

THE WORK OF BERNHARD HANTZSCH IN ARCTIC ORNITHOLOGY.¹

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RECENT investigations in the history of the Arctic, and particularly that portion centering around Baffin Island, the largest and the least known insular portion of North America, have brought to my attention a considerable mass of literature important to American ornithology and of fascinating interest, which has received far less attention than it deserves. That the work of Bernhard Hantzsch has been overlooked by American ornithologists is perhaps not surprising, for although this young and promising naturalist came to an untimely end at a remote and uncharted part of Baffin Island in 1911, his fate remained unknown for some time.

Hantzsch had made a name for himself among European ornithologists; his work on Labrador birds was important and contained much new material; but his most important work, containing a great contribution to the knowledge of an ornithological *terra incognita* with over two hundred thousand square miles of unexplored hinterland, is scarcely known on this side to any but bibliographers. The greater tragedies of Scott and other contemporary expeditions obscured his work as an Arctic explorer; the beginning of the Great War dwarfed interest in peaceful scientific pursuits; and Hantzsch's results, printed in German only, have since that time been either unavailable or overlooked by ornithologists in other countries. Even the field of his northern work, where traditions of explorers are usually remembered, is singularly barren of information. The Eskimos who accompanied Hantzsch have nearly all died, the whalers have withdrawn, the local missionary of his time has moved away, leaving little but a vague memory of some German who went far away into the interior and died there.

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In forming a correct picture of Bernhard Hantzsch, we can best arrive at a true perspective by examining his history, his works, and the testimony of his friends. As an ornithologist, he was many-sided, and in a life of barely thirty-six years, made notable contributions in various branches of his favorite study. He first gave attention to the bird life of his home and accomplished much which later bore fruit in popular articles and in a Check-List of the Birds of the Kingdom of Saxony. As a taxonomist he described new subspecies of raven and linnet from Iceland; as an oölogist he made scientific studies on the alteration and change of the egg-shell through brooding and the influence of the nesting-place; and as an ornithologist he prepared avifaunal lists of important regions, two in Europe and two in North America.

Born in Dresden, Saxony, January 12, 1875, the son of a public school master, Hantzsch followed his father's calling. He was said to have had little inclination for foreign languages, but later, according to his friend, Professor A. Jacobi, Director of the Zoological-Anthropological Museum of his native city, he made himself master of Croatian, English, and Danish. To this we must add a fair knowledge of Eskimo, as evidenced in his Labrador and Baffin Island notes. His inclinations were towards geography, natural history, and drawing, and his later writings, sketches, and maps give evidence of talents in these lines.

At an early age, Hantzsch made a long stay for his health in the Tharandt Forest, near Dresden, followed by a three-year period as assistant teacher in the village of Grillenberg in the middle of the forest, and the opportunities for study of bird life there seem to have determined him toward an ornithological career. His early ambition was to make a stay of several years in German East Africa, pursuing ornithological work, but this plan fell through for lack of funds, and his attention was later turned northward. A permanent appointment to the public school of Plauen, a suburb of Dresden, in 1897, gave him opportunity to extend his bird studies in the varied terrain of mountain, pine-barrens, and

plains of the region. The summer holidays of 1898 were spent in Slavonia, studying the waders and waterfowl among the reeds of the Danube, and connections being made with local hunters, similar trips were made there for three succeeding years, followed in 1901 by a trip to Bulgaria accompanied by Dr. Braun, a physician and ornithologist of Dresden. In Sofia, he received assistance from Dr. Paul Leverkühn, the well-known German naturalist and councillor of state, enabling him to study the birds of prey of southern Europe in the Rhodope Mountains and the Balkans.

During this time, Hantzsch had been gradually changing his ultimate goal from Africa to the North, where close study of the literature had shown him that many questions in ornithology awaited an answer. Having decided to go first to Iceland, he prepared himself linguistically and zoologically with what we are accustomed to call characteristic German thoroughness, or perhaps better, the persistence of a born naturalist, and by the use of his own modest means, spent the time from April 21 to September 8, 1903, in Iceland. Hantzsch regarded the rich results of this summer as a foundation for work in Icelandic ornithology, but learning that an extensive survey of Iceland to last four years, was being planned by Danish zoologists, he gave up further pursuit of this plan. His 'Contribution to Knowledge of the Avifauna of Iceland,' 1905, was, however, the only work on the ornithology of Iceland giving systematic and biological knowledge from the modern standpoint. Two new subspecies of birds were described by him from Iceland, *Acanthis linaria islandica*, 1904, and *Corvus corax islandicus*, 1906, in 'Ornithologische Monatsberichte.'

Other publications up to this time, and previous to his last expedition, include 'The Bird Voice,' (Natur und Haus, 1900), 'The Danube Marshes,' (Natur und Haus, 1901), 'On the Changes of the Egg-shell,' (Zeitschrift für Oölogie, 1901), 'On the Occurrence of *Locustella fluviatilis* (Wolf) in the Kingdom of Saxony,' (Ornithologische Monatsberichte, 1902), 'Poisoned Laughing Gulls,' (Ornithologische Monatsberichte, 1902), 'Contributions to Characters and Habits of our Herons,' (Ornithologische Monatsberichte, 1902), 'Breeding Birds of the Region of Königswartha (Lausitz),' (Journal für Ornithologie, 1903), 'Check-List of the

Species of Birds Observed in the Kingdom of Saxony,' (issued by the Ornithological Society of Dresden, 1903), 'On the Note of Gallinago gallinago (L.),' (Ornithologische Monatsberichte, 1904), 'The Legal Bird Protective Regulations and Their Enforcement, especially in the Kingdom of Saxony,' (Ornithologische Monatsberichte, 1904), 'On the Weight of Birds in the Flesh,' (Ornithologische Monatsberichte, 1906). The latter was a subject which Hantzsch studied faithfully and the reports of his later expeditions show that he carefully recorded the weights in grammes of all large and small birds, as well as birds' eggs, taken by him in the field, important data which are neglected by most field collectors. Other articles include 'The Migration of the Rock Ptarmigan in Northeastern Labrador,' (Deutsche Jäger-Zeitung, 1907), 'On the Study of Arctic Birds,' (Journal für Ornithologie, 1908), 'Contribution to Knowledge of the Avifauna of Northeastern Labrador,' (Journal für Ornithologie, 1908), and 'On the Preparation of Collections of Birds' Eggs.' (Natur und Haus, 1908).

Being discouraged from further work in Iceland, Hantzsch began to cast about for other northern fields. Greenland had been worked by Danish ornithologists as far as possible, and for pecuniary reasons he had to refrain from visiting uninhabited regions. Hantzsch realized that northern Asia had many secrets concealed from the ornithologist, but the disorders prevailing in the Russian Empire at that time (revolution of 1905) made that region inadvisable, or perhaps even impossible for a stranger to visit. Hence he turned to Arctic America, where as he said, a vast area has not only been little investigated from an ornithological standpoint, but the German had little to fear of being hindered in his studies, or indeed of not being supported or encouraged by the English and American owners respectively.

Hantzsch had made acquaintance with English ornithologists, and in the preface to his Labrador work speaks of the hospitality which he experienced in the home of the venerable (ehrwürdig) Newton in Cambridge, the widely-experienced (vielerfahrenen) Dresser in London, and the excellent (vortrefflichen) Hartert in Tring. He was also a fellow-passenger from Newfoundland with J. G. Millais, of Sussex, well-known for his studies on the ducks.

Having definitely decided to take up Arctic work, Hantzsch

began careful preparation, realizing, as he writes at the time, that thorough ornithological results beyond the limits of tree growth may be obtained only in a stay of years. Every expedition demands a length of time which can not be determined before setting out, while the climatic conditions of the different years are so varied that no satisfactory judgment may be reached in a single winter. He decided first of all to make a preliminary expedition and learn as much as could be accomplished in one season.

Choosing the newly-founded mission Killinek (Port Burwell), northeast of Ungava Bay, near the entrance to Hudson Strait, he obtained permission to take passage on the mission steamer "Harmony" from London to Labrador and return. Leaving London July 3, 1906, he was landed at Port Burwell August 5, after a somewhat difficult voyage to Resolution Island and through difficult ice in Hudson Strait. Here he remained until October 11, spending the time in daily ornithological work on the mountains and lakes, or along the coast in small boats with Eskimo companions. After leaving Killinek, he was enabled to stop from three to nine days at six different mission stations down the Labrador coast, namely, Rama, Hebron, Okak, Nain, Hoffenthal, and Maggovic, reaching St. Johns, Newfoundland on November 16.

Hantzsch's work entitled 'Contribution to Knowledge of the Avifauna of Northeastern Labrador,' published in two installments, 111 pages, in 'Journal für Ornithologie,' 1908, gives an excellent description of the geographical features of this rugged mountainous district, and of climatic conditions on the south side of Hudson Strait. 98 species of birds are recorded as occurring in the district, with detailed accounts of the habits of those which he was able to study carefully. Remarkably full data are given in regard to all birds preserved, weights and measurements in the flesh, colors of soft parts are described with meticulous care, and all specimens examined for external and internal parasites. Where stomach contents and parasites from Hantzsch's specimens were determined by other specialists they are quoted. While in nomenclature he follows the usage of the time, he avers that there is still much to be learned in the investigation of the subspecies and their geographical distribution. Showing familiar-

ity with the ornithological literature of the region, he frequently cites the works of Ludwig Kumlien (1879), Lucien M. Turner (1886), H. B. Bigelow (1902), John Macoun (1903-1904), C. W. G. Eifrig (1905), A. P. Low (1904-05-06), F. M. Chapman (1906), Charles W. Townsend and Glover M. Allen (1907). The missionary, W. Perrett, who for years was interested in the birds of Labrador, helped Hantzsch considerably, and his observations are quoted extensively. Hantzsch freely criticizes some of these old records as being uncertain, contradictory, and in many cases patently incorrect, but lack of special research material prevented him from following up all of the doubtful records. He calls attention to the fact that outside of the 'Correspondence Notes from Labrador,' by G. H. von Schubert in 1844 ("Correspondenz Nachrichten aus Labrador," *Gelehrte Anzeigen der Bayerischen Akademie der Wissenschaften*, Bd. 18, München, 1844), this is the first work in German on ornithological conditions in Labrador.

Not the least point of interest in Hantzsch's Labrador report, as it is of his later Baffin Island work, is the complete list of the native Eskimo names for each species, with their derivation in most cases. The value of such vernacular names is obvious to anyone who has attempted to get accurate information of the occurrence of species from the aborigines. Hantzsch had also a musical ear, and was particularly good at describing bird notes and bird songs. He seems in many cases to enter into the spirit of the bird and its harmony with the surroundings, and in fact many of his passages have a peculiar lyrical beauty of their own.

In a paper of this length time is lacking to go into details of a bird list. A few new records are given for the region, such as Kingbird and Redstart at Port Burwell, but as Hantzsch himself says, "The number of wandering visitors of the kind, which have slight significance for the avifauna of the district, will naturally never be fully exhausted." Of disputed forms, Hantzsch gives detailed descriptions of several specimens of Mandt's Guillemot, which he records as *Cepphus grylle mandtii*, being fully convinced that it is a subspecies of the Black Guillemot, *Cepphus grylle*, and not a distinct species.

He made inquiries about the Great Auk, but could learn nothing from natives or from ruins of old Eskimo houses. He suggests

examining collections of bones from old Eskimo graves, now in museums or being made, for evidences of the occurrence of the Great Auk west of Davis Strait.

As to the Gulls, Glaucous Gulls and others, Hantzsch cautions extreme care in sight identifications, laying especial stress upon the exceptionally strong bleaching influence of the sunlight in the spring when snow and ice are still about. The variations in the size of these northern species of Gulls and Fulmars, he attributes to the extremely variable weather conditions of these inhospitable regions, which influence the breeding affairs of these birds from the laying of the egg to the flight of the young. Gulls may often starve for days at a time when the coast is blocked with ice, but Gulls nesting on bird mountains do not suffer to such an extent as they are able to feed on the eggs and young of other birds. Individual variations as well as inheritance may increase the range of variation still more, and Hantzsch is very sceptical of separations within these species which are based only on slight variations in size.

Of the Greenland Eiders, he notes the considerable proportion of Eider Ducks in a district which have not reached the breeding age, and follows some other ornithologists in assuming that these Ducks do not breed until four or five years of age. Among probable occurrences he mentions the Bernicle Goose, *Branta leucopsis*, a skin of which from northeastern Labrador was offered for sale in Moeschler's catalogue of 1871. This record seems probable, as the National Museum of Canada received a specimen from southern Baffin Island in 1924. Other references to Moeschler, who apparently obtained considerable bird material from German missionaries in Labrador, lead one to suppose that there may be hidden Labrador records in old private collections and the smaller museums of Europe. Hantzsch also quotes from his correspondence several unpublished records of Baffin Island birds in the Marischal College of Aberdeen, collected by Crawford Noble.

Hantzsch's notes are not all prosaic, as for instance his graphic account of hunting Rock Ptarmigan with dog-sled on the fresh snow, or his rhapsody on the White-rumped Sandpiper around the little pools on an autumn evening, where he admires the birds and goes out of his way to avoid disturbing them. Sentiment,

however, does not prevent Hantzsch, who is fully alert to the modern necessity for extensive series in systematic work, from collecting 32 skins of the latter species and examining the contents of 38 stomachs of the same. He adduces further evidence, that like some other shore birds, the White-rumped Sandpiper, the most common migrant Sandpiper, has the migration led by the males, while the females which have brought up young remain a little longer, and still later the young seem to travel alone.

He restricts the name of *Hierofalco gyrfalco islandus* Brunn. to the Iceland bird, and as the Labrador birds, according to Hantzsch, are considerable whiter, he retains for them the name *Hierofalco gyrfalco candicans* (Gm.). He considers the Labrador Redpoll, *Acanthis linaria fuscescens* (Coues) to be a good subspecies, although not recognized by Ridgway nor the A. O. U. 'Check-List.'

Concerning the Rock Ptarmigan, one of the most important birds of the region, Hantzsch considers that records of the subspecies and their geographical distribution are not at all clear, and stresses again the necessity of large series for comparison. As with the Gulls, fading occurs in the strong light, and it is not sufficient to compare summer birds with summer birds, but we should have specimens from the same months and newly-moulted breeding birds from different districts. He does not believe that many of the Greenland Ptarmigan, *Lagopus rupestris reinhardti*, come even to Baffin Island, although different authors give *reinhardti* as inhabiting the northern parts of Labrador northward to Greenland. These statements, he thinks, are due to insufficiently sharp comparison of the birds of the two districts, and to be founded on nothing but theory.

In addition to his work on the birds, Hantzsch published in 1909, 'Contributions to Knowledge of Northeastern Labrador,' in 'Communications of the Geographical Society of Dresden,' giving a detailed description of this little known territory, some information on the geology, and a detailed description of the native population which shows clearly his active interest in the Eskimos as well as the thoroughness and scope of his investigations, the whole forming a valuable monograph on the region.

Having shown his capabilities on the Labrador trip, Hantzsch

finally succeeded in securing the necessary funds to carry out his well-considered plan for a three-years' stay on Baffin Island. Among the prominent contributors were the Society of Friends of Nature Investigation at Berlin (*Gesellschaft Naturforschender Freunde zu Berlin*), the Rudolf-Virchow-Foundation at Berlin, His Majesty, King Friedrich-August of Saxony, and various Dresden patrons, the sum provided amounting to about 15000 marks, a modest sum for the work planned, but sufficient for Hantzsch to assemble what he considered a satisfactory outfit.

Briefly his plan was to secure two or three Eskimo families in the southeast of Baffin Island, and with these explore Nettilling Lake, the largest lake in the interior of the island, the western parts of which had never been seen by a white man. From there he expected to reach the coast of Fox Channel and after wintering there, proceed northward on the east coast of Fox Channel, spending the third winter with the Eskimos of Fury and Hecla Strait. It was to be left to the future how the north coast of Baffin Island could be reached. The primary purpose of the expedition was to be the investigation of Arctic ornithology, and as his friend Jacobi says, "Concern for this chief object of his expedition repeatedly exercised a deciding influence on the decisions of Hantzsch, and exerted on the course of his journey an influence fatal in many respects. Nevertheless, the fulfillment of his chief purpose led him to undertakings which served geography directly, particularly the investigation of the large unknown area around the shores of Foxe Channel. He had always before him the prospect of filling in a rather large white spot on the map of the earth.

Almost as important to Hantzsch appeared the ethnological study of the natives where they were still in a comparatively primitive condition. His Labrador trip had led him to believe that only a close residence with the natives would give the wished-for results and he arranged to carry out his plans as much as possible with the help of Eskimos, living with them in order to gain their confidence and with that an intimate knowledge of their culture. Lastly, the total sum at his disposal was modest, and Hantzsch considered that this sort of life offered the only guarantee of carrying out his purpose in a satisfactory manner. This idea must

have been epidemic at the time, as the present writer happened to be following a similar illusion in a different quarter simultaneously.

On July 4, 1909, Hantzsch left his home in Dresden for London, preparing to take passage on the Dutch schooner "Janthina Agatha," which was to take supplies to the employes of the whaling station at Kikkerton on Cumberland Sound, on the southeast coast of Baffin Island. The voyage was a disastrous one, as the schooner after consuming nearly two months in making the passage from Dundee, collided with ice in Cumberland Sound on September 26 and sank with most of its cargo. Hantzsch lost the greater part of his provisions and supplies, including his photographic outfit and much of his necessary scientific equipment. It was a staggering blow at the very outset of the expedition, but Hantzsch bravely determined to make the best of it. It might be mentioned here that when news of his plight reached his home, the Geographical Society of Dresden with the help of members and friends, sent some equipment two years later, but Hantzsch was dead before it arrived at Baffin Island.

The crew of the schooner could not be sent home on account of the lateness of the season, and the whole party finally found refuge in the little mission house at Blacklead Island. The winter was spent under very disagreeable conditions due to crowding and shortage of food. Hantzsch carried on natural history work as best he could, and finally persuaded some Eskimos to accompany him into the interior of the island. Leaving the coast April 23, 1910, with great exertion they hauled a small boat across to Nettilling Lake, which they reached June 21. Previous to this time, the only white men who had ever seen the lake were Dr. Franz Boas, the ethnologist, and later William Duval, a resident whaler, and Crawford Noble, owner of the whaling station on Cumberland Sound, who had reached the lake on summer hunting trips. Hantzsch reached Tikkerakdjuak on the south side of the lake on July 3 and remained there until August 15. It should be remembered that Nettilling Lake is not open for navigation until early in August and winter starts in September.

The party suffered many delays on account of heavy storms, but reached the Kokdjuak (the "Great River" draining Nettilling Lake) on August 30, and after many hindrances due to difficult

water, swift currents, shallows, and countless islands, they reached Foxe Channel at the mouth of the river on September 30, Hantzsch thus being the first white man to cross Baffin Island. Great discomfort was caused by the almost total lack of fuel, and much of the food had to be eaten raw, as the party had been obliged to start with an exceedingly small amount of imported food, and they were virtually "living off the country." The writer can speak with feeling and understanding of the disadvantages connected with this method of living, which affords far more opportunities for acquiring culture of a kind than of bringing back more tangible results. Hantzsch was unable to collect large series of small birds on account of scarcity of ammunition, and few large birds on account of their weight and bulk. Fortunately, the species in Baffin Island were few, and usually well-marked, Hantzsch knew his birds well, and he was able to keep full and accurate notes.

Originally he had planned the rest of the journey along the coast by boat, but this proved wholly impracticable, as ice was lining the flat shores for a great distance out, so the party left the boat and pressed farther north where they hoped to find better hunting grounds. They went north about 130 miles with their sleds and established winter quarters, but game conditions were bad, both on land and sea. They procured very few seals, and caribou were virtually absent from the land during the winter months. The best efforts of the Eskimo hunters proved of little effect, and the party was reduced to the direst extremities. From the middle of November until December 18 nothing was killed except two hares. Old tent rings and stone buildings showed that at earlier times the place had been visited by Eskimos, according to the opinion of his companions, the "Tunit," a race without whose rediscovery no orthodox Arctic expedition up to the present time may be considered complete. This absence of animal life corresponds exactly with the conditions met by J. D. Soper in the same region early in 1926.

In early spring a few caribou came back and some were killed. On April 16 a march northward was begun and on May 8, Hantzsch had reached the most northern part of his journey, about 137 miles from the last winter camp and 267 miles north of the Koukd-



Photos by J. Bond

NESTING SITE, AND EGGS OF *MICROSIPHONORHIS*, GONAVE ISLAND, HAITI.

juak. On this trip signs of illness began to show on the leader as well as his Eskimo companions, aggravated if not caused primarily by malnutrition. Hantzsch's faithful Eskimos carried him a bit farther on the way home, but conditions became worse and he died about the beginning of June, 1911 and was buried on the shores of Fox Channel. The Eskimos brought out his note-books, journals, and specimens to the missionary Greenshield at Blacklead Island, and they were ultimately received by his friends in Germany. The journals show that Hantzsch kept up his observations until near the end, and had summarized much of his results. Two letters from his Eskimo companions to Greenshield tell the rest of the story and prove their devotion to Hantzsch as a friend. The Eskimo Aggakdjuk finishes naively:

"We made a nice grave of stones and it is in a good place. His body can not be disturbed by foxes or a wolf. We did this too, since we wished to pray to God while we put the body in the grave, we used the prayers to God for the burial of the dead, that he, the Gracious God, would take him up on high. I know certainly, that he is with God, because his faith was sufficient."

The publications on Hantzsch's Baffin Island work were largely posthumous, and we can thank his many friends for putting so much on record. The 'Dresdener Anzeiger' in 1911, published extracts from Hantzsch's letters up to the time of his sled trip to the interior of Baffin Island. For the general accounts we are largely indebted to Jacobi and Rosenmüller. The Geographical Society of Dresden in 1913 published a preliminary report in his memory: "Bernhard Hantzsch and his last Scientific Expedition to Baffinland," by Dr. M. Rosenmüller. A brief account of Hantzsch's life work was given by his friend, Professor Dr. A. Jacobi, Director of the Zoological-Anthropological Museum of Dresden, in 'Journal für Ornithologie,' 1913. Jacobi considered Hantzsch's work on Iceland ornithology as his most important work, with the Labrador work next, but much was expected from the Baffin Island collections. In the same publication is given a short memorial address by Dr. Herman Schalow, author of the classic 'Vögel der Arktis,' at the November, 1913, meeting of the Deutsche Ornithologische Gesellschaft, referring to Hantzsch as a modest, unpretentious friend, of whom ornithology was justified in expecting great things.

As to the technical papers, Dr. Paul Matschie and Dr. Erich Hesse are particularly to be commended for letting Hantzsch's observations speak for themselves, refraining, as Hesse said, from drawing precipitate conclusions from portions of the partial result, which would be least of all the intention of the cautious Hantzsch.

The first technical paper to appear on the Baffin Island work was 'Observations on the Mammals of Baffinland,' by Bernhard Hantzsch, with an introduction by Dr. Paul Matschie, in 'Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin,' 1913. Matschie lauds Hantzsch as a sound investigator and an excellent observer, noting particularly the painstaking, accurate manner with which he supplied every specimen with all the data useful for scientific purposes, and that his journals contain very noteworthy observations on the mammals of Baffin Island, fifteen species being discussed. The notes are published without essential alteration together with several illustrations after drawings by Hantzsch.

The zoological collections from Baffin Island, including mammals, birds, and eggs, are in the possession of the Royal Zoological Museum of Berlin. Hantzsch's early collections in Saxon ornithology are in the Zoological-Anthropological Museum of Dresden, which also took over the zoological-anthropological results of the Labrador trip. The main part of the Icelandic collection was willed to the museum of his native city which had already taken the specimens into its care. An egg collection of European (Slavonian) eggs, which including the northern eggs, numbered 10,000 specimens, was with the exception of the latter, bought by a patron for the Dresden Heimatkundliche Schulmuseum.

The ornithological collection from Baffin Island, being the principal object of the expedition, naturally received the greatest attention. Hantzsch had more or less extended notes on 37 species of birds of Baffin Island, represented by skins or skulls of 34 species, and eggs of 17 species. The total number of skins was 108, and of eggs 675.

These notes were first published under the title of 'Ornithological Journal. Observations during a Journey in Baffinland,' by

Bernhard Hantzsch, in 'Proceedings of the Society of Friends of Nature Investigation at Berlin,' a society with a record of over a century and a half of natural history work. This was a verbatim transcript, with one or two corrections, of Hantzsch's field notes, with a brief introduction by Dr. Anton Reichenow, known to some of our members as an Honorary Fellow of the American Ornithologists' Union. Professor Reichenow states: "The preparation of this collection and the exact notes about each specimen on the accompanying labels, give witness anew of the conscientiousness and the care which the deceased spent upon his work, and of the zeal which filled him in his self-appointed task. . . . Going into greater detail concerning the value of the diary notes, it is sufficient to remark that they concern a land in which ornithological observations have never yet been made."

A thorough systematic and technical study of the Hantzsch material was made later by Dr. Erich Hesse, who compared the specimens with the other material in the Royal Zoological Museum in Berlin, and published the results under the title 'Bernhard Hantzsch's Ornithological Results in Baffinland,' by Dr. Erich Hesse, 'Journal für Ornithologie,' 1915. Hesse republished Hantzsch's field notes in this paper, as he considered them essential as a supplement on the biological side. In addition to this, Hesse added discussions concerning the authenticating specimens, as far as such existed, and transcripts of the labels on the specimens. Some of these concerned labels on specimens collected by Eskimos and others for Hantzsch. Besides his ornithological journal, Hantzsch left behind a separate 'Catalogue of the Birds' Eggs Collected,' in which number, date, locality, weight, and other remarks are contained. This was added to the main part as an appendix, 'Oölogical-nidological Results.' The measurement of the eggs was done in the Museum.

As a further tribute to the memory of the explorer, a Bernhard-Hantzsch-Foundation was established in 1913, partly by a donation of 4000 marks by his parents, brother and sister, and partly from a sum of 1150 marks donated by Hantzsch's friends for his use during the expedition and transferred with their consent to this fund, to be devoted to assisting exploration in geography, natural history, and ethnology, in the North Polar regions by performance

of exploratory journeys and by publication of scientific results. Preference is to be given to candidates of Saxon nationality, and next to subjects of the German Empire.

Hesse sums up the work of Hantzsch on Baffin Island in part as follows: "The gain which science owes to Hantzsch, consists above all in the exploration of the land region hitherto unknown, in the exact observations made there, and in the skins appertaining to them, the information on new breeding grounds, and the biological observations. All this fills a great gap in our knowledge of the geographical distribution of the birds in the huge Arctic North American land-complex, the more so as Baffinland represents an integral, substantial part of the same, not an isolated region, as of other Arctic lands, such as the Spitzbergen archipelago, Iceland, or even Greenland."

Hantzsch alone was in a position to estimate closely the differences in the character of the lands traversed from a faunistic standpoint. The eventual conclusions are unfortunately lost to us. We only deplore that this talented explorer should have been unable to complete his life's work, but the results achieved as original contributions from a land region never before crossed by a white man, will forever remain of lasting value.

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