

Par. 91(08) : (*3) [1992 Clements]

AN OXFORD UNIVERSITY EXPEDITION TO THE WRANGELL-ST. ELIAS NATIONAL PARK, ALASKA

Patron: The Chancellor of Oxford University, The Rt. Hon. Lord Jenkins of Hillhead
Supported by The Royal Geographical Society, The British Ecological Society and The Scientific Exploration Society



FIREWEED 1992 PRELIMINARY REPORT



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INTRODUCTION

The Oxford University Expedition to Alaska has now been completed and all members of the expedition have arrived safely back in the U.K. The following report serves merely as a preliminary summary of our work. A full report will be produced in 1993. Those people and organizations who have already requested a full report will receive a complimentary copy. We will also send copies to those people and organizations who we feel have helped us a great deal in the planning and organization of the expedition. If you have not received a copy by the end of 1993 and would like one, please get in touch with us at the following permanent contact address: Richard Clements, Fireweed 1992, The Hollies, Bownham Park, Rodborough Common, Stroud, Gloucestershire. GL5 5BZ U.K.

LOGISTICAL REPORT

1. Health and Safety

We encountered no serious medical problems during the expedition. Diarrhoea and dehydration were suffered periodically and several old injuries were aggravated. None of these required professional medical treatment. Giardiasis has been known to occur in the Wrangell mountains. We took local advice on which water sources were safe to drink and hence avoided contraction of the illness. Rabies inoculations were recommended and taken before departure from the U.K. Mosquitoes were not a health threat but their endless onslaught was a threat to one's peace of mind. Their endeavours were thwarted to some extent by the purchase of head nets.

If any serious injury or illness had occurred, evacuation would have taken place via the airstrip at our field agents' homestead to the medical centre at Glennallen. We had informed Glennallen of our presence on the way into the National Park. Health insurance had already been taken out with Alexander Stenhouse who specialize in expedition insurance and are recommended by the Royal Geographical Society. We would though like to thank the staff at the Oxford University Occupational Health Office for the supply of the majority of our medical equipment and would also like to thank Mr. B. D'Eath of Mountchase Pharmacy, Lostwithiel, Cornwall, who provided subsidiary equipment at discount prices.

The main safety threat during both our time at the field site and at base camp was from grizzly and black bears. All precautions recommended by the National Park Service were adhered to and probably saved us from mauling. Food was prepared and cooked well away from the sleeping area and was stored in a woven nylon bag suspended by a rope pulley system between two trees. The whole team made constant noise, in the form of shouting and singing, whenever walking or working. Local advice was taken on the best methods of protection and we therefore purchased counter assault bear repellent sprays which contain a lung and eye irritant in case of close encounters. We also borrowed a pump action shotgun. All members of the expedition were instructed by the leader in how to use this weapon safely.

A Citizens Band Radio was purchased in Anchorage along with a large supply of batteries. In order to produce a strong enough signal we also required a dipole aerial system which was set up over trees. This provided us with contact to Mark Vale, who lives at the base of Fireweed, in case of emergencies.

2. Transport

Flights were arranged via Wildwings of Bristol who secured us inexpensive air fares with United Airlines. Our route involved changing planes at Los Angeles and Seattle on the way out to Alaska and at Seattle and Washington on the return journey. The baggage allowance was generous, though we would like to thank the airline staff at both Heathrow and Anchorage for their understanding when checking in our bags.

On arrival in Anchorage our field agents were extremely helpful in providing transport and assistance during purchase of food and supplies from discount membership warehouse stores. Our field agents also provided transport of us and all our equipment from Anchorage to McCarthy and we would like to thank the whole Edwards family for their invaluable assistance therein. All transport in the McCarthy area was on foot. Again our field agents and their family provided several much appreciated lifts to our trail-head, within two hours of the field site. At the end of the expedition a minivan was hired from Avis in Anchorage for a period of 10 days. With this we were able to freight all of our equipment out of the Park and visit our contacts in Fairbanks, Anchorage and Kenai.

3. Administration in the field

Base camp was located on our Field Agents' Homestead at Swift Creek (McCarthy B6 Quadrangle, 143 E, 61 24' N). Initially three tents were set up under tarpaulins covering all the personal and group equipment. Food, already purchased in Anchorage, was stored in our field agents' house due to the threat of attack by bears. Cooking was carried out around 500 yards away at the river and cooking equipment was stored about 100 yards away. After several problems with a young black bear interfering with our cooking sites during the night, and also with unwelcome advances by a lynx, we moved into one of the cabins on our field agents' homestead.

Our field camp was situated just inside the woods approximately 2.5 miles from the McCarthy gravel road (McCarthy B6 Quadrangle, 143 11' E, 61 26' N). The fieldwork was carried out in two sessions. Between these sessions we travelled down to base camp to rest, recuperate and replenish our supplies. Return from the project site was on foot, a walk of between 3.5 and 5 hours. Water was safe to drink at both base camp and at the field camp. Care was always taken when filling water containers to be aware of the threat of bear attack. We were also warned that the numerous beaver lakes between base and field camps could be contaminated by giardiasis and care was taken not to drink from any of these.

The route from base camp up to the field site passed over Mr. K. Smith's land (to whom we are very grateful for allowing us access) up onto the McCarthy road and along the road to our trail head. The trail is not marked on up to date maps of the region and we were asked by our guide not to reveal its location. The trails shown on the McCarthy B6 Quadrangle Map (U.S. Geographical Survey) in the Fireweed area do not exist. Any researchers interested in studying the area please contact us at the above address.

4. Finance

Money was raised through numerous letters to grant-giving bodies and companies around the country. We found most success in applying to businesses located near our homes. Needless to say we are very grateful to all our sponsors for enabling Fireweed 1992 to take place. All people and organizations involved will receive full credit in the Final report.

SCIENTIFIC REPORT

1. Small Mammal Survey

AIMS: The original aim of the project had been to assess the type and density of small mammal herbivores at different altitudes on the West slope of Fireweed Mountain. This aim was amended after arrival in Alaska in two ways. Dr. Joe Cook, Curator of Mammals at the University of Alaska Museum in Fairbanks strongly recommended that museum specimens be made as there existed no museum record of the small mammal fauna in any of the Wrangell-St. Elias National Park. This then became the main aim of the project. The survey was carried out on the South slope instead of the West slope since the West slope was so thick with vegetation that it was almost impossible to lay traps.

METHODS: Four trapping sites at altitudes of 763m, 890m, 1000m and 1100m were used. A total of 100 Sherman Live Capture traps were placed in two lines, 10m apart. Each line was 240m long with two traps laid at each station, there being 25 stations along each line. This configuration was recommended as the standard one used by the University of Alaska, Fairbanks (UAF). The trapping lines were checked every 12 hours for a period of three days before being moved to a different habitat. The animals collected were prepared as skin and skeleton specimens. Frozen tissue samples were also made using liquid nitrogen supplied by UAF. When sufficient specimens of each species had been taken, further individuals were marked and released.

RESULTS: The small mammal herbivores found by our study were of two species, The Northern Red-Backed Vole (*Clethrionomys rutilus*) and the Tundra Vole (*Microtus oeconomus*). These identifications still require confirmation by UAF. A small number of Red Squirrels (*Tamiasciurus hudsonicus*) and shrews (*Sorex sp.*) were also trapped. The lowest sites yielded all *Clethrionomys rutilus* (i.e. at 763m and 890m) while at the higher sites about one third of the voles caught were thought to be *Microtus oeconomus*, with the remaining two thirds being *Clethrionomys rutilus*. The vegetation at the higher sites was quite open with alpine meadow and shrubs being common while the lower sites were principally woodland made up of *Salix sp.* and *Alnus crispa*. We consider it likely that habitat differences are responsible for the distributions of the different vole species.

2. Plant Survey

AIMS: The original aim of investigating the effect of altitude and aspect on the distribution of vegetation on the South West slope of Fireweed Mountain was followed. Knowledge gained from this project was also used to prepare a species inventory of the transects and to provide a full description of the trapping lines used in the small mammal survey.

METHODS: After reconnaissance of the chosen peak, suitable areas for study on the Southern and Western aspects were found. Since the vegetation encountered was so dense belt transects were not used. Instead line transects were marked out. Each transect was divided into five equal altitudinal belts or zones. These ran from 800m to 1300m on the Southern transect and from a point just above 800m (due to the topography) to 1300m on the Western transect. Quadrats were used to sample the vegetation and several physical variables. The quadrat sizes were 2m x 2m for the top two zones on each transect and 4m x 4m in the rest of the zones. The quadrats were positioned randomly using a four digit random number table. Using this methodology ten samples were carried out per zone giving a total of 100 samples for both transects. In each quadrat both plant species and bare ground cover were measured on the Domin Scale. The physical variables of altitude, inclination, soil depth, soil pH, and soil moisture were also measured.

A species inventory and the descriptions of the mammal trapping lines were carried out by casual observation. Throughout the plant study difficulties were found in identification of the many willow and sedge species. These were therefore classified by number rather than name in the results.

RESULTS: After a preliminary inspection of the data it can be said that altitude and aspect do affect vegetation distribution at this site. At the lowest altitudes white spruce (*Picea glauca*) was found, giving way to alder (*Alnus crispa*) and willow species (*Salix sp.*). Above this the shrub birch *Betula glandulosa* and small alpines such as *Saxifraga* and *Dryas octopetala* were discovered. Little more can be said until computer analysis is carried out.

ACKNOWLEDGEMENTS

We do not have space to give credit to all those people and organizations who have helped, sponsored and advised us. It must just be said at present that we are extremely grateful for your assistance. It is necessary though to thank several individuals who have helped to smooth our path and have really given assistance beyond the call of duty. In the U.K. we must thank Dr. H.C. Bennet-Clark and our home agent Dr. B.E. Juniper for providing help, advice and a constant stream of references upon demand. In Alaska our job would have been extremely difficult without the assistance of Jim and Pat Edwards and Mark Vale. Their help was invaluable and we are all extremely grateful to the three of them. Finally we would like to thank again everyone who helped us to make 'Fireweed 1992' a success.