REPORT TO THE RESIDENT COMMISSIONER IN SAIPAN

VISIT TO MAUG ISLAND OF THE LINDBLAD EXPLORER ON AUGUST 13TH 1976

General

Our ship spent just eight hours of one day anchored in the crater of this partly submerged volcano, but with eighty pairs of eyes this was sufficient to make a preliminary survey of the ecology.

The habitat consists of three steep islands of old eroded ash and lava, the remnants of a caldera surrounding a deep lagoon about 1.2 kms in diameter. The cliffs on the inside slope are for the most part bare and precipitous, but the outer slopes (particularly that of East Island) are more gradual and densely vegetated. Total land area is approximately 3.25 million square metres.

Botany

The major part of all three islands is disturbed vegetation - on the eastern slope of East Island by the hand of man and elsewhere by the loose cinder surface of the land. The dominant species is the dense sword grass Miscanthus floridus which acts as a stabilizing agent permitting the growth of scattered shrubs and herbs such as Scaevola sericea, Wedelia biflora and Derris elliptica. On the lower slopes creeping Ipomoea pes-caprae and Canavalia sericea serve a similar function.

In sheltered valleys and in moister areas on relatively flat ground at the base of cliffs a more settled vegetation exists. This is composed largely of Hibiscus tiliaceus, Pandanus tectorius, Morinda citrifolia, Terminalia samoensis and Hernandia sonora.

On the summit of East Island the site of the old Japanese station is surrounded by the usual windbreak of Casuarina equisetifolia and the plantation of Cocos nucifera on the eastern slope is now invaded by Carica papaya and thickets of Portulaca oleracea. Showy patches of a Crinum lily may also have been introduced by man.

Ornithology

The steep cliffs provide perfect breeding grounds for seabirds and Sula dactylatra, Sula leucogaster, Sula sula, Anous stolidus, Anous tenuirostris and Gygis alba all make good use of them. Brown Booby, Red-footed Booby and Lesser Noddy are the most common - and nests of all three species were seen to contain young almost fully-fledged, indicated a laying period some time in early or mid July. Fairy tern were less common and several were seen still sitting on a solitary e...

With thousands of Boobys in the vicinity, there was of course the usual attendant population (perhaps a hundred birds) of the Frigate Fregata minor. Two Tropicbirds (Phaethon rubricauda and P. lepturu...) were present in fairly large numbers and almost certainly breed here. Wedgetail Shearwaters (Puffinus pacificus) circled high overhead in the early morning and probably have nest burrows in the cliffs. A single Sooty Tern (Sterna fuscata) was seen some distance offshore.

The only shore birds seen were dark phase Reef Heron (Demigrette sa... migratory Turnstone (Arenaria interpres) and an unidentified Sandpip...

The Marianas race of the White-collared Kingfisher (Halcyon chloris) was fairly common on all three islands - as were very dark forms of the Micronesian Starling (Aplonis opacus).

The most exciting ornithological discovery however was the Marianas Megapode (Megapodius laperouse) which was seen on West Island, but almost certainly must occur on East Island where there would be better facilities for constructing nest mounds.

Terrestrial Biology

As far as we could determine during our short visit, there are no mammals on any of the islands - no bats and no feral rats or goats.

We saw no reptiles either, though it seems likely that there could be at least a resident skink.

Our entomological survey was very superficial - recording only three species of spider (Argiope sp. were most abundant) and a grasshopper.

Marine Biology

Reef building corals are found in extensive formations mainly on the inside of each of the sea channels between the islands. Isolated coral heads occur elsewhere singly or in small groups.

The reef chosen for detailed analysis lay on the North West side of East Island. It is approximately 200 metres long, 50 metres wide and drops away to over 10 metres in depth on the open water side where it stands on a coral sand floor with a large number of garden eels.

The coral heads are well developed, undamaged by pollutants and untouched by the predatory starfish Acanthaster planckii. There has been moderately heavy browsing by several species of Parrot Fish, particularly a Pavona sp.

The dominant coral on the reef is a branching species of Acropora (possibly A. hyacyanthus) coupled with Atropora cungata. Millepora species are also very common. Other species of secondary importance were largely representatives of the genera Favia, Porites, Polyphyllia and Tubastrea.

The coral in itself is abundant and impressive, but perhaps the best measure of its productivity as a habitat is the large number of fish species in residence on the reef.

Ichthyology

Cartilaginous Fish:

Carcharinus melanopterus	Black tipped Shark

Bony Fish:

Sardinella sp. ?sirm	Sardine
Thrissocles sp. ?buelama	Anchovy
Exocoetus volitans	Common Flying Fish
Cypselurus simus	Blue backed Flying Fish
Cypselurus poecilopterus	Spot finned Flying Fish
Cypselurus atrisignis	Red winged Flying Fish

four:

Tylosurus crocodilus	Garfish
Adyoryx caudiraculatus	Surprised Squirrel Fish
Holocentrus spiniferus	Shy Squirrel Fish
Myripristis murdjan	Black bar Soldier Fish
Bothus sp. ?pantherinus	Spotted Flounder
Aulostomus valentini	Trumpet Fish
Fistularia petimba	Flute Mouth
Cirrhitichthys falco	Spot-barred Hawkfish
Paracirrhites arcatus	Brown-eared Hawkfish
Paracirrhites forsteri	Freckled Hawkfish
Cirrhitus sp.	Black Hawkfish
Kuhlia (Dules) taeniura	Flagtail
Aethaloperca rogaa ?	Black Grouper
Epinephalus maculatus	White-spotted Grouper
Cephalopholis argus	Blue Hind
Cephalopholis urodelus	Tail-striped Hind
Variola louti	Swallow-tailed Grouper
Paramia sp. ?quinquelineata	Yellow-spot Cardinal Fish
Ostorhynchus endekataenia	Black-spot Cardinal Fish
Caranx melampygus	Blue-fin Jack
Mulloidichthys auriflamma	Yellow-lined Goatfish
Mulloidichthys samoensis	Black-spot Goatfish
Pseudupeneus trifasciatus	Three-barred Goatfish
Parupeneus bifasciatus	Two-banded Goatfish
Parupeneus cyclostomus	Yellrw Goatfish
Parupeneus sp.	Blue Goatfish
Centropyge flavissimus	Yellow Cherubfish
Centropyge bispinosus	Orange-barred Cherubfish
Pomacanthus imperator	Imperial Angel Fish
Pygoplites diacanthus	Royal Angel Fish
Chaetodon ornatissimus	Orange-lined Butterfly Fish
Chaetodon quadrimaculatus	White-spot Butterfly Fis
Chaetodon reticulatus	Grey Butterfly Fish
Chaetodon mertensii	Merten's Butterfly Fish
Chaetodon auriga	Threadfin Butterfly Fis

Five:

Chaetodon citrinellus	Lemon Butterfly Fish
Chaetodon punctato-fasciatus	Spot-banded Butterfly Fish
Forcipiger flavissimus	Long-snout Butterfly Fish
Heniochus permutatus	Short-streamered Coachman
Acanthurus pyroferus	Fiery Surgeon Fish
Acanthurus olivaceus	Orange-shouldered Surgeon Fish
Acanthurus triostegus	Convict Tang
Acanthurus glaucopareius	Golden-rimmed Surgeon Fish
Acanthurus leucopareius	Fuscous Yellow-tailed Surgeon
Acanthurus lineatus	Striped Surgeon Fish
Paracanthurus hepatus	Deep-blue Surgeon Fish
Ctenochaetus striatus	Brown-striped Surgeon Fish
Zebrasoma flavescens	Yellow Tang
Naso brevirostris	Long-horned Unicorn Fish
Naso lituratus	Smooth-head Unicorn Fish
Zanclus canescens	Moorish Idol
Kyphosus lembus	Large-tailed Chub (Drummer)
Pempheris japonica	Red Sweeper
Lutjanus kasmira	Blue-line Snapper
Lutjanus sp.	White-spot Snapper
Gnathodentex aurolineatus	Yellow-spot Bream
Monotaxis grandoculis	Big-eyed Bream
Caesio sp.	Blue-shouldered Fusilier
Paracaesio xanthurus	Yellow-backed Blue Fusilier
Plectrorhynchus schotaf	Grey Sweetlips
Abudefduf saxatilis	Common Sargeant Major
Abudefduf sordidus	Night Sargeant Major
Abudefduf imparipennis?	White Damsel Fish
Pomacentrus sp.	Yellow-faced Damsel
Pomacentrus sp.	Scarlet Damsel
Amphiprion akindynos	Cloun Fish
Dascyllus reticulatus	Reticulated Humbug
Dascyllus trimaculatus	Three-spot Humbug
Dascyllus aruanus	White-tailed Humbug
Chromis dimidiatus/margaritifer?	White-tailed Puller
Chromis sp.	Yellow-tailed Puller

Six:

Coris naimard	Clown Coris
Coris aygula	Eye spotted Coris
Halicheeres centriquadrus	Squarenet Slippery Dick
Halicheerus notopsis	Black-spot Lined Wrasse
Halichoores hoevoni	Two-spot Lined Wrasse
Labroides dimidiatus	Blue Cleaner Wrasse
Gomphosus varius	Bird Wrasse
Hemigymnus fasciatus	Banded Wrasse
Bodianus axillaris	Coral Hogfish
Bodianus sp.	White-peduncled Hogfish
Xyrichthys taeniurus	Feather Wrasse
Stethojulis albovittata	Dancer Wrasse
Pseudocheilinus hexataenia	Six-lined Wrasse
Thalassoma lutescens	Yellow Wrasse
Thalassoma quinquevittata	Five-lined Wrasse
Thalassoma sp.	Pink Ladder Wrasse
Thalassoma amblycephalus	Black and White Wrasse
Scarus capistratoides	Bullhead Parrot Fish
Scarus rubroviolaceus	Maroon Parrot Fish
Scarus sp.	White-spot Parrot Fish
Euthynnus affinis	Bonito
Crenimugil crenilabis	Mullet
Nemeleotris magnificus	White-flag Fleotris
Exallias sp.	Blenny
Aspidontus sp. ?tractus	False Cleaner
Plagiotremus tapeinosoma	Brown Parasitic B.
Plagiotremus sp. ?rhinorhynchus	Blue Parasitic Bl
Diplomus sp.	Rock-hopper Blenny
Rhinecanthus rectangulus	Black Diamond Trigger Fish
Sufflamen bursa	Dusky-tailed Trigger Fish
Sufflamen chrysoptera	Edge-tailed Trigger Fish
Melichthys niger	Black Trigger Fish
Melichthys vidua	Widow Trigger Fish
Balistapus undulatus	Waved Trigger Fish
Ostracion melagris	Yellow-spotted Box Fish

Summary

Both above and below the water, MAUG ISLAND is relatively little disturbed and worthy of close biological investigation.

More than any other island we have seen in the Marianas, it merits the designation of Protected Research Area as suggested at the meeting of the International Biological Program held in Koror, Palau in November 1968.

We heartlily recommend that such protection continue indefinitely and we urge those in authority to do everything possible to ensure that MAUG retains its character and accessibility to scientists.

We would further recommend that a restraint be placed on research there similar to that which we ourselves have exercised - which is a total embargo on the collection of specimens.

Through the skill and experience of Peter Scott (with the assistance underwater of Ron & Valerie Taylor and Soames Summerhays) we were able to identify 113 species of reef fish without touching one. The limitation of research in the initial stages at least to sight records only would do a great deal to preserve the habitats for future and more thorough exploration.

Sir Peter Scott CBE DSC LL.D
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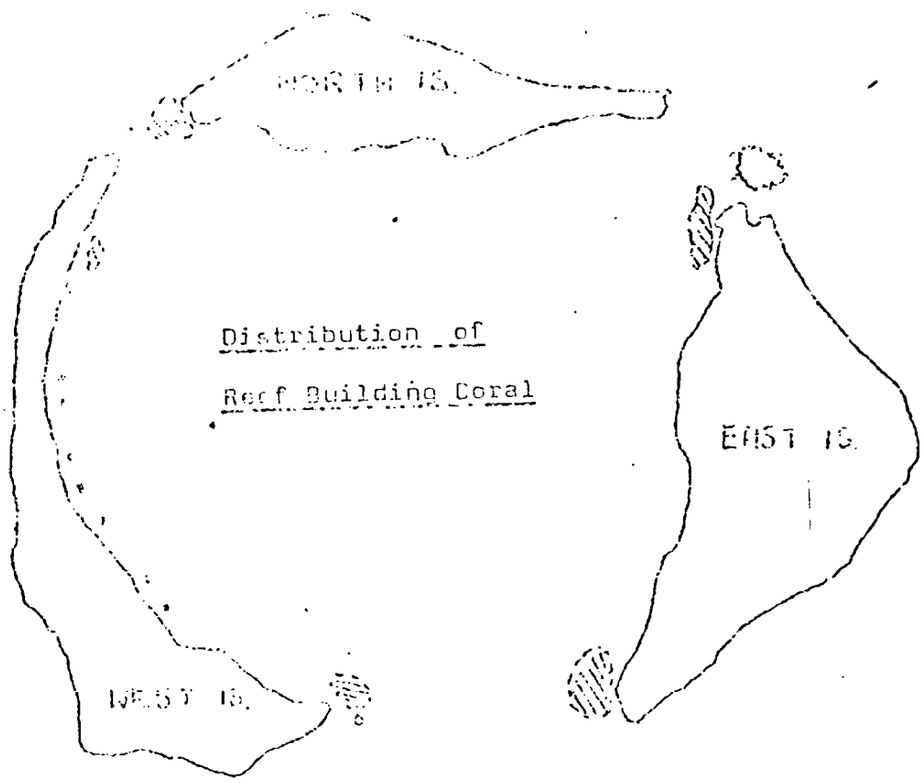
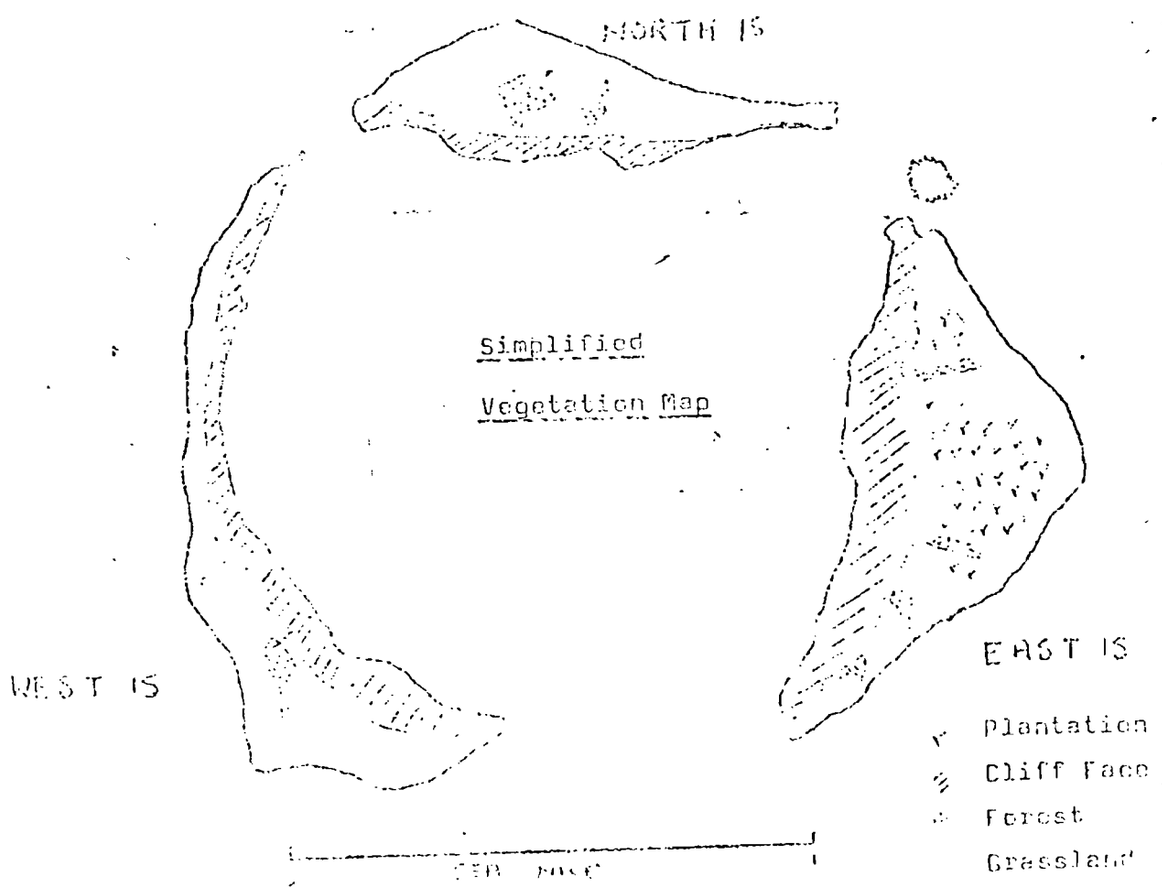
Expedition Staff of the Lindblad Explorer August 13th, 1


NORTH IS.
Distribution of
Reef Building Coral
EAST IS.
WEST IS.


NORTH IS
Simplified
Vegetation Map
WEST IS
EAST IS
Plantation
Cliff Face
Forest
Grassland