the most popular and easy method of exploring the sea bottom is by the use of the aqualung developed and perfected by Jacques Cousteau and Gagnan during World War II, using compressed air diving units. This makes it possible for the diver to remain under water for considerable periods at considerable depths. The possession of the equipments is with in easy means of any organization and any person between the age of 10 to 60, male or female, can dive for years without experiencing more than a scratch from a scrape against a rock provided certain basic rules and principles are meticulously followed while diving. In almost all advanced countries organized diving clubs exist in many cities which popularize the activities by helping the aspirants with information, instructions, guidance and offering training facilities.

Now let us examine the status of the diving work in India. In our country only 'skin diving' had been in vogue from time immemorial. By 'skin diving' is meant diving with only a breath of air in the lungs. This has its own limitation and at best a person can remain under water for not more than 2 minutes, after which he has to surface. This type of diving is practised throughout the world for different purposes, like sport fishing, sponge fishing, oyster fishing etc., Here in India, only a few prefer this profession in order to earn their livelihood. In particular, the fishermen, about 1000 in strength, along the south east coast of India, skin-dive for chanks every year and occasionally for pearl oysters as well, when a fishery comes up. But unlike the skin divers in other countries, our divers do not usually make use of face masks or flippers which may be to the detriment of their increased efficiency.

Because of the intrinsic value of the aqualung diving system from the point of view of the development and exploitation of the chank and pearl fisheries and in the interest of the scientific investigations in solving the problems connected with these fisheries, the Government of India decided in 1959 to popularise aqualung diving. With the help of the F. A. O. they obtained the services of an Italian diving expert, Dr. F. B. Salvadori, to visit India on a training-cum-survey assignment. He brought with him a few sets of aqualungs and other diving accessories and started his work at Tuticorin as his headquarters. A few biologists of the C. M. F. R. I. and the Madras State Fisheries department were asked to undergo training under him in diving with aqualung and in surveying the sea bottom in the Gulf of Mannar. It came to pass that the authors

were chosen for this pioneering attempt in India and were trained by him in the use of aqualung for exploration work upto 120 feet beneath the sea surface. Since then systematic observations on the sea bottom in the Gulf of Mannar have been in progress upto this date.

Although the immediate object of the F.A.O. programme was to train a few Indian biologists in scientific survey methods using aqualung, the ultimate aim of the scheme was to create interest among all the scientists and laymen, of the growing need for taking up this branch of study and developing it all round so as to be useful in their respective fields. It also envisaged a wider plan of introducing this system for the commercial exploitation of not only pearl oyster and chank fisheries but also sponge fishing, sea weed harvesting, faunal and floral surveys, expeditions and animal behaviour studies all over our coastal areas where ample scope exists.

At present the diving equipments and other accessories are not manufactured in India and we are dependent on imported goods. This is also difficult in view of the present foreign exchange regulations. Foreign collaboration in manufacturing these equipments should be arranged until such time when we are in a position to start our own manufacturing centres.

A five-year programme to train and impart basic knowledge to interested scientists and fishermen in aqualung diving should be chalked out and implemented. While the fishermen trainees may be mostly drawn from Tamil Nadu and Kerala, the core of scientists can be selected at the University level and biologists and geologists at the national level. A scheme to supply the diving equipments at subsidised rates to the fishermen trained, will make the training more meaningful as the poor fishermen cannot afford to invest capital in purchasing them.

Servicing facilities for diving equipments should also be arranged side by side with the organization of diving clubs in important coastal cities for technical advice and training facilities on a permanent basis. Government should also come forward to safeguard the interests of the diving scientists and fishermen by enacting special rules for payment of compensation and for insurance coverage in the event of accidents resulting in loss while engaged in diving.

We can then look forward to a new generation of seekers engaged in unravelling the mysteries of the undersea world, far from the cities, far from the noisy present day life.