

follow the tradition at second-hand of what it believes to be the practice in the Bank of England. There K however, much more to it. Not that the Reserve Bank gloats over other people's discomfiture or enjoys keeping the public guessing and does not mind the long queue of anxious parents who want to know the prospects of getting their children educated abroad or of intending visitors to foreign countries. As is to be expected, it rationalises: *These Indian People . . . they cannot be trusted.* Once travel regulations are made known or the rules regarding foreign studies are published, people will

think up ways and means of getting round the rules and thus it will be impossible to enforce the regulations at all. On this logic, perhaps the Reserve Bank will some day suggest that the Penal Code or the Income Tax Act should also be withheld from the public and knowledge about them be restricted strictly to the judges or the Income Tax Officers concerned because if the public came to know the rules, they might try legal evasion or to take undue advantage of them!

This puts altogether a new complexion on the Reserve Bank's per-

sistent and determined refusal to establish any kind of public relations. Is it not high time for the Bank to see sense and try to remove unnecessary vexation to the public and cut down at the same time avoidable extra work for its own staff by letting the people know and bringing out small brochures setting out clearly for 'general understanding' what are the rules in regard to foreign travel and foreign studies, for example, even if regulations regarding foreign collaboration are considered too technical and too specialised to be of little interest to the general public ?

Exploring the Indian Ocean

WHAT has drawn attention to the International Indian Ocean Expedition in this country is the inauguration of the first scientific cruise of the I N S Kistna as part of the Indian programme of the Expedition. The idea of the 25-nation International Expedition was conceived in 1958 by the Unesco and the Special Committee on Oceanographic Research of the international Council of Scientific Unions. Ships from the U S, U S S R and France had completed a number of exploratory expeditions to the Indian Ocean even by the end of 1960. A Soviet ship Vityaz carried out two scientific expeditions during 1959-61. In studying the relief of the ocean floor, Soviet scientists discovered several hitherto unknown submarine ranges and mountains. Explorations showed that rock of volcanic origin occupied a large part of the bed of the ocean. In the southern part of the ocean, Soviet geologists detected massive accumulations of iron and manganese ores containing up to 0.5 per cent of nickel cobalt and other rare materials.

International cooperation in oceanographic research was stimulated under the impetus of the International Geophysical Year (1957-58). U S, British and Norwegian ships worked jointly in the northwestern Atlantic ocean while a number of nations joined together to carry out a Polar survey. At a conference convened at the initiative of the Unesco in the Hague in July 1960 scientists and Government representatives from 34 countries agreed to place the whole subject of

oceanography on an international footing. It was recommended that the Unesco set up a permanent intergovernmental Oceanographic Commission.

The Indian Ocean Expedition is the largest and most comprehensive oceanographic exploration ever undertaken. The Indian ocean was chosen for the joint effort both because so little is known about it and because it is a natural model of a complete ocean system extending from polar to tropical waters. The Indian ocean — some 28 million square miles, equal to a little less than one-third of the world's total sea area — offers two unique features of special interest to oceanographers. First, there is a predictable 180-degree reversal of winds twice a year. Second, it is the only major ocean which is open only at one end; the land mass of Asia encloses it on the north. At this end it is fed by the great rivers of the Middle-East flowing into the Arabian Sea and the rivers of India, Pakistan and Burma which flow into the upper part of the Bay of Bengal.

The purpose of the Expedition is to conduct basic research in physical and chemical oceanography, meteorology, marine biology, geophysics and submarine geology. One of the things the Expedition hopes to find out is whether there is any equatorial counter-current in the Indian ocean similar to that found deep in the Atlantic and Pacific oceans. Besides advancing the frontiers of basic knowledge, the expedition expects to yield "unusual

benefits to the heavily populated protein-deficient nations on the ocean's perimeter" through its study of marine biology.

Expedition ships have been working in the Indian ocean since 1958, but the major part of the Expedition's programme will be executed in 1963 and 1964. Ships and scientists participating in the Expedition will devote at least half of their time to the "basic programme" drawn up by the Special Committee on Oceanographic Research of the International Council of Scientific Unions and the rest to independent investigations. Information gathered by any ship in its work on the "basic programme" will be transmitted to all other participants.

Will India come to know something of her marine resources from her participation in the Indian Ocean Expedition? The question is much more than of academic interest for several reasons. India, with a coastline of 3,500 miles has the poorest record of marine fishing with the result that the country very largely foregoes a rich source of protein food which it can ill afford in view of its general food deficiency. Moreover, if marine resource could be adequately tapped, it could bring in sizeable foreign exchange earnings to make good, if not to make a net substantial addition to its dwindling agricultural exports.

What arouses expectations in this regard is the composition of the fleet which India has contributed — an Indian Navy frigate, Kistna which has been equipped with a

variety of oceanographic equipments for this purpose, and three other vessels, small ones, which are for research in marine biology alone, primarily exploration of fishery resources. One of these small vessels is the Vamna, gifted by the Norwegian Foundation for operation in the Kerala coast and attached to the Central Marine Fisheries Department. Though small, it is an excellently equipped research vessel and is ideally suited for fishery work. The other two, though not so well equipped, are also fit for similar work, the Ban-

gada and the Conch, the latter from the Marine Biology Department of the Travancore University. Since the ships and scientists participating in the expedition are expected to devote only half their time to the basic programme and are presumably free to devote the rest of their time to independent investigation, could not the services of the Indian participants be utilised for a proper survey of the fishing resources of the Indian ocean and of the Indian coastal seas? That it could be so utilised, however, does not appear to be a feasible proposition judging

from the very strenuous programme that the participants have to carry out and the exhaustive nature of the survey. But better knowledge gained of the Indian ocean will probably make the task of a more specialised and limited survey later on somewhat easier. At least that is the hope. Anyway, the present expedition can be no substitute for a proper survey of our marine fishery resources which is now long overdue. It will have to be undertaken quite independently of this expedition.

Weekly Notes

Paradip as a Major Port

TO visualise an all-weather port at Paradip requires the imagination of Bijou Patnaik, the Chief Minister of Orissa. Paradip achieved the status of a minor port only as recently as in 1958, and today it is nothing more than a roadstead port with ships anchoring approximately 4 to 5 miles from the coast. The only traffic from Paradip is the export of about 40,000 tons of iron ore from the Tomka mines which have an output of over 350,000 tons, the bulk of which is exported through Calcutta due to lack of transport facilities at and to Paradip. The site at which the new port is to be built is today only a point on the beach surrounded by thick jungle with no mode of communication with the interior except by boats down the Mahanadi river. Last year, only three ships called at Paradip as it was closed for half the season. Ore can be moved through Paradip only in fair weather. Fresh water or storea are not available at the port and even labour has to be 'imported'.

The idea of constructing a proper, all-weather port out of this anchorage has had a long and chequered history. Ever since 1951, when a French team first recommended that the estuary of the Mahanadi would be the best site in Orissa for a port, there have been sporadic investigations to determine the site and size of the port. Finally, the British firm of Randall Palmer and Tritton were asked to carry out a

final survey and draw up a design for the port. The choosing of a suitable site is vital as, in common with other beaches on the east coast, this area is beset with the problem of littoral sand drifts from the south. If a wrong point is chosen, the entire mouth of the port could shoal up in no time which would make maintenance expensive, if not impossible.

As for the design of the port, there were two alternatives: to build a coastal harbour of the Madras-type, or to build an inland port of the type in Vizagapatnam. The latter, which has been chosen, is technically very much superior, but it is also very much more expensive. It is reported that Rs 35 crores have been earmarked for Paradip. The Board of Trade has, however, estimated the cost at a minimum of Rs 55 crores rising ultimately to Rs 85 crores out of which Rs 19 crores will be in foreign exchange. Actually, even these figures are probably gross underestimates, for the task is not simply one of building a port and a complementary transport system, but of building a whole township to support the activities of a port at a site where at the moment the population consists mainly of Mahanadi crocodiles.

However, apparently neither the magnitude of the investment nor the formidable technical problems will deter the Chief Minister of Orissa from forcing his scheme through. The Plan of building a

port between Vizag and Calcutta is basically sound. Orissa has some of the largest deposits of iron ore, and it is a considerable handicap to the country's export effort that there is no port in the area. Exports have to move through Calcutta or Vizagapatnam both of which are about 450 miles away from the mines. The proposed site for Paradip is, however, only 200 miles away. In a highly competitive international market like iron ore, extra cost of transportation can be a major handicap and, therefore, a port nearer the mines will be very welcome. Besides, the advantages of an all-weather port need not be limited only to export of ore. Other commodities could start moving once the port is set up.

The Paradip project is being taken into hand in the teeth of much opposition from certain Ministries in the Centre. The Railway Ministry, for instance, had for a long time opposed the scheme and had, in fact, made it absolutely clear that they were not prepared to lay any track to Paradip in the Third Plan. The Orissa Chief Minister's reply was that he would build roads to move the ore. But a port cannot function without the support of the Railways, especially if the principal commodity to be transported is iron ore which moves cheapest in bulk, by rail. It is, therefore, most important that the development of Paradip should be matched by concurrent development of mines and railways,