

NEWS FROM ACADEMY BAY

PLANNING

Friedemann Köster, the Director of the Charles Darwin Research Station, reports that the latter part of 1982 was dominated by a series of planning exercises. Taking advantage of a week-long visit by the Foundation's President, Peter Kramer, and with the co-operation of the National Park Service and the National Institute for Galapagos, every research and educational programme was re-examined and some 30 scientific projects were approved for 1983. Much time was also devoted to briefing a mission from the World Wildlife Fund, sent to assess the conservation work of the Station during the last ten years. The CDRS staff also collaborated in drafting a new version of the Master Plan for the Galapagos National Park, revised to meet changing circumstances and to strengthen the park service both administratively and financially.

Over and above all this, another high level commission was preparing a plan for the entire archipelago, including the one-tenth which has human settlements and lies outside the boundaries of the National Park. This commission, which has to consider the interests of settlers, tourists and armed forces as well as scientists and conservationists, is essentially a government body and the CDF is not officially represented on it. However the Darwin Station has granted leave of absence to its Deputy Director, José Villa, to serve for a year as Technical Director of the Commission. This is another of several encouraging examples of the interchange of personnel between the national and international organizations concerned with the future of the islands. Congratulations are extended to Freddy Herrera, formerly Station meteorologist, on his appointment as Governor of the Galapagos. Such developments can only go to strengthen harmonious relations and make co-operation in conservation the more effective.

A GALAPAGOS MARINE PARK

The demarcation of the land boundaries of the National Park was completed years ago but nothing has been finally decided about the surrounding seas, although the question has been under discussion since the 1960's. One reason for the delay may have been that the underwater resources were for the most part still in a pristine state, so attention was concentrated on the terrestrial species, which were in urgent need of protection. There were also administrative complications as different ministries were responsible for national parks, fisheries, defence and the law of the sea. In practice, a good deal of progress has been made and 1983 may see legal confirmation of the inclusion of a marine zone, which may well prove as fascinating as the land area of this outstanding World Heritage. Meanwhile the CDRS has built a modest marine laboratory and has added a marine biologist to its staff. Elsewhere in this issue, Gary Robinson gives his views on the form the marine park might take. It is an involved question needing a great deal more research and it should be borne in mind that the combined coastlines of the Galapagos Islands are greater than those of mainland Ecuador.

THE FERAL ANIMALS ON SANTIAGO ISLAND

Introduced species are the major conservation problem on all the islands with human settlements, and even on some others. There are no longer any human residents on Santiago (James) Island but nevertheless it has the largest population of feral animals. An estimated 100,000 goats are destroying the vegetation with the aid of some 20,000 pigs, which also dig out the nests of tortoises and turtles. It has been possible for the GNPS and CDRS to eliminate the goats on five (virtually six) of the smaller islands but Santiago has hitherto been beyond the available resources in men and money. Now that the goats on Pinta and the dogs on southern Isabela have been brought under control, a large-scale campaign to clean up Santiago is under study. Professor Bruce E. Coblentz has proposed that priority should be given to controlling the pigs rather than the goats. He argues that it would be more effective to hunt them while the goats are devastating the vegetation in which the pigs would otherwise find cover. The Frankfurt Zoological Society has generously offered its support in the first stages of what will inevitably be a long struggle in a particularly harsh terrain.

CAN THE HAWAIIAN PETREL BE SAVED?

The Dark-rumped (or Hawaiian) Petrel is in danger of extinction in both its breeding areas — the Hawaiian and Galapagos archipelagos. There is still a considerable Galapagos population but, as its breeding success is declining uncomfortably close to zero, it is only a question of time before it dies out (Noticias 35). A large pelagic bird, it is safe over the ocean during much of the year, but it nests in burrows in the moist uplands, where black rats and pigs prey on eggs, chicks and adults. (During the petrel's breeding season, pigs are considered uneatable because of the strong fishy flavour of their flesh). Years of study have hitherto failed to find any way of eradicating the rat which is the biggest threat to the petrel, but a limited project to ensure at any rate the survival of the species was started in 1982 with the support of the World Wildlife Fund. A *cordon sanitaire* was thrown round the most concentrated breeding area on a hilltop in Floreana, where there are still some 1,500 birds. If rats cannot be eliminated, it may at least be possible to exclude them from this zone for the duration of the six-month nesting season. The CDRS is deeply grateful to Bryan Bell, New Zealand Wildlife Service, and Jim Keith, U.S. Fish and Wildlife Service, who came to help with their specialized knowledge of rat control in planning this campaign.

The black rat was probably the first "old world" mammal to be introduced into the archipelago. The ships of the late seventeenth century buccaneers were certainly infested and they used some Galapagos beaches for careening their vessels. The buccaneer, Alexander Selkirk (the original of Robinson Crusoe) found that rats were already a pest on Juan Fernandez, an island off the coast of Chile, when he was marooned there around the year 1700.

EDUCATION AND TRAINING PROGRAMMES

The regular annual courses and examinations kept the CDRS and GNPS busy throughout August and September: first the training course for national park wardens, then the course for auxiliary tourist guides, and finally the longer and more rigorous course for naturalist guides.

An important new departure was the month-long visit of the Technical Head of the Rural Education Department of the Ministry of Education to collaborate with the CDRS education officer, Gonzalo Oviedo, in drafting plans to improve the curricula of the schools on the four inhabited islands. Their report, in addition to recommending improvements of a general nature, concentrated on the need for the schools to pay greater attention to environmental education with a view to equipping young people for employment in the islands' only growth industries — tourism, conservation and scientific research. This would imply putting a new emphasis on the teaching of science. The suggested reforms have been submitted to the Minister of Education.

VISITORS AND EVENTS AT THE CHARLES DARWIN STATION: MAY — OCTOBER 1982

MAY

Gregory Estes, Mike Jackson and Barry Meatyard of the Cambridge University Darwin Centenary Expedition to Galapagos began their study of the feeding of the marine iguana.

Party sailed to Cartago Bay (Isabela) to restore to their ancestral home the first 37 of the young land iguanas, captive-bred at the CDRS.

Yael Lubin to Santiago to investigate the recently observed occurrence of cockroaches there.

Gary Robinson, Ted McConnaghey and their wives to Champion to study white coral and water temperatures.

Andrew Laurie and Arnaldo Tupiza began a 15-day trip sailing round Isabela to observe marine iguanas.

Pepe Villa, formerly Deputy Director of CDRS, began work on the new Master Plan for the Galapagos Archipelago.

JUNE

Bruce Barnett left CDRS on completing his studies of the feral dogs.
Juan Black, Secretary General of the Darwin Foundation arrived at CDRS.
Pepe Villa, Juan Black and the Master Plan commission left for San Cristóbal, where they were joined by Ing. Arturo Ponce, Director of the Department of Natural Areas and Wildlife.
Catherine Rechten, Max-Planck Institute, returned to Española to continue her studies of the Waved Albatross.
José Elías Cárdenas of the Ministry of Education came to work with Gonzalo Oviedo on the joint educational programme of the Ministry and the CDRS.
Peter Grant and his daughter arrived to continue their long-term studies of Darwin's Finches.
Ruperto Pinos, from the Chimborazo Polytechnic, came to study problems of wild cattle.
Bryan Bell, expert on rat control, arrived from New Zealand to help Malcolm Coulter in his project to save the Hawaiian Petrel from extinction.

JULY

Jim Keith, Denver Wildlife Center, came to help with the rat problem.
Malcolm Coulter, Bryan Bell, Jim Keith and assistants to Floreana for the campaign to save the petrel.
Mario Hurtado from the National Institute of Fisheries and Byron Mora of the Subsecretariat of Fisheries arrived to work out with CDRS a joint plan for artesanal fishing in 1982/83.
Allen Putney, adviser on the Master Plan, arrived at the Station.
Tjitte de Vries came to continue his study of the Frigate-birds.
Gunther Reck and Merilio Morell came on a WWF mission.
Malcolm Coulter left to take part in the conference of the International Council for Bird Preservation at Cambridge, England, and the International Ornithological Congress in Moscow.
Ana Cristina Sosa, Catholic Univ. of Quito, began work on the birds of the Isabela lagoons.
Jaqueline Peñaherrera to Isabela for a 3-month project on human ecology.
Dominique Limberger and assistant began their marine iguana studies on Fernandina.

AUGUST

The annual training course for National Park wardens began at the Station.
Yael Lubin, staff entomologist, left for four months to lecture at Univ. of Gainesville, Florida. Her assistant, Krista Connors returned to the U.S.A.
Luis Calvopiña, staff scientist for feral animals, to Cambridge to take part in a conference.
Richard Darwin Keynes, Cambridge Univ., a member of the CDF's Executive Council, paid another visit to the Galapagos.
The annual training course for auxiliary tourist guides began.
Bruce Coblentz, his wife, Mike Hansen and Bill Barber came to study problems of the wild pigs on Santiago.
Yoland Celeri went to the islet of Venecia to report on the artificial breeding colony of land iguanas.
Frank Talbot, Peter Bedford and their wives, California Academy of Sciences, visited CDRS.
Zev Naveh, Univ. of Haifa, visited CDRS.
Oswaldo Chapi and his team returned to Isabela for another stage in the dog control campaign.
Wolf volanco on Isabela erupted. Alan and Tui Moore set out with Ruth Quezada to observe.
Larger party including television team followed later.

SEPTEMBER

Annual course for naturalist guides began.
Mary Curran de Espinoza left after serving 18 months as librarian.
Dwight and Martha Simpson visited CDRS on behalf of the National Wildlife Federation.
Price Waterhouse representatives audited Station accounts.
United Nations' film team, led by Simone Di Bagho, began filming at CDRS.
Jorge Lara of the GNPS married Cecilia Solís of the CDRS.
A second child was born to Paola and Gonzalo Oviedo, staff scientists.
Fabiola de Calvopiña returned to Quito for further study after serving since 1979 as assistant in the mammal ecology programme.

Andrew Laurie returned to continue his marine iguana investigations, assisted by Thomas Woollard and Charles Fairhurst.

OCTOBER

Joint fish studies of National Institute for Galapagos, National Institute of Fisheries and CDRS began.

Peter Kramer, CDF President, spent a week at the Station.

Juan Black, Sec. Gen. of CDF, and Raúl Moscoso, Chairman of the Ecuadorean Group of the CDF, arrived for consultations.

Arturo Vizcaino, National Director of IECE, came to discuss educational problems with Gonzalo Oviedo, CDRS co-ordinator of education.

Phyllis Bentley began a 6-month project collecting plants for Paul Colinvaux, Ohio State University.

BOOK REVIEW

Conservation and Evolution: by *O.H. Frankel and M.E. Soulé*, Cambridge University Press, 1981. 335 p.p. Hardback £25. Paperback £7.95.

The authors outline their purpose in their first paragraph: "In this book we attempt to bring together the genetic principles for the conservation of all forms of life, wild or domesticated, lions or lizards, oaks or orchids, cattle or ducks, rice or potatoes. The unifying factor underlying survival and adaptation, in time and space, is genetic diversity; and the nature, distribution and preservation of genetic diversity is the central theme of this book."

This is a pathfinding study of the relationship between evolutionary theory and practical nature conservation, the long-term problem that underlies the Charles Darwin Foundation's task in the Galapagos and the management of nature reserves anywhere. It also deals with the genetic diversity of cultivated plants and domesticated animals. The chapter headings indicate the ground covered: The process of extinction; Population genetics and conservation; Evolutionary genetics and conservation; Nature reserves; General principles and the genetics of captive propagation of animals; The role of botanical gardens in conservation; The genetic diversity of plants used by man; The conservation of plants used by man; Conservation of livestock genetic resources.

Sir Otto Frankel and Dr. Soulé are to be congratulated on this bold effort to ally genetic theory with practical conservation management, emphasizing the significance of genetic diversity and the long-term consequences of the accelerating increase in the rate of extinction of species.

G. T. C. S.