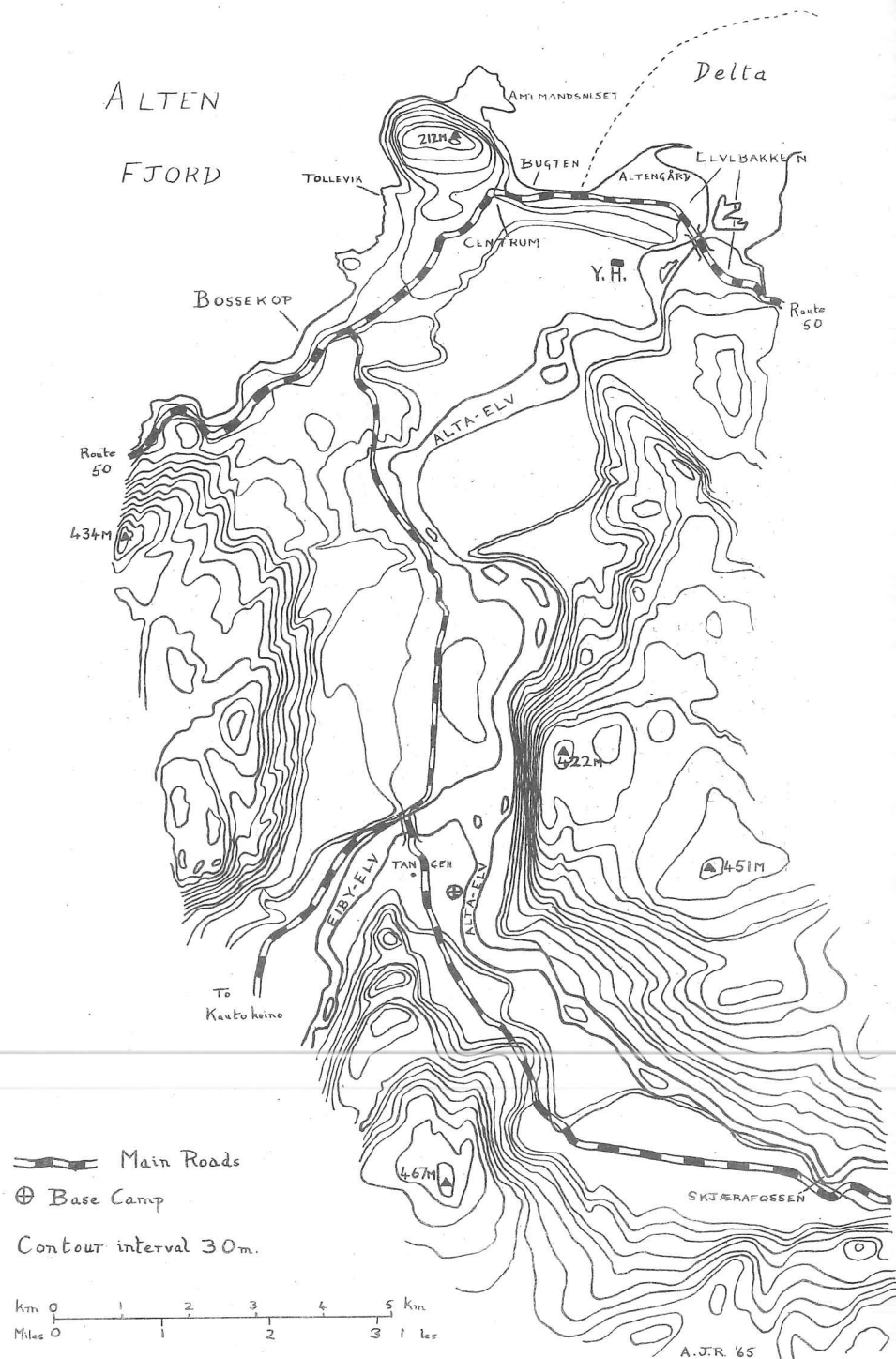


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**OXFORD
EXPEDITION
TO FINNMARK, 1964.**

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The Oxford Expedition to Finnmark, 1964.

Report by A. J. READ.

Objects of the Expedition:

1. To study the relationship between the settlement and agriculture, and the landforms, in the lower valley of the Alta-elv in Finnmark, Northern Norway. This was to involve the preparation of two large scale maps, one morphological and the other of land utilisation.

2. Secondary objectives were to collect shells for terrace-dating and to bring back specimens of Lapp material culture for the Pitt-Rivers Museum. An extensive pollen analysis of peat deposits had been considered, but the results would not have justified the time and bulky equipment required. In any case, the very exceptionally wet weather experienced during the last four weeks of our field work slowed down progress on our main work to such an extent that the secondary objectives had to be abandoned.

Members:

A. J. Read (Pembroke College), Geographer and Leader.
R. S. Silverstone (Balliol College), Geographer.
J. D. Pearce (Magdalen College), Geographer.
J. D. Edge (Pembroke College), Photographer.

Home Agents:

Mr. E. Paget, Jesus College, Oxford.
Mr. J. D. Woodley, Dept. of Zoology, Oxford.

Travel:

Since we were working near the coast in one small region it was unnecessary to take our own transport, so most of our journey was by sea; much cheaper than overland travel when one allows for depreciation of a vehicle. The stores were assembled and packed at Pembroke College, and sent by lorry to North Shields accompanied by two members. Several days later they were joined by the other two and on 20th July we sailed to Bergen on the "Leda" with our stores safely stowed in two shipping crates which we were allowed to retain for the coastal steamer voyage from Bergen to Hammerfest, where we arrived on Sunday, 26th July. The bulk of the stores were taken to Alta aboard the fjord steamer, though the large luggage compartments of the Hammerfest-Skaidi-Alta buses accommodated several tea-chests without much difficulty. That night we pitched our tents in a field overlooking the fjord, at the invitation of Mr. Romberg-Berentsen, Finnmark's only representative of the Norwegian Tourist Association, who helped us considerably during our stay. The following day a lorry transported us to our camp site on the banks of the Alte-elv six miles up the valley from the Bossekop crossroads.

The return journey was by the same route, departing from Alta on September 7th and arriving in Newcastle a week later after an uneventful voyage, though it was not so calm as the outward one, we felt.

Area:

The Alta region was heavily glaciated by the Fennoscandian ice-sheet, which left much of the upland (Finnmarksvidda) stripped of soil cover and the valleys bounded by steep rockfaces with high scree at their feet. The land would have been practically useless for settled occupation were it not for the outwash material which filled the valley to a height of approximately 65m. above present sea-level during the period of deglaciation. This has been subsequently dissected by the river, leaving a complex series of terraces which provide fertile and workable land for farming, forestry and building, as well as a modern delta formed by redeposition of the outwash, part of which has been successfully reclaimed, especially at

Altengaard. Raised beaches, both erosional ones in the outwash material and depositional ones, such as that supporting the fishing community of Amtmandsneset, add to the available useful land.

The climate is one of extremes. During summer the midnight sun persists for two months, while the winters are marked by an equal period during which only a dull twilight appears for several hours in the middle of the day. Temperatures can be high, 70°F and more, and low in winter with an average February reading of -7.2°C (19°F). While we were there a diurnal range of 30 - 40 °F was common. The position of Alta at the head of the fjord ensures an annual rainfall less than half that experienced at the seaward end by Hammerfest.

The population is mixed and includes Lapps and people from Southern Norway, Finland and Russia, and apart from the semi-nomadic Lapps, was almost all rehoused after the burning of the whole of Alta during the war.

Food:

All our food for the period in the field was obtained in England, and packed into 2 and 4 man/day boxes in a Pembroke cellar with the aid of a polythene sealer acquired for us by Mr. H. Hicks and available from his wholesale food depot in Oxford for any future expedition wishing to seal its own food supplies. In fact food is readily available at Alta - 5,000 people live there - but even in the supermarkets it is expensive and it would have wasted a great deal of time to keep walking into the town to get provisions. During the journey each way we had a choice, of expensive but excellent meals on the steamer, or of eating ashore, since we generally put in two or three times a day.

Equipment:

- a) Surveying - plane table 24" x 24", rangefinder, clinometer, sight rule, box compass, steel tape and two ranging rods. This proved fairly satisfactory except for the rangefinder which was not quite as accurate as our guesses for measuring distances of hundreds of yards. We would advise against

any attempt to cover a large area by survey on the ground in this region, as the forest and bush vegetation are a serious hindrance. Air photographs are the only answer to the bulk of the surveying work, and save a great deal of time and money in the field. It would have been very useful to have had an accurate means of measuring the terrace heights, and a delicate aneroid barometer used in conjunction with a barograph at base would have fulfilled this.

- b) Photographic - Praktica IV camera, with panoramic, close-up and telephoto equipment, and electronic flash. The close-up was little used, but had we found shells in the terraces, for instance, it would have been essential. Panoramic lens was invaluable, and the flash particularly helpful in photographing exposed sections cut in the outwash material for it could be directed on to the lower, poorly lit part and result in equal light effect for the whole. We were very pleased with the performance of all this equipment, apart from having to return the first camera we bought owing to a serious fault in the mechanism. Yet another example of the need to test expedition gear!
- c) Tentage - a "Nijer" size one with a "Dorgard" extension for cooking and providing a wet weather work area, a "Good Companions" major and a small dry stores tent. They kept the rain out, but since we enjoyed a sheltered site their ability to withstand wind was never tested.
- d) Medical - a medical chest was taken, but we were fortunate in having neither injuries nor illness, and suffered little beyond mosquitos, clegs and blisters. A large supply of repellent dealt with the former fairly satisfactorily.

Insurance:

Although covered by the reciprocal health service arrangements we did insure against the costs of repatriation in the event of serious illness or accident, and all our non-perishable stores were also covered. This proved all too necessary, for three days before departure £120 worth of photographic equipment

was stolen, and we were only able to replace this in time by the claim being handled swiftly by the Commercial Union Assurance Co. Ltd., who made a repayment available to us within twenty-four hours.

Field Work:

Preparation of the base-map. The area is covered by 1:50,000 and 1:100,000 maps which are adequate for general use, but neither the scale nor accuracy of these sheets was suitable for our work since to be able to mark the complex terraces or small fields we had to produce a map at 6" to 1 mile. The base-map was a laborious piece of work, made partly from air photographs, partly from the Alta post-war reconstruction plan, the former being at 1:20,000, the latter at 1:5,000. A little surveying was done to clarify detailed or obscure areas of the map, but was much restricted by the wet weather. It would have been impracticable to attempt to survey 12 miles of forested valley in any case.

As soon as John Pearce completed a sheet of the base map, two copies were made, one for geomorphological field use and the other for the land use survey. These were cut into manageable sizes so as to fit into polythene bags when the need arose.

Geomorphological mapping. We were concerned only with the valley floor, and therefore most of the breaks of slope were terraces, though a number of features believed to be kettle holes were found at the upstream part of our area. There were so many terraces that without air photographs we would have mapped only a fraction of them in six weeks, though even with this advantage there was still a great deal of checking and correcting to be done on the ground. The terraces tended to be so close in many areas that ones missed on the air photographs could usually be marked quite accurately without surveying, though it was slow work following each terrace to check that it was continuous, and to find which was higher at the intersections. We had entertained hopes of being able to use our equipment to survey heights, but the scarcity of spot heights and the rough terrain made this impossible. Towards the end of our work we met Frederik Ruud, an Oslo research geologist, who suggested

the barometer method mentioned above. It is hoped that Adrian Read will be able to obtain this accurate data when at Alta again in July 1965, to enable correlation of all the terraces in the area. It was not really the expedition's concern when its main purpose was to study a geographical relationship.

Land use surveying. This map was intended to be comparable with British Land Utilisation Survey sheets, and therefore the classification and symbols used are, as far as possible, identical with those employed for the recent British survey. The main difficulties we met were the mapping of new fields, often of irregular shape, and in deciding when a farm became small enough to be described as a house and garden. The farms are usually part-time family holdings, producing enough hay to keep a handful of dairy cattle, and also a plot of potatoes. There is a local experimental farm, State sponsored, which is successfully producing a variety of vegetables and fodder crops and testing different kinds of grass. However farming is not a very profitable occupation at Alta and new ideas are not received enthusiastically. The residential parts of the town either lie along the main roads or in estates of modern detached houses. The only "built-up" areas were the small commercial centres at Bossekop and Elvebakken, which included chain stores, banks, post offices and cafes with the inevitable juke-box. At Centrum, the half-way point in this elongate settlement of some four miles length, is sited the Radhuset, a civic centre administering a large area round about Alta through the various services it incorporates which include police, fire, labour exchange, ministry of agriculture, highways engineer, town planning authorities, national insurance and library. Notable for a town of this size was the lack of any large industrial establishment comparable with "Findus" at Hammerfest, and at present only the building and Alta Quartzite industries can be described as significant. Quayside warehouses were found at Bossekop and Bugthen, while a modern airstrip on the delta was opened recently. Forestry is the dominant land-use up the valley, with farming increasing towards the coast.

Since the expedition maps are still being prepared, there is little point in giving details of the land-use or its relationship with the landforms here, but a paper on the subject is in preparation.

Stone Age settlements. Mr. Knut Furu, the local Ministry of Agriculture representative, showed us a stone-age site at Tollevik and lent us a book about these local sites (written in English), as he thought we might be interested in them. The result was several visits to Tollevik which yielded us a small collection of artifacts, mainly scrapers and gravers, which Tromsø Museum allowed us to bring back to Oxford where they have been given to the Pitt Rivers Museum.

Acknowledgements:

A great deal of help was given to the Expedition, and we would like to thank the following in particular.

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Mr. D.F.W. Baden-Powell; Brig. G. Bomford; The Bursar, Pembroke College, Oxford; Dr. A.J. Butt; Dr. Dimbleby; Mr. B.S. John; Dr. B.E. Juel-Jensen; Dr. B.E. Juniper; Prof. W.R. Mead; Mr. E. Paget; Mr. N.C. Pollock; Dr. H.G. Reading; Mr. D.E. Sugden; Mr. J.D. Woodley.

Also the services of the Norwegian National Tourist Office, the Oxford Branch of Westminster Bank Ltd., and our shipping agents P.H. Matthiessen & Co. Ltd.

Personal advice and help in Norway:

Atla Rotary Club; Mr. R.E. Binns; The Director, Det Norsk Meteorologiske Institutt; The Director, Norges Geografiske Oppmåling; Mr. J. Fjellang; Mr. Knut Furu; Mr. A. Romberg-Berentsen; Mr. Rønning, Mr. F. Ruud.

Food or equipment free or at reduced rates:

Acru Electric Tool Manufacturing Co. Ltd. (polythene sealer);

Addis Ltd. (toothbrushes); Ashton Brothers & Co. Ltd. (tea and hand towels); Atkinsons of Windermere Ltd. (Kendal Mint Cake); Batchelors Catering Supplies Ltd. (Meat Bars and Dried Complete Meals); Beecham (medical supplies); Bergen Steamship Co. Ltd. (free carriage of stores); Van den Berghs Ltd. (margarine); Alfred Bird & Sons Ltd. (Instant Whip and Maxwell House Coffee); Thomas Black & Sons (Greenock) Ltd. (tentage); Boots Pure Drug Co. Ltd. (medical supplies); Bryant & May Ltd. (matches); Bowaters Packaging Ltd. (man/day boxes); Brillo Ltd. (soap pads); British Egg Marketing Board (dried egg); British Van Heusen (Sales) Ltd. (shirts); D. Byford & Co. Ltd. (socks and sweaters); Cadbury Fry Export Dept. (chocolate); Cerebos Foods Ltd. (salt); Chiltern Hunt Ltd. (small polythene bags); Cooper, McDougall & Robertson Ltd. (mosquito repellent and aerosols); Frank Cooper Ltd. (marmalade); William Crawford & Sons Ltd. (biscuits and cream crackers); Cyanamid of Great Britain Ltd. (medical supplies); Dunlop Footwear Ltd. (rubber boots and gym shoes); F.E.B. (boots); F.M.S. (Farm Products Ltd.) (dried vegetables); Geigy Pharmaceutical Co. Ltd. (medical supplies); Glaxo Laboratories Ltd. (dried milk and Complan); T.W. Hedley & Co. Ltd. (soap); Huntley & Palmers Ltd. (oatmeal blocks); Imperial Chemical Industries Ltd. (Paints Division) (paint and thinner); Imperial Chemical Industries Ltd. (Pharmaceuticals Division) (Medical supplies); Kiwi Polish Co. (shoe polish); Kodak Ltd. (film); Lipton Ltd. (tea); Macfarlane Lang & Co. Ltd. (biscuits); George Maclellan & Co. Ltd. (airbeds); Mapleton's Nut Food Ltd. (Fruitarian Cake); Mather & Crowther Ltd. (cigarette lighters); May & Baker Ltd. (medical supplies); Nestle Co. Ltd. (milk and chocolate); Nylontex Ltd. (anoraks); Oxo Ltd. (meat extract cubes); Pfizer (medical supplies); Quaker Oats Ltd. (porridge oats); Richards Bros. & Sons Ltd. (clasp knife); James Robertson & Sons Ltd. (jam); The Ryvita Co. Ltd. (crispbread); Rumble, Crowther & Nicholas (toilet paper); Shippam Ltd. (pastes and Supreme range); A. Smalley (mosquito nets); Smiths Potato Crisps Ltd. (nut and raisins); Sponcel Ltd. (Spontex mops and cloths); Hugh Stevenson & Sons Ltd. (fibreboard crates); W. Symington & Co. Ltd. (soup); Tate & Lyle Refineries Ltd. (sugar and Golden Syrup); The Tupperware Co. (plastic containers); Unigate Ltd. (dried milk); A. Wander Ltd. (Ovaltine); Ward, Blenkinsop (medical supplies); Wrens Ltd. (shoe polish).

STATEMENT OF ACCOUNT, 18th November, 1964

INCOME:

	£.	s.	d.
Pembroke College	49	18	0
Magdalen College	30	0	0
Gino Watkins Memorial Fund	25	0	0
Royal Geographical Society	75	0	0
Ford (Dagenham) Trust	50	0	0
Gilchrist Educational Trust	75	0	0
A.C. Irvine Trust	40	0	0
Members' Contributions	200	0	0
	<u>544</u>	<u>18</u>	<u>0</u>

N.B. This does not include the resale of equipment.

EXPENDITURE:

	£.	s.	d.
Equipment	105	12	2
Fares	192	10	0
Insurance	20	12	0
Food (in the field)	36	8	7
Photographic equipment (2nd.)	129	17	11
Air Photographs	5	0	0
Expenses and food on journey	57	12	0
Other expenses	27	4	6
	<u>574</u>	<u>17</u>	<u>2</u>

Debit £29 19s. 2

N.B. This does not include cost of report