

Einar Koefoed and his work as zoologist during the practical — scientific fishery investigations in northern waters from 1923 — 38

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In 1920 the Directorate of Fisheries started anew the practical-scientific fishery research work in northern waters. This type of research had originally been introduced by Dr. Johan Hjort at the turn of the century, and the renewed investigations were meant to follow along the same lines.

The Norwegian fishery authorities had no ocean research vessel at their disposal at that time, but the plan was put into operation in 1923 with leased fishing vessels which were properly equipped for their special task. The scientists would necessarily lead a rather miserable life onboard a small fishing vessel, but to scientists with the proper attitude and with a burning interest this would be of secondary importance.

The collecting of scientific material on the cruises was to be performed by Einar Koefoed.

On these cruises to the far north great demands were made on the working capacity and patience of the zoologist. Being responsible for the collecting and preservation of the scientific material, Einar Koefoed had to work at all hours day and night, weekdays and Sundays, and some times perhaps several 24 — hr. days in one stretch without rest and sleep if the situation so demanded. Fishery advisor Thor Iversen, with whom Einar Koefoed cooperated, has in one of his reports commented on Koefoed's work with the following words: "When the collected material of specific scientific value has become so comprehensive I wish to emphasize that this mainly is due to the zoologist Einar Koefoed who has participated in the majority of the expeditions".

The material which Koefoed collected through a number of years on the expeditions to northern waters was subsequently sent to various scientific institutions. The biological and zoological collections were sent to the Bergen Museum, the Zoological Museum of Oslo, the Tromsø Museum and the Division for Fishery Research at the Directorate of

Fisheries. Botanical material was sent to the Bergen Museum and the Norges Svalbard og Ishavsundersøkelser. Also, geological samples collected on the cruises were sent to the latter institute, while the water samples and temperature readings from the hydrographic work were sent to the Geophysical Institute in Bergen.

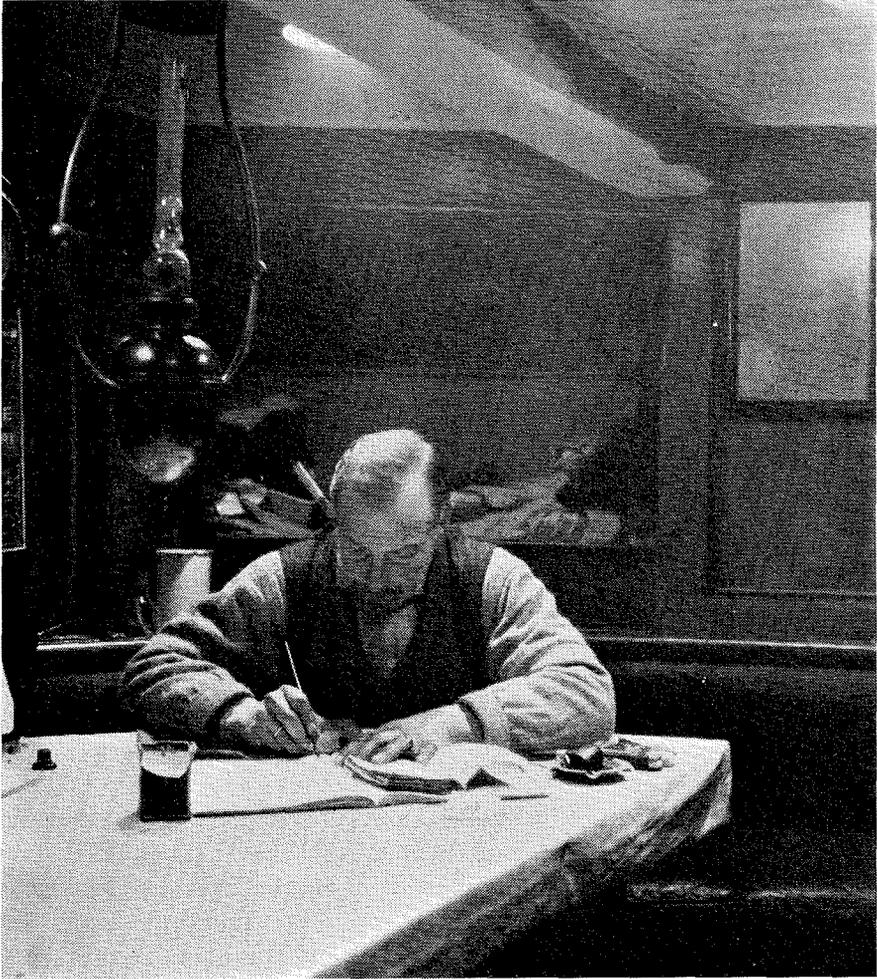
On the basis of the large scientific material collected by Einar Koefoed in the northern waters a series of papers and articles have been published by the various institutions. A list of such publications is appended at the end of this article.

The fishery investigations during the years 1923—38 covered the whole Barents Sea from the White Sea in the south to Franz Josef Land in the north, the whole of the Svalbard area including the Bear Island bank plateau as well as the Norwegian Sea, the Jan Mayen area and the sea off Southeast Greenland. During the years a large collection was made of the marine fauna in this widespread area. Also, much material was collected ashore consisting of stones, plants and animals from Southeast Greenland, Jan Mayen, Spitsbergen and Hope Island. Einar Koefoed is not only an eminent zoologist but has also excellent knowledge of botany and geology. He always made very precise notes in his diary about the various findings, he took good care of the collected samples and saw to it that they were sent to the proper interested institutions.

During the period from 1923 to 1938 Koefoed spent altogether 43 months on the exploratory fishery expeditions in northern waters. The limitation of the present article does not allow for a detailed description of Koefoed's work on all these cruises. But a few notes on the achievements performed by Koefoed on Thor Iversen's expeditions in the different years may be of interest.

Koefoed has always been a keen and accurate observer both at sea and during visits ashore, and his notes, such as those from Hope Island, are real gems. The following notes are taken from his diary dated August 25th, 1924.

“Nasset er en vidtstrakt mosdækket slette, hist og her en tue av tyndt højt, ca. 10 cm. græs uten aks; bladene var frosset brune i spissen. I mosen vokset hyppigst *Saxifrage cernua*, med den konkurrerte i hyppighed den lave hvidblomstrede *Saxifraga*, som paa grunn av sine utløbere oftest står i tette klynger; nu og da en tue av grønarve uten blomster, av *Saxifraga caespitosa* og *Oppositifolia*, denne nærmest skråningen. Mosen, som et enkelt sted hadde sporehuse var hist og her avbrutt av graa lavpletter. — Nævnes må også en enkelt tue av *Saxifraga* med æglformet læderagtige blade tandede i den ytre but avrundede rand, rosetstillede. Bladenes farve var mørkegrøn men randen var brunrød. Blomsterstanden var mittstillet, men den hadde kun reist sig litet over bladrosseten og



Einar Koefoed writing in his journal on the expedition with F/W "Tovik" in 1924.

blomsterne var kun svakt utviklet saa de hvitgrønne kronblade var skjult under bægerbladene og krummet ind omkring frugtstolen. — På langs gik revner i mosteppeet, hvor vand var rislet ned høiere oppe fra. Tre steder sås senkninger, hvor der hadde staat vand; det ene sted var der et sølvagtigt overtræk over mosen, inntørket skum, det andet en brun skorpe over jorden, og det tredje en rød, som et rødt lag av alger eller sop. På fjellskråningen fandtes i vandsig to tuer *Ranunculus*, og på den tørre stenede skråning mange valmuer, mest gule med grønsorte pletter i randen av kronbladene, men også hvite (for en del bleges vel blomsterne

efter utspringet). På sletten pilte avgaarde en dunklædt brungrå endnu ikke flyvefærdig tyvjoung, tyvjo skrikende over. Gik tilbage langs stranden og samlet sten med avtryk og med forsteninger.»

The headland of Hope Island which Koefoed investigated on this occasion was later named "Koefoed Point" (Thor Iversen 1941).

After a preliminary classification in 1924 Koefoed listed 15 species of flowering plants besides various species of mosses and lichens. Of flowering plants Koefoed collected, according to Johannes Lied (1926), 16 species of which 8 were new for Hope Island. According to E. Jørgensen (1926) the material collected by Koefoed contained 35 species of mosses. In a preliminary communication Bernt Lyng (1926) stated that the number of species of mosses collected by Koefoed in 1924 on Hope Island was 19. A list of the flowering plants, mosses and lichens found on Hope Island was given by Thor Iversen in his publication «Ishavsøya Hopen» (1941). The fossil plants brought back by the expeditions in 1924 and 1925 were treated by Ove Arboe Høeg (1926), and the fossil shells by W. Bodylewsky (1926).

As regards the bird life on Hope Island Thor Iversen (1941) cited from Koefoed's notes: "Hope Island was place of resort for such birds as the Guillemot (*Uria lomvia*), the Glaucus Gull (*Larus hyperboreus*), the kittiwake (*Rissa tridactyla*) and Skuas (*Stercorarius*). Single Black Guillemots (*Uria grylle*) and flocks of Spitsbergen Eiders (*Somateria mollissima*) were also seen. On the beach the Purple Sandpiper (*Tringa maritima*) were tripping about."

In his report on the expeditions Thor Iversen (1925) said "that the collected material, and particularly that from the small isolated rock Island situated so far out in the sea east of South Cape of Spitsbergen, has awakened great interest among the specialists. The Hope Island has not previously been thoroughly investigated, and this island is considered to be very difficult of access."

The scientific material collected ashore was, however, only a by-product of the main object of the expeditions, namely the fishery experiments and the study of the fauna of the sea. In this exploratory work various types of fishing gear were employed, such as long-lines, trawl gear and beach seine. The large quantity of bottom animals and so-called "scientific fishes" were properly taken care of and preserved by Koefoed. This valuable material was later distributed to the various scientific institutions.

In 1925 the expedition was suddenly interrupted on July 24 when the leased research vessel "Tovik" stranded on the beach in the Ice Fjord, West Spitsbergen. Another vessel which happened to be in the area came to assistance, and "Tovik" was pulled off the rocks and towed to



F/W "Tovik" beached after being damaged at Spitsbergen in 1925.

the bay off the Longyear coal mines. However, the vessel was so badly damaged that it was left there. Iversen and Koefoed found shelter in a so-called "pleasure house" which consisted only of an old life boat turned upside down. In this shelter the two members of the expedition spent the whole summer until September 9th. But Koefoed was not unemployed on account of the shipwreck. In his diary we find, for example, the following entry from this period: "From July 24. to 27. observed several times *Cyanea capilata* and *Limacina helicina* near the sea surface in the bay inside the Hotel Point. In a gillnet set in the Advent Bay 12 herring were caught on July 29th, 9 herring on the 30th and 20 on the 31st. The herrings are steadily caught on the outer end of the net. It is large herring, measured one at 35 cm. The herring stomach contained young sea scorpions. There was inside fat on the stomach and along the edges of the pyloric caeca. The herring was thick across the back with a rounded convex belly. Most of them, however, look like

empty herring with the ribs like black crosses under the belly. The sexual organs are small."

The long stay in the turned-over lifeboat had also some bright moments. Thus the stranded expedition happened to witness an historical event in that distant part of the world. On Friday August 14th 1925 we find a short entry in the journal which says: "The flag of Norway is hoisted over Svalbard", thus denoting Norway's sovereignty of the land according to the Svalbard Treaty.

In the following years the Iversen—Koefoed team worked with the same intensity and interest in these Arctic waters, with only a few interruptions some years due to lack of funds for the expeditions. They collected a vast amount of material and observations from land and sea, a collection which at that time was of fundamental value and hardly could be equalled. Much of the material was collected under extreme conditions such as those during the winter cruise in the Barents Sea 1932—1933 with the S/S "Borgenes", a steel-hulled trawler. On Christmas eve 1932 the vessel was working in the middle of the Barents Sea in approximate position 74° N. lat, 37° E. long. The ship was moving in newly-formed ice slush with the surface temperature minus 1,5° C and the air temperature minus 8,4° C. All day a section of hydrographic stations was worked. It was not until second Christmas day that the dangerously over-iced "Borgenes" arrived at Honningsvåg, Finnmark, where the crew and the two scientists were granted a few days of belated Christmas celebration. But the course was soon set eastwards again to the banks off the White Sea. During the month of January 1933 they were engaged in mesh selection experiments using a small-meshed net over the cod-end of the trawl. It was a cold and nasty job for Koefoed to measure the thousands of small haddock and cod collected in the fine-meshed covering and likewise to examine and measure the fish in the cod-end proper (Iversen 1933). All the work was performed on the fore deck without any shelter from wind and snow. On February 2nd the cylinders of the trawl winch burst on account of the cold weather, and during the rest of the cruise to the end of February the exploratory fishing went on with long-lines.

In the summer of 1938 Koefoed went on his last ordinary cruise to the Arctic waters with Thor Iversen. Koefoed was then 63 years old, and it was perhaps the right moment for him to enjoy a deserved rest in the sun and summer in more southern latitudes. He would perhaps also get an opportunity to work up a small part of the material which he had collected through a great number of years. There were some specific fish species, such as the *Liparids* which particularly had attracted his interest, and he had many other collections which he wanted to study, record and



Einar Koefoed (left) and Thor Iversen outside their shelter on Spitsbergen.

publish before he retired. Koefoed's wish was granted, and for many years he was able to work just as industriously in his laboratory in Bergen as he did on the many fishery expeditions to the far north.

But finally, in his 86th year, he announced to the staff that the time to officially retire had arrived. But he was quick to add that he planned to continue his work, although at a more leisurely pace, and we are all pleased to see him now at the institute.

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