

A historical review of bird marking.

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(Med et dansk resume: En historisk oversigt over ringmærkningen.)

The year 1949 saw the 50th anniversary of bird ringing by MORTENSEN and it is interesting to give on this occasion a short review of the experiments in bird marking made both before and after the introduction of MORTENSEN's method.

When HANS CHRISTIAN CORNELIUS MORTENSEN put his first ring on the leg of a bird in 1899, a new ornithological method — bird ringing — was born. It is true, that long before MORTENSEN there were some experiments in bird marking but it was the Danish ornithologist who first created the true scientific method. The most important and essential detail in bird marking, introduced by MORTENSEN, was the use of a serial number engraved on each ring. By this the point of emphasis in the study of bird migration was transferred from the species (as in phaenology) to the individual, to the single bird, where the place of origin and the place of recovery are exactly known.

I discriminate between "bird ringing" and "bird marking". The first signifies the method of using rings with engraved serial numbers on each ring, the second signifies the use of various means to mark birds, *e. g.* small plates, neck rings, rings without serial numbers, etc.

If with MORTENSEN begins the history of bird ringing, all earlier experiments in bird marking may be classed as belonging to the "prehistoric" epoch of this method. Some of the early bird marking "experiments", published many years ago, must be treated as legends or as products of pure fantasy. Since, however, this is a historical review and even the old fantastic stories bear witness to the interest of people in bird migration, they deserve mention.

A complete record of all old marking experiments was never compiled. Even the recent paper by WOOD (1945) does

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not include many of the short notes especially to be found in European literature. Doubtless the information which I can give in this paper by no means exhausts the subject, although I have tried to omit nothing of importance. I have checked personally the majority of the sources of information given by various authors. Further research and investigation in the vast field provided by old literature is very desirable.

MORTENSEN announced his experiments as early as 1899 and published his first results soon after. His method became well known among ornithologists. Notwithstanding this, some "experiments" in bird marking were made even when MORTENSEN's correct method was already known and recognised. Some private persons are using their rings but without the serial numbers even to day. I, personally, recognize these experiments in "markings", though they were performed after 1899.

The following review is arranged in chronological sequence where the exact date of an experiment is known. Where it is not known, it is arranged after the time of publication or, in the approximate epoch in which it was probably carried out.

The earliest notes about bird marking are to be found in Roman writings.

218—201 B. C.

QUINTUS FABIUS PICTOR recorded in his "*Annales*" that "when a Roman garrison was besieged by the Ligurians (during the Second Punic War, 218—201 B. C.) a swallow taken from her nestlings was brought to him for him to indicate by knots made on a thread tied to its foot how many days later help would arrive and a sortie must be made". (WOOD, 1945; for Latin text see RÜPPELL, 1934).

Before 77 A. D.

PLINY in his "*Naturalis Historiae Liber Decimus*" completed in 77 A. D. declared — "A man of knightly rank at Volterra, who owned a racing-in-hand (chariot) used to catch swallows and take them with him to Rome (135 miles distant South-East) and dispatch them to take the news of a win to his friends, as they returned to the same nest; they had the winning colors painted on them". (WOOD, 1945; for Latin text see RÜPPELL, 1934).

Before 1219.

CAESARIUS VON HEISTERBACH, prior of the Cistercian monastery in Koenigswinter, Germany, reported in his "*Dialogus magnus visionum et miraculorum*" edited between 1219 and 1223, in the chapter entitled "*Quod hyrundines semper solita repetant habitacula*" that a man took an adult swallow from its nest and attached a small sheet of parchment to its foot. The "letter" bore the inscription: "Oh, swallow, where do you live in winter?". This bird returned home next spring and brought another "letter" with an answer: "In Asia, in home of Petrus". The exact time and place of this "experiment" is not known. (KUH, 1940).

Between 1275 and 1295.

MARCO POLO, who travelled in Asia between 1275 and 1295, in writing on falconry, stated (according to BONI, 1845): "Each bird belonging to the sovereign and the barons has a tablet of silver on its feet, with its name and that of the owner inscribed thereon so that wherever caught it can be returned to him". (WOOD, 1945).

Between 1552 and 1625.

THOMAS NUTTAL (1832) stated that "a Canary Falcon sent to the Duke of Lerma, returned in sixteen hours from Andalusia to the island of Teneriffe, a distance of 750 miles".

The same case is quoted by JOHN BACHMAN (1836).

This suggests that this particular bird must have carried an identifying mark. No dates were given, but the best-known Duke of Lerma lived from 1552 to 1625. (WOOD, 1945).

Between 1585 and 1610.

JOHN BACHMAN (1836) said: "The story of the falcon of HENRY THE SECOND (reigned 1547—1559) is well known, which pursuing with eagerness one of the small species of bustards at Fontainebleau, was taken the following day at Malta, and recognized by the ring which she bore".

ROBERT MUDIE (1834) reported: "There are many instances recorded of the amazing power of flight in falcons (*Falco peregrinus*); one of the most remarkable is that of one belonging to HENRY IV. of France (reigned 1585—1610), which was found in Malta, 1350 miles from Fontainebleau, within twenty-four hours of quitting the latter place".

WILLIAM SMILEY (1836) writes about the same bird: "A falcon which belonged to HENRY IV of France escaped from Fontainebleau and in twenty-four hours was found in Malta".

Obviously BACHMAN's information concerned the same bird. WOOD (1945) writes that "since Fontainebleau received its first extreme development by HENRY IV of France, who was fond of sporting events, it is likely that he, rather than the more war-minded HENRY II of France, was this early bird bander".

1600.

JOHANNES COLERUS in his "*Calendarium perpetuum et Libri oeconomici*" edited in 1600 wrote: "Where the storks migrate is strictly speaking not known. But if someone would investigate this question, he should attach a small tin plate to the stork's foot inscribed in the Greek or Turkish language. He should ask the people among whom the storks winter to inform him where they live and possibly in this manner the question could be solved". (KOENIG-FORCHHEIM, 1930).

1677 (1647).

On 18th May 1647 a Heron was caught by a Falcon belonging to King WLADYSLAW IV of Poland. The bird was released and after 30 years it was caught again on 19th July 1677 by a Falcon which belonged to King JOHN III of Poland, the conqueror of Vienna. This unusual event was noted personally by King JOHN III in his diary. The Heron was recognised by a ring marked with a date and placed on the neck of the bird. (GLOGER, 1902).

1675 (1573).

J. H. GURNEY (1899) wrote: "It is on record that a (Mute) Swan died at Alkmaar, a town near Amsterdam, Holland, in 1675, which bore a metal collar on which was inscribed the date "1573" indicating a life of 102 years. After a considerable search for a verification of this story, it has been satisfactorily traced by Mr. F. E. BLAAUW and Mr. BRUINVIS to the original record in the "Chronyk van Nedenblik door Dirk Burger van Schoorl, 1762".

1708—1709.

GILBERT WHITE (1860) recorded: "As some people were shooting in the parish of Trotton, in the county of Sussex, they

killed a duck in that dreadful winter, 1708—9, with a silver collar about its neck, on which were engraven the arms of the King of Denmark. This anecdote the rector of Trotton at that time has often told to a near relation of mine; and, to the best of my remembrance, the collar was in the possession of the rector". WHITE himself added in a footnote: "I have read a like anecdote of a swan".

1710.

"The first record of a bird marked on the tarsus that has come to my attention is that of a Great Grey Heron captured in Germany in 1710 carrying several metal rings, one of which (so the reference states) had been attached in Turkey several years previously". (LINCOLN, 1921).

Unfortunately I was not able to find the source of this information. This case is also unknown to Dr. R. DROST, the well known German ornithologist and director of the Ornithological Station Heligoland (DROST *in litt.*).

1719.

The Rev. GOTTLIEB ROEHLICHEN of Grębocin near Toruń, Poland, intended to mark the White Storks in an effort to learn where they spent the winter. He wanted to put on the leg, bill or under the wing of adult birds a mark or ring, but he was unable to put his idea into practice because the Storks did not continue breed in the nest on his house. ROEHLICHEN described his unsuccessfull attempt in the "Bresslauer Sammlung von Natur- und Medizin Geschichten", 1722, p. 283, and added that someone would be more fortunate in carrying out his idea. (SCHENK, 1924 and QUANTZ, 1925).

1723 (1651).

On 15th May, when the Austian Imperial Court diverted itself with falconry at Laxenburg near Vienna, a Heron was caught bearing on its leg a ring of the Emperor FERDINAND (died 1657) with an engraved date of 1651. The bird was released with a new ring inscribed "Carolus IV" and "1723". This story is reported in a communiqué in the "Bresslauer Sammlung von Natur- und Medizin Geschichten" of 1723, p. 568. (SCHENK, 1924 and STRESEMANN, 1924).

1724 (1319).

In the same "Bresslauer Sammlung von Natur- und Medizin Geschichten" of June 1724, appeared the following communiqué: "Vienna 24th June. The Heron caught recently by a Falcon must have been caught previously in the year 1319 as stated on the ring. Therefore this bird must have been 405 years old and it is much older than the one reported in May 1723, provided there has been no error in the calculation". (SCHENK, 1924).

1729.

J. G. KEYSLER (1740) reported in a letter dated 21st June 1729: "In this Palace (Starenberg near Munich, Bavaria) the court often diverts itself with hunting the heron and every year, at the conclusion of it, a heron, whose good fortune it has been to be taken alive, is, for memorial set at liberty with a silver ring on its foot, on which the name of the reigning elector is engraved. No longer than last spring one of these birds was taken a second time having on its ring the name of Duke FERDINAND, grandfather to the present elector, so that it has survived its former adventure by more than sixty years; they put a ring with the present elector's name upon its leg, and gave it its liberty again".

Dr. G. LANDAU in his "Beitraege zur Geschichte der Jagd und Falknerei in Deutschland" (Kassel, 1849, p. 307) reported that in 1731 in Bavaria a Falcon caught a Heron with a ring of Kurfuerst FERDINAND II. "As FERDINAND II died in 1679 — wrote LANDAU — the Heron must be more than sixty years old. The bird was marked with a new ring of the then reigning Kurfuerst and released". (PETRY, 1939).

Both events refer evidently to the same bird and it is doubtful it is a new case. Indeed, DROST & SCHÜZ (1939), drew the attention to the fact that there was only one Kurfuerst FERDINAND (MARIA) of Bavaria (1651—1679) and, that the information mentioned might refer to the Heron bearing the ring of the Emperor FERDINAND II (see *antea*). In my opinion this possibility is more than probable and I would draw attention to the obvious coincidence of the style of both reports. If the case is really a new one, NESTLE (1939) gave as an explanation that the symbol given as "II" by LANDAU (KEYSLER did

not give the ring inscription) was a mistake and should be read rather as "M" for MARIA.

Between 1751 and 1791.

In a footnote, apparently by the Rev. RICHARD POLWHALE, to a book published in 1796 entitled "Essays, by a Society of Gentlemen, at Exeter", London n. d., p. 135, the following is recorded: "The late Lord ORFORD (we are told) once loosed a heron and set his hawks after it. The contest between the heron and the hawks was long and full of sport; when at length, the hawks were victorious, and brought the heron to the ground. The Heron, however, was not hurt and in gratitude for the diversion which this bird had afforded his Lordship, he ordered a gold ring to be made, with "E. Orford" and the date of the year engraved upon it, and put it about the heron's leg and gave him his liberty. About ten years after, Lord ORFORD received a letter, enclosing the above ring, from the Imperial Ambassador, who informed his Lordship that the Emperor had taken the enclosed ring from the leg of a heron which his hawks had killed, and seeing "E. Orford" upon the ring, and observing the date, had sent it to the Earl by his Ambassador, as a great curiosity. The ring was much bruised and discolored, but the inscription perfect. This incident hath a romantic air and for a moment, we can scarcely regard the event as fortuitous".

GEORGE WALPOLE, third Earl of Orford succeeded to the family titles in March 1751 and died early in December 1791. The Emperor who recovered ORFORD's bird was probably JOSEPH II, crowned 1765. The place of ringing was probably the estate of Houghton near King's Lynn, Norfolk, or on the Suffolk-Cambridgeshire border. The recovery presumably took place somewhere in the Habsburg domains, Belgium, Tyrol, Austria, Hungary, Bohemia or Milan. (FOGG, 1932).

Before 1763.

In his book "Vorstellung der Vögel in Teutschland" (Berlin, 1763) JOHANN LEONHARD FRISCH reported he had tied coloured threads around the feet of swallows. FRISCH wanted to check up whether the swallows winter at the bottom of lakes according to the common belief at the time. If so, Frisch postulated,

the red threads, dyed in water colour, would lose colour in the water. When the birds returned next spring and the dye was not washed out, Frisch concluded they had not hibernated under water. They spent the winter in hot countries, probably in Italy, suggested Frisch. (SEILKOPF, 1915).

1763.

BIGLAND (1828) quoted M. FONTAINE who said "in 1763 a buzzard was brought to me After some time I fastened a small bell to its talons, and also attached on its breast a bit of copper with my name engraved on it. I then gave it entire liberty. BIGLAND added that "this bird became tame and remained locally".

1767 (1735 or 1737).

B. WHITE (PENNANT, 1776) speaking of the Heron, reported that "by a recent instance of one that was taken in Holland by a Hawk belonging to the Stadtholder, its longevity is again confirmed, the bird having a silver plate fastened to one leg, with an inscription, importing it had been struck before by the Elector of Cologne's hawks in 1735".

O. GOLDSMITH (1804) wrote about the same case and added that the bird was thirty-five years old when caught.

J. H. GURNEY (1899) stated "In the Annual Register" for 1767 under date July 7th, readers are informed that: As the Prince Stadtholder (of Holland) was taking diversion of hawking, he caught a Heron with a brass inscription round its legs, setting forth that it had been taken and released by the Elector of Cologne in the year 1737".

1773 (1610).

"History tells of a Falcon caught in the Southern Ocean in 1772 which carried around its neck a parchment bearing the inscription "Jacob 1610", giving rise to the logical conclusion that the bird captured has been banded in the year 1610 and was one hundred and sixty two years old and that Falcons probably live to a very ripe old age". (LA FLEUR, 1932).

Obviously the same bird is quoted by GURNEY (1899). "In the "Gentleman's Magazine" for 1793, p. 181, it is related how a Hawk, probably *Falco peregrinus*, had been found at the Cape of Good Hope and brought from thence by one of the India

ships, having on its neck a gold collar thus engraved "This goodlie Hawk doth belong to his Most Excellent Majestie James Kinge of England. A. D. 1610".

1776.

In the Essex Chronicle for 1766 there was a note that a Swan was shot on Foulness Island on February 1776. This bird was marked with a gold medal fastened to its neck with the inscription "Le Roi Dane". The inscription is supposed to indicate that the bird was marked in Denmark. (WITHERY, 1926).

1797.

T. BEWICK (1805) reported that "in the winter of 1797, the gamekeeper of E. M. PLEYDELL, Esq. of Whatcombe, in Dorsetshire, brought him a Woodcock, which he had caught in a net for rabbits, alive and unhurt. Mr. P. scratched the date upon a bit of thin brass, and bent it round the Woodcock's leg, and let it fly. In December the next year, Mr. PLEYDELL shot this bird with the brass about its leg in the very same wood where it had been first caught by the gamekeeper".

1800 or 1829.

BARON VAN DER HEIDEN OF HUIS TE BAAK, Holland, marked young geese and ducks with brass rings put round their necks. He wanted to learn the migration routes of these birds and to know their longevity. One of his birds, a White-fronted Goose, marked with a ring inscribed "Huis te Baak by Zutphen in Gelderland 1800" was shot in July 1835 near Danzig. This incident was reported by Rev. BOCK of Danzig in his Report at his private Scholl for the year 1845. (BRAUN, 1907).

SCHÜZ & WEIGOLD (1931) suggested that the date engraved on the ring should be rather read as 1829.

Little is known concerning the "menagerie" of Baron VAN DER HEIJDE(N) VAAN BAAK. (M. J. TEKKE *in litt.*).

1803.

J. J. AUDUBON (1834 and 1840) reported: "I attached light threads to their (Pewee Flycatcher = Phoebe (*Sayornis phoebe*)) legs: these they invariably removed, either with their bills, or with the assistance of their parents. I renewed them, however, until I found the little fellows habituated to them; and at last, when they were about to leave the nest, I fixed a light

silver thread to the leg of each, loose enough not to hurt the part, but so fastened that no exertions of theirs could remove it. . . . At the season when the Pewee returns to Pennsylvania, I had the satisfaction to observe those of the cave in and about it. . . . Having caught several of these birds on the nest, I had pleasure of finding two of them had the little ring on the leg”.

These experiments were made about 1803, at Mill Grove Farm, in eastern Pennsylvania, U. S. A.

1804.

Professor BRUGMANN in Leyden, Holland, in autumn 1804 marked a brood of young White Storks with an unknown mark attached to their legs. According to further information the Storks appeared next spring in the same number at the old nest but no bird had any mark on its leg. This unsuccessful experiment is described by MEYER & WOLF in their book “*Taschenbuch der deutschen Vogelkunde*” edited in 1810 (LUCANUS, 1929).

Nothing else could be traced concerning the activity in bird marking by BRUGMANN (M. J. TEKKE *in litt.*).

1813.

Accordingly to an unknown German newspaper, a young White Stork hatched between Hamburg and Harburg, Germany, was trapped and marked with a yellow ribbon tied to its neck. Next spring the Stork returned home and besides the ribbon it brought a paper with a statement that it had been trapped in Tellichery, Madras, India, on 10th February 1814. This experiment was reported in a Hungarian newspaper “*Nemzeti Tarsalködo*” of 1830 (p. 378) edited in Kolozsvar (SCHENK, 1921).

Before 1816.

In a Polish newspaper edited in Wilno in 1816 we find a note that many years before a Polish nobleman hung a small iron plate inscribed “*Haec ciconia ex Polonia*” on the neck of an adult White Stork. Next spring the Stork returned home but instead of the iron plate it bore a gold one with the inscription “*India cum donis remittit ciconiam Polonis*”. The happy nobleman put away the exotic gift and next autumn hung another iron plate on the neck of the Stork with an inscrip-

tion similar to the previous one. The bird returned home again next spring but this time it brought a copper plate inscribed "*Grata Japonia pro haec ciconia*" (JANOTA, 1876).

Before 1820.

J. F. NAUMANN (1820) reported that over several years he marked Common Buzzards with a copper ring on which his name and the place and date of capture were engraved. As the aim of these markings was the investigation of changes in the plumage of the birds and not their migration, NAUMANN added to the above inscriptions a special sign appropriate to the particular variety. The marked birds were released and NAUMANN got several recoveries of his birds. Unfortunately, complained NAUMANN, he never got the whole bird but only the rings and thus his aim, to investigate the changes of plumage, was not reached.

The idea of marking birds for the study of migration was not in his mind.

After 1820.

In the "Tidsskrift för Jägare och Naturforskare", 1832—34, P. A. EDGREN described a pair of Great Tits, which one spring in the late 1820's were marked with a silk thread round their necks and then released from the Swedish estate of Sköfde, where they had been in captivity during the winter. Both birds returned in November, to be released again the next spring. The following autumn one of the birds (the female) returned, but the male bird did not on this occasion return. (SCHAANNING, 1920).

Before 1822.

H. SCHLIEMANN (born 1822) in his Autobiography (2nd edition, Leipzig, 1936, p. 13) reported that in his childhood he had heard a story of two men who attached to a White Stork a small sheet of parchment on which a request had been written to let them know where that bird wintered. It occurred at Ankershagen, Mecklemburg-Schwerin in Germany. The Stork returned home next spring and brought another sheet of parchment inscribed with a verse in broken German:

Mecklemburg-Schwerin is to us not known.
The land where the Stork spent the winter
Is called Saint John's Land.

(NESTLE, 1939).

1822.

The consul RIBBENTROP of Landsberg, Germany, marked some birds living in his garden. One of these birds, a bird of prey bearing a plate inscribed "Landsberg in Preussen 1822", was shot in June 1825 in Damascus, Syria. This experiment is reported in "Preussische Provinzial Blätter" of 1834 (XII, p. 273) according John Madox's book "Excursion to the Holy Land, Egypt, etc." edited in London in 1834. (BRAUN, 1907).

1829.

SALVIN & BRODRICK (1873) showed "a ring which one of the authors saw upon a Heron that was taken during the spring of 1844, near Hockwold in Norfolk, by Mr. NEWCOMES' Hawks. This Heron, at the time it was taken, was on its "passage" to the Didlington Heronry, and, from the engraved date (1829), had evidently been taken fifteen years before, near the same locality, by Colonel WILSON . . . This bird having also been taken the previous year by Mr. NEWCOME, was again released, with three rings upon its leg, an honour which probably few herons would covet".

1835.

NOWICKI in the "Preussische Provinzial Blätter", 1838 (XX, p. 281) reported that at the end of September 1835 he obtained a White Stork which had been shot, bearing on its neck a small brass plate, inscribed "Faule Laak Danzig 1835". The bird was shot at Podgórze in Poland. (BRAUN, 1907).

1835.

Dr. A. KOCH of Heiligenbeil, former East Prussia, reported in "Preussische Provinzial Blätter", 1835 (XIV, p. 307), that he marked three young White Storks with small, oval plates inscribed "Heiligenbeil in Ostpr. d. 3. August 1835. Maccab. 12. v. 17. 18.". The result of this experiment is not known. (BRAUN, 1907).

Before 1836.

J. BACHMAN (1836) referred to "a Bluebird (*Sialia sialis*) that was marked so as to be known, which built its nest for ten successive years, in a box that had been prepared for the Purple Martin."

Before 1840.

W. YARREL (1845) quoted the experiments of Dr. JENNER. "It is a remarkable fact — says Dr. JENNER — that the Swallow tribe, and probably, many other birds, which absent themselves at stated periods, should return annually to the same spot to build their nests. The Swift, which for nine months has some distant region to roam in, was selected for the purpose of an experiment to ascertain this with precision. At a farmhouse in this neighbourhood (Berkeley, Gloucestershire) I procured several Swifts, and by taking off two claws from the foot of twelve, I fixed upon them an indelible mark. The following year their nesting places were examined in the evening when they had retired to roost, and there I found several of the marked birds. The second and third year a similar search was made, and did not fail to produce some of those which were marked. I now ceased to make an annual search, but at the expiration of seven years, a cat was seen to bring a bird into the farmer's kitchen, and this also proved to be one of those marked for experiment".

1843.

The Dutch newspaper "Oprechte Donderdagsche Haarlemse Courant" of October 12th, 1843, contained the following news. "Haarlem, October 11th. This summer in Alphen, province of Zuid Holland, three young White Storks were marked with small copper bands round their necks. On these bands the name of the municipality and the year 1843 were engraved. On the 19th of August the young birds were still in Alphen, but not afterwards. 7 or 8 days later the nest was left by the parent birds. On one of the first days of September the burgo-master of Alphen received a letter from Rocquefort, near Mont de Marsan, department des Landes, in France, 25 hours north of the Spanish frontier, containing the message that one of the young Storks had been shot in that municipality". (v. O., 1915).

1845.

W. YARREL (1845) quoted from the daily press (Morning Post of 22nd July 1845) that "a Swallow was shot the other day at Salterhebble, near this town (Halifax, Yorkshire), and upon examining the little bird, a small piece of parchment was found

tied to one of its legs. The parchment is about one and half inches in length, and an eighth of an inch wide. Upon one side is written "J. Rovina y Clavi"; and upon the reverse, "Barcelona, 10th March, 1845".

Before 1850.

General Count DEMONCEAUX stated, regarding the falconry at the Royal Park Loo in Holland, that if a Heron has not been killed by a hawk, if a wing has not been brooken, or the bird has not been seriously wounded, it is liberated after some of its black crest feathers have been robbed. Usually these feathers were presented to the person who arrived first at the place as a trophy of the falconry. Before liberating the Heron, a metal band was put around the leg of the bird, on which the name of the Club, the place of the flight, the year, and the number of the birds caught in that season, were inscribed. These marked birds have been found in Algeria. (N. J. A. P. H. VAN ES, 1918. I am indebted to Mr. M. J. TEKKE, den Haag, for this information).

1864.

Around the 1860's a number of people, including the Finnish ornithologist A. NORDMANN, carried out the marking of birds, without, however, anything detailed being known about their "method" or results other than an account that captured Bullfinches were "marked and let lose in the spring of 1864 at Helsingfors". (SCHAANNING, 1920).

The bird marking activity of Prof. A. NORDMANN is not known to the Finnish ornithologists. (Prof. P. PALMGREN *in litt.*).

1866.

C. MILLET (1866) proposed a scheme for marking migrant birds by a very complicated system of differently coloured threads put as a collar on the neck of birds, the basal part of this collar to consist of threads in the national colours of each country, *e. g.* for France in blue, white and red. In each country the particular zones should be distinguished by using various kinds of threads, so for the northern zone — wollen threads, for the central zone — wollen and silk ones and for the southern zone — silk ones. The particular or important stations in each zone might be distinguished by the number of knots made on

the collar. To mark the year of marking, MILLET proposed to use another, coloured silk thread wrapped up on the collar. The conventional colours for the particular years should be as follows: 1866 — white, 1867 — black, 1868 — blue, 1869 — navy-blue, 1870 — pale yellow, 1871 — dark yellow, 1872 — pale green, 1873 — dark green, 1874 — crimson, 1875 — vermillon. MILLET added it should be possible to simplify this method using instead of threads a thin rubber collar, on which the locality, the country, the year and the month of marking could be written. To those inscriptions a serial number might be added showing the total number of birds marked in particular year. MILLET's plan was never carried out.

1874.

According to an anonymous article (1884) one GERD GROTE of Hagbüll in Zealand, Denmark, attached to the leg of an adult White Stork a medallion containing a small sheet of paper inscribed in English and French: "From a Pinetree in the North to a Palmtree in the East" and added his name, address and the date. The Stork returned home next spring and brought on its foot a small red box containing a paper inscribed in English: "To the Pinetree in the North from a twig of heather blown to the South" and "Benares, Chutnee-Bungalows, 2nd January 1875". No name was signed. Next autumn the same Stork took a greeting to an unknown person again and, when it returned home, brought an answer from her. But when the bird returned home the third time no message was attached to its leg. One evening in July an elderly, handsome gentleman visited GERD. He was an Englishman, Colonel EDWIN MAC NARE, the father of Miss MAC NARE who "corresponded" with Gerd via the Stork. Gerd went with his guest to Copenhagen, made the acquaintance of his daughter and shortly afterwards the young couple returned to Hagbüll. The Stork lived for some years and returned home annually. When Gerd's son was six the Stork did not fly away and died a few days.

1880.

E. F. VON HOMEYER (1881) recorded that the Post Officer DETTE at Berka a. d. Werra, Germany, attached a small brass

plate inscribed "Reichspost Berka a. W. Germania den 27/7 1880. This marked Stork was shot on 24th April 1881 at Fornells, province of Gerona in Catalonia, Spain.

1883 (1827).

In the "Times" of 8th September 1883 there is a note quoted after Berlin "Post" that "some days ago at Fürstenwald, in the province of Brandenburg, a field labourer heard a dog howling in a most dismal manner. Running in the direction from whence came the sounds he saw a large bird perched on the back of the watch dog. . . . A shot killed him. . . . The bird was an eagle, of the species known as *Aquila imperialis*¹), and measured seven feet between the tips of his wings. The dark, almost black, plumage, with the snow white shoulders, gave a hint as to his age. On his left foot, just above the claws, was a ring made of a strong gold plate, on which were cut the letters, still quite visible, "H. Ks. o. k." underneath which was the word "Eperjes", and on the other side the date "10. 9. 1827". Eperjes is a town in Upper Hungary, not very far from the Northern Carpathians. Evidently that eagle had a history". (see also GURNEY, 1899).

1886.

In the "Field" of 29th May 1886 we can find the following note signed "A. E. G.". "One day last week two dead Swifts were found, not far each from other, in the town of New Ross. Tied under the tail of one of them was a small piece of paper, on which was written "Mary Elsam, British Square, Suakim, Egypt 3—10—86".

USHER & WARREN (1900) quoted the above note but changed the date to "10. 3. 86". It is obvious that if this event really took place, a mistake occurred in the note in the "Field". The bird found in May could not, of course, has been marked in the October of the same year.

R. M. BARRINGTON (1913) quoting this case added — "since I interviewed the man who found the bird and I am satisfied the occurrence took place as above stated, it cannot be harmful to mention this event".

H. F. WITHERBY (1913) remarked on Barrington's note "We

1) = *Aquila heliaca*.

have always regarded the record of the Swift with a piece of paper "tied under the tail" as having its origin in a practical joke perpetrated perhaps by a soldier recently returned from the Sudan. Is there any proof that the piece of paper was not tied on after the Swift's death? What proof is there that it was tied on at Suakin? As the Mahdi was in possession of the Sudan at that time and had advanced not far from Suakin, it may have been a clumsy attempt to make people suppose that a Mary Elsam was imprisoned there. But such "records", being of no science value whatever, should not be seriously considered".

1837 (1840).

According to the Japanese newspaper called the "Hiogo News" an Albatross was taken by a ship "Duchess of Argyll", Capt. HOARD, near Cape Horn, with a compass-case attached to its neck, which contained the information that it had been previously caught in the middle of the North Atlantic (38° N. and 40° 14' W.) by Ambrose Cohan of an American vessel, the "Columbus", on May 8, 1840. A new case was affixed, and it was again dated and released, in January or February 1887. (ROSENBERG 1887).

1837.

"An Albatross which was found dying on the beach at Fremantle, Western Australia, in the year 1877, had round its neck a tin on which some French sailors had scratched a message stating that they had been shipwrecked on the Crozet Islands over 3500 miles away. Inquiries elicited the fact that the bird had followed a sailing ship to Fremantle from the neighbourhood of those islands". (ALEXANDER 1928).

1838.

A Peregrine Falcon was found at Cape Caneveral, near Palm Beach, Florida, U. S. A., on 10th December 1888, with a tin cap-box attached to its neck by a wire and bearing a message within dated October 10, 1888. The bird had been released from the Frying Pan Shoals Lightship off Cape Fear slightly less than 200 miles from the place where it was found (WOOD, 1945).

1890.

H. CHR. C. MORTENSEN who introduced the modern bird ringing method in 1899, described his first marking experiments as follows. "In 1890 I found it easy to catch starlings that reared their young near my house in Viborg, and I got the idea of marking some of them with a thin strip of zinc on the foot, the strip bearing an inscription in ink such as "Viborg" and the year of marking. It proved, however, that the first starlings I marked in this way was troubled somewhat by the mark and the second likewise, though I had made the strip considerably narrower than before. I did not continue these preliminary experiments. — In the meantime aluminium had come on the market at a reasonable price, and in 1898 I marked experimentally an adult Red-breasted Merganser (*Mergus serrator*) caught by chance in a fishing net and given me by the pupils K. SCHMIDT and R. SCHNEEVOIGT; this time I used one of the rings then coming into general use in marking tame hens. As the bird carried the ring without any trouble and as, in addition, we learnt shortly after where it had been shot, I felt inclined to make the experiment on a larger scale. In 1899 I first of all marked a couple of young starlings ready to fly, which I took from their nest and kept in a cage for some time to see how they reacted to the ring. As it did not seem to trouble them in the least I set them free and then, in the course of the same autumn caught 162 adult starlings, which had visited my starling boxes, ringed them and let them go.

This was the beginning of the wild-bird marking, which has later been developed on a large scale and with extremely interesting results all over Europe." (MORTENSEN, 1912 and JESPERSEN & TÅNING, 1950).

1891.

Lord WILLIAM PERCY began marking young Woodcock at Alnwick, Northumberland, with rings bearing the symbol "N" and the date (year). From 1891 to 1908 375 birds were marked and 58 of them were recovered. PERCY published the results of his experiments in 1909.

In his experiments in bird marking PERCY outstripped MORTENSEN, who began ringing birds in 1899, in a serious attempt

to study bird migration. But since PERCY did not use serial numbers on his rings, the honour of the creation of the modern bird ringing method falls to HANS CHRISTIAN CORNELIUS MORTENSEN.

1892.

RUDOLF C. SLATIN PASHA (1896) reported that while in captivity at the Mahdists, the Khaliffa Abdullahi showed him a brass ring about four centimeters in diameter to which was attached a small metal case, about the size and shape of a revolver cartridge. This ring had been found attached to the neck of a Crane killed by a Shaigi near Dongola, Sudan. In the metal case there were two small papers inscribed in German, French, English and Russian as follows: "This Crane has been bred and brought up on my estate at Ascania Nova, in the province of Tauridae, in South Russia. Whoever catches or kills this bird is requested to communicate with me and inform me where it occurred. September, 1892. FR. FALZ-FEIN".

The commentary of the Khaliffa to the fact was interesting and characteristic: "This is one of the many devilries of those unbelievers — he said — who waste their time in such useless nonsense. A Mohammedan would never attempt to do such a thing".

1896.

A Swallow caught on 16th May 1896 at Antwerp, Belgium, by A. VERSCHUREN was marked "with a bit of colour" and transported by train to Compiègne and released there the next day. After one hour and eight minutes this bird returned home. (LANCASTER, 1896/97).

1896.

On the 25th and 28th August 1896 WM. S. BRUCE of the Jackson-Harmsworth Expedition marked "with a "J" nineteen young Brünnich's Guillemots and twenty two young Kittiwakes in the Franz Josef Land. None of the marked birds have been captured. (EAGLE CLARKE, 1898 and GURNEY, 1899).

1897 (1646).

According to the "Naturalien Cabinet" of 5th October 1897, a Royal or Golden Eagle had recently been shot at Eszeg, in Slavonia, with a steel ring around its neck engraved with the

arms and name of a Slavonian family, and above them the date 1646. (GURNEY, 1899).

1898.

Colonel FEILDEN had some birds marked at Holkam in Norfolk with rings stamped "Holkam 1898". Miss HAMOND marked forty four young Common Terns at the same place with rings inscribed "1898". One of them has turned up already. (GURNEY, 1899).

1902.

On 11th July 1902 a young White Stork was caught at Weseram, Brandenburg, Germany, and released with a "letter" attached to its wing on a pink ribbon. The "letter", signed by M. PAULI, the 19 years old daughter of the pastor, K. PAULI, his son and H. PAULI, his wife, contained a request to the finder to kindly inform the signatories where the bird was found. This marked Stork was shot on 24th August 1902 near Hermanstadt, Rumania. (REICHENOW, 1902).

1904.

Reverend VINCENT KARMOZY at Koszegszerdahely, Hungary, caught two young Swallows and attached to their necks a little green bag containing the following verse written on a small sheet of paper

Libenter mitto te avis

Quousque portat te tua vis

Die gloriam Deo in excelsis,

Homnibus in terra bonae voluntatis.

Hungaria (Europa). 1904. 19. Sept. 11½ hora ante mer.

Vincentius Karmosy parochus szerdahelyensis.

One of these Swallows was caught as a breeding-bird on 23rd April 1905 at a distance of 22 km. from Koszegszerdahely. (VON CHERNEL, 1916).

1904.

J. H. GURNEY had 40 young and 51 old Gannets on the Bass Rock, Scotland, marked with a metal ring bearing the legend "1904 Bass Rock". Three of these birds were shortly afterwards caught not far from the Bass, but none of the others have been reported. (WITHERBY, 1908).

1904.

Commencing with the year 1904 the keepers at Shanbally Castle, Co. Tipperary, Ireland, have marked a few young Woodcock each spring. The rings used for the purpose all bear the letters "SY. 04" but the year in which any particular ring was used can be identified. (Hickley, 1909).

No further information on the result of those markings is available.

1905.

Lord JOHN HAMILTON began marking young Woodcock at Baron's Court, Co. Tyrone, Ireland, using rings inscribed "B. C. 05" and so on according to date. From 1905 to 1908 211 birds were marked and 21 of them recovered. HAMILTON twice published the results of his experiments, in 1908 and 1909.

1906.

In 1906 Sir R. GRAHAM of Netherby, Cumberland, began marking various ducks, chiefly hand-reared Teals, using rings bearing the inscription "R. G." and the date or else "1908 W" or "1908 H" (so I am informed). The marking was carried on until 1926 and some of the marked birds were recovered. Unfortunately, exact information about these experiments is not available. (GRAHAM 1908 *partim*).

1906.

In the course of his studies on the speed of bird flight CURT LOOS marked in 1906 some Swallows, Sand-Martins and Stars with aniline paint in Bohemia. The adult birds were taken away from their nests and released in various places. Many of those birds returned home. (Loos, 1907).

1907.

On 16th May 1908 A. LÜTHOFF of Mehlsacken, Kanton Luzern, Switzerland, caught a House Martin bearing on its neck a small pipe of *Sambucus nigra*. In the pipe there was a small sheet of paper inscribed in Spanish: "I spent the summer at Louis Albert, Vilabertran, 25th August 1907". Further investigation proved that a farmer LOUIS ALBERT really lived at Vilabertran in the district of Gerona, in Catalonia, Spain, and the House Martins had bred at his home for the past eight years. On 25th August 1907 Albert caught an adult bird, attached

his message to it and let it fly. (DAUT & HESS, 1914, and SCHÜZ & WEIGOLD, 1931).

1907.

In course of studies at Tortugas Is., Florida, U. S. A., in 1907 J. B. WATSON marked adult Sooty Terns with oil paint and took them for varying distances from their nests, and then released them. The marked birds returned to the colony. These experiments were continued in 1910 and 1913 and the same method of marking was used. (WATSON, 1908, and WATSON & LASHLEY, 1915).

1909.

In 1909 JACK MINER of Kingsville, Ontario, Canada, marked his first duck with a hand made aluminium ring inscribed "Box 48 Kingsville, Ontario". This first marked bird was shot on 14th January 1910 near Anderson, South Carolina, U. S. A. In spring 1912 MINER marked four Mallards and in the years following more and more ducks and geese were marked with Miner's rings. Since 1915 on the one side of the ring was a stamp "Write Box 48, Kingsville, Ontario" and on the other a selected verse of scripture. In 1932 JACK MINER, who died in 1944, created the Jack Miner Migratory Bird Foundation, based in his estate of 400 acres near Kingsville, devoted exclusively to the welfare of bird life. The birds have been marked at Kingsville uninterruptedly since JACK MINER's time and more than 50000 different ducks and 45000 Canada Geese have been marked, as well as thousands of Mourning Doves and other birds. Very many of the marked birds were recovered.

JACK MINER's organisation is the only one in the whole world which does not use serial numbers engraved on the rings. Thus it must be considered as belonging rather to "marking" than "ringing" experiments, although it is a serious scientific investigation. (MINER, 1935, and M. F. MINER *in litt.*).

1909.

Dr. L. GAIN, the naturalist of the Charcot's Antarctic Expedition reported: "When the expedition arrived at Petermann's Island in February 1909, I put some celluloid rings of various colours on the right leg of several young and old penguins (*Pygoscelis adeliae*) according to the age of birds. In October

and November, 1909, on the return of the birds to their rookeries, I had the good fortune to recover a score of adults marked by me nine months before. I did not, however, recover any of the young, which seems to indicate that they do not return to their birthplace and do not mate until two years old. Since the return of the expedition to France I have learned that in November and December 1910, some ringed birds were recovered by whalers who, during the summer months, went in search of Cetaceans in those regions". (GAIN, 1913).

1910.

Colonel W. W. ASHLEY began marking young Woodcock at Classiebawn, Co. Sligo, Ireland. The rings used in 1910 were marked "A. C. 10", in 1911 — "W. A. Sligo 1911" and in 1912 — "W. A. Sligo 12". In 1913 two rings were used for each bird, one marked "W. Ashley" and other "Sligo 13"; this practice was continued in the subsequent years with the necessary change in the date figure. In the years 1910—1928 659 young Woodcocks were marked and 92 of them recovered. The results of ASHLEY's experiments were published by S. R. DOUGLAS, in 1917 and 1929.

1914.

On 1st April 1914, a *Quelea quelea* was trapped at Dakar, Senegal, bearing on its leg a small scroll of parchment attached with a green thread, inscribed in Arabic characters "la Allah il Allah Mohammed ressou Allah". The origin of this "marking" is unknown. (M. H., 1914).

1915.

On 30th May 1915, a Swallow was trapped at Schilda near Liebenwerda in Saxony, bearing on its neck a small bag containing a paper inscribed in Spanish "I am nearly without bred, (I) furthered surrender within 6 days inclusive to-day". This case was never solved. (THIENEMANN, 1916).

1922.

In 1922 J. P. BURKITT of Enniskillen, Co. Fermanagh, Ireland, began marking Robins using his own hand-made rings without address or serial numbers. From October 1922 to February 1926 about 100 birds were marked and many of them were recovered several times in the place of ringing. BURKITT's aim

was to distinguish individual birds through field glasses and his rings were designed only for this purpose. BURKITT's aluminium rings were about 0.18 inches high and the dark rings 0.3 high. He used variations of rings up to three on a leg or up to four on both legs. (BURKITT, 1925 *et seq.*).

BURKITT was the first observer of birds to use coloured rings, and must be given full credit for his valuable and original work.

1925.

In 1925 ROGER DAUMIERE of Brussels, Belgium, marked some Buzzards with rings inscribed "R. D. 25". His rings were originally poultry ones, used to mark young pheasants reared in captivity and released on his estate in the Ardennes. No results of his experiments are known. (DUPOND, 1925).

Before 1929.

A. L. THOMSON (1929) stated: "It is understood that a number of young Woodcock were marked by Captain P. D. PERCIVAL of Hazlewood, Co. Sligo, Ireland, with rings inscribed "W. H. Sligo" some years ago".

I was unable to obtain any further information about these experiments.

Around 1929.

The same A. L. THOMSON (1929) recorded that "it is understood that some Woodcock have been recently marked by Lord STAFFORD at Swynnerton Park, Staffordshire, with private rings and that a few have been recorded locally".

My efforts to get some more information about these markings were unsuccessful.

1931 (1914).

A collaborator of the Hungarian Ornithological Institute killed on 8th April 1931 a Peregrine Falcon bearing, attached to its left leg, a silver medal with an image of King NIKITA of Montenegro on the one side, and with the arms of the Kingdom of Montenegro with a date "1914" on the other side. The Hungarian ornithologists had no evidence of King's NIKITA falconry and this case was never traced. (ANONYM, 1931).

1931.

About 11th May 1931 a Swallow was caught at Grussan,

near Landshut in Silesia, Germany (now Poland), with a small piece of red paper printed in Italian attached to its wing. The investigation proved that it was a piece of an Italian theatre programme. The origin of this "marking" was never traced. (SCHÜZ, 1931).

1935.

In April 1935 a Saker-Falcon was caught at Goldino, near Moscow, Russia, bearing on its legs small bells and a metal plate inscribed "Graf MENSENDORFF, Oberstation, Biberich-Riss, Wuerttemberg". This bird, originated from Dalmatia, and had escaped from its owner on 8th April 1934, while in falconry. (DEMENTIEFF, 1936).

1940.

Mrs. KLARA KLAUS, a housewife of Seestadt near Brüx (Most), Czechoslovakia, caught, on 12th April 1940, a Swallow which had attached to its leg with a thin copper wire a small sheet of paper inscribed in German "Greeting to my dear German Fatherland" and below the name and "Otawi. D. S. W. Afrika" (= German South-West Africa). Dr. ERNST SCHÜZ checked up the case and it seems most probable that a German farmer living in the South West Africa really sent his greetings to his fighting country in this unusual way. (Schüz, 1941).

1942.

On 24th April 1942 a Swallow was caught at Eichham near Teisendorf, Upper Bavaria, Germany, bearing on its leg a small piece of linen, size $8\frac{1}{2} \times 3$ cm., inscribed with an ink pencil. The inscription was smeared and only the word "Linosa" was still legible. Further investigation revealed that an Italian soldier Antonio Cottone caught a Swallow on 8th March 1942 on the isle of Linosa, tied the inscribed piece of linen to its leg and let it fly. (DROST, 1942).

At the beginning of 20th century and even in more recent years various mysteriously ringed birds have been recovered in nearly every country in Europe and America. In the ornithological literature and the daily press there are many records of these unofficial markings carried out by unknown people. As, nowadays, bird ringing activity is carried on by

authorized institutes, such "wild" marking experiments should be strictly prohibited. They may yield useful results sometimes, but as a rule these rings with inadequate addresses are found on birds but never traced to their origin.

Beside the old and recent markings enumerated in this paper, some events are recorded in literature concerning the bearing by falcons of bells attached to their feet. These bells were not meant as special marks but they were attached to birds in order to assist the falconers to find them. I have not considered these cases, and I have not considered the results of successful flight by messenger pigeons which appear as early as in ancient literature.

Glancing over the above review one cannot resist the impression that some of the older events, published by various authors in various countries and various times, must have a common origin, particularly in so far as the European White Storks which were to be found in India and the very aged Herons bearing the royal memorial rings are concerned.

The earliest case of an "Indian" Stork comes from Poland (see 1816 above)—the exact date of this event is not known. The exactly dated case of 1814 (see 1813 above) related to a German Stork. An Indian journey of a marked Stork revives again in 1875 in a romantic story of GERD GROTE's Stork from Denmark (see 1874). I do not suppose that any of these three cases really took place. Among the very many White Storks ringed recently in Europe only two birds have been found east of their normal migration route to any marked degree. A Hungarian Stork was recovered in October of its first year at Muscat, Oman, south-eastern Arabia, and a German bird was found in December near Bikaner, Rajputana, India. These two birds are exceptions among many thousands of Storks ringed in Europe and recovered in their normal migratory areas.

The authenticity of the oldest case is made suspicious by the second "journey" of the same bird to Japan. If European Stork might in exceptional circumstances penetrate to India, a migration to Japan is absolutely out of question.

In my opinion the Indian recoveries of Storks are the products of pure fantasy, like the other old stories concerning written messages brought by birds from their wintering places

(see 1219 and 1822 above). India has always been an attractive and romantic land for Europeans and it was very easy to place there the winter home of the native and beloved Storks. Once it was born, the legend was revived in various places, like the old Aristotelean fable about the swallows wintering at the bottom of lakes.

Another interesting, and repeated case of presumably common origin, concerns the Herons. Records of birds marked as survivors of royal falconry come from Poland in 1677 (30 years old), from Austria in 1723 (72 years old) and in 1724 (405 years old), from Bavaria in 1729 or 1731 (over 60 years), from England about 1760 (10 years old), and from Holland in 1767 (35 years old).

It is difficult to assume that all these cases really occurred. Even if true, the age reached by those birds is quite improbable. The modern ringing of Herons has proved that this species is not very long lived, and among the very many birds ringed only a few reached the age of over 15 years. It is possible, in my opinion, that a particular recovery of a marked Heron really took place somewhere and, that this event, being known among the interested falconers, was repeated artificially in other countries in order to give pleasure and surprise to the sovereign. The second Austrian Heron (405 years old) seems to me in particular an exaggerated joke of courtier.

If we admit a common origin for those recoveries, it should be interesting to trace the oldest case of this kind as being the source of subsequent repetitions.

Some old trials and proposals to investigate the problem of migration deserve special mention. The most interesting among them are those of COLERUS (1600) and ROEHLICHEN's (1719) and more recently that of MILLET (1866). The scheme proposed by MILLET is rather little known to ornithologists, and even if we consider it as too complicated, it deserves mention as the first fully detailed plan of investigation. MILLET envisaged the use of serial numbers which were to be written on the proposed rubber collars — the detail which, put in practice by MORTENSEN in 1899, gave the latter the title of founder of the modern bird ringing method.

I should like to close this paper with an appeal to ornitholo-

gists and historians. In old literature there is, without doubt, some more evidence of ancient bird marking. It is quite impossible for a single student to investigate all the possible works, books, articles and memoirs, but it is possible that in the course of other studies these unknown events may be revealed. If so, they should be published. Even if they are not revelations of sensational value, they deserve publication. *Historia est magistra vitae.*

APPENDIX

1767.

According to a note of February 21st, 1773, in "Den Viborger Samler" (I, No. 8), a Kite bearing a brass ring inscribed "F. II. L. Z. H. Wabern 1767. No. 12", was shot near Viborg, Denmark, in the Spring of 1772. The inscription meant, apparently, "Friedrich II, Landgraf zu Hessen, Wabern" (south of Kassel, Germany). (LANGE, 1942).

1905.

A number of Woodcock were marked by the late Lord ARDILAUN of Cong, Galway, Ireland, with rings inscribed "A. Cong" and with date (year). One marked as young bird at Cong in 1910 was recovered on December 28th of that year in Portugal. (THOMSON, 1929).

No further information is available.

1939.

In November, 1939, an adult Capercaillie was caught at Krumbach, Oberpullendorf, Austria, marked with a red celluloid ring on its right leg and released on 15th November. On 29th September 1942 the same bird, with a red ring on its leg, was seen at Weidmannsfeld, Miessbach b. Gutenstein, Austria. The distance between both localities is 40 km. ("L.", 1942, and BINDER, 1942).

Before 1940.

According to a note by E. P. TRATZ (1940), a Capercaillie was caught by workers in a forest at Untersberg near Salzburg, Austria. Since no suitable marking ring was available the bird was marked with a piece of watch chain. This marking was reported to the local forestry authority. In the following spring a note appeared in a newspaper, that in Böhmer-

wald (a distance of about 120 km) a Capercaillie was shot bearing on its leg a piece of watch chain.

DANSK RESUMÉ¹⁾

En historisk oversigt over ringmærkningen.

I 1949 var det 50 år siden, at H. CHR. C. MORTENSEN påbegyndte sin ringmærkning, hvorved en ny gren af ornithologien blev startet. Ringmærkningens historie begynder således med MORTENSEN, men før hans tid var der dog foretaget adskillige mærkninger af fugle, i reglen for kuriositetens skyld, men mange af beretningerne derom hører sikkert hjemme i myternes verden. En oversigt over alle disse "forsøg" i tidens løb er imidlertid aldrig samlet, ikke engang i Woods historiske overblik (1945), og dette er derfor forsøgt her, selvom forf. er klar over at oversigten ikke er fuldstændig. Nedenfor er kort omtalt de vigtigste mærkninger (ikke blot med ringe men også med metalplader, farver m. m.):

218—201 f. Chr. Under den 2den Puniske Krig, da en romersk garnison var belejret, blev en Landsvale bragt til QUINTUS FABIUS PICTOR med en snor om benet; et antal knuder på snoren skulle angive hvor mange dage det varede, inden hjælpen kunne nå frem.

Før år 77. En adelsmand fra Volterra tog under væddeløbene i Rom Landsvaler, fangede på reden, med dertil (135 miles). Fuglene vendte hjem til reden, påmalede sejrherrens farver.

Før 1219. Ifl. CAESARIUS v. HEISTERBACH fangede en tysker en Landsvale på reden og fæstnede om foden et stykke pergament med inskriptionen: "O, Svale, hvor lever Du om vinteren?" Svalen vendte næste sommer tilbage, medbringende svaret: "I Asien, i Peters hjem".

Mellem 1275 og 1295. MARCO POLO fortæller, at fyrsterne i Asien altid har anbragt en sølvplade på foden af deres falke (under falkejagten), med angivelse af ejerens navn, så at falcken altid kan bringes tilbage til ham, hvor den end fanges.

Mellem 1552 og 1625. THOMAS NUTTALL fortæller, at en falk fra de Kanariske Øer på 16 timer vendte hjem fra Andalusien til Teneriffa, en afstand på 750 miles. Dette involverer, at falcken må have båret et kende-mærke.

Mellem 1585 og 1610. En falk tilhørende Henrik IV af Frankrig undslap fra Fontainebleu og blev 24 timer senere fundet på Malta.

1600. JOHANNES COLERUS foreslår at fæstne en metalplade på Storkes fødder, med græsk eller tyrkisk tekst, for at få oplysning om, hvorhen Storken trækker.

1677 (1647). En Hejre fanget 1647 og løsladt, genfangedes 30 år senere. Fuglen var kendelig på en ring om halsen, forsynet med dato.

1675 (1573). En Knopsvane, som døde 1675, havde om halsen en metalring med årstallet 1573, hvilket antyder en alder på 102 år.

¹⁾ udarbejdet af Red.

1708-09. GILBERT WHITE meddeler, at en and fanget i Sussex havde en sølvring om halsen, hvorpå den danske konges våben var indgraveret.

1710. Det første tilfælde af mærkning med ring om benet synes at være en Fiskehejre, fanget i Tyskland 1710, men tilfældet er usikkert.

1719. Pastor ROEHLICHEN i Polen forsøger uden held mærkning af Storke.

1723 og 1724. Andre eksempler på fangede Hejrer med ring om benet. En øjensynlig 60 år gammel Hejre fangedes 1729 eller 1731. En anden Hejre, mærket i England, fangedes 10 år senere på kontinentet.

Før 1763. J. L. FRISCH bandt farvede tråde om benet på Landsvaler for at se, om de overvintrede på bunden af søer, i hvilket tilfælde trædernes farve måtte være forsvundet næste år. Da dette ikke var tilfældet, sluttede FRISCH, at Svalerne overvintrede i de varme lande.

1763. En Musvåge forsynedes med en klokke om foden og metalplade med navn på brystet. Den forblev i egnen for mærkningen.

1767. Et nyt eksempel på en 35 år gammel Fiskehejre taget under falkejagt.

1772. En falk fanget i det Indiske Ocean ringmærket 1610.

1776. En Knopsvane med guldring om halsen, hvis inskription tydede på, at fuglen var mærket i Danmark.

1797. En Skovsneppe med messingring om benet, genfanget året efter mærkningen, meddelt af T. BEWICK.

1800. Gæs og ænder mærkedes i Holland med metalringe om halsen. En Blisgås fangedes i 1835 ved Danzig.

1803. J. J. AUDUBON fæstnede små sølvtråde om benene på den nordamerikanske Phoebe (*Sayornis phoebe*) og iagttog, at de mærkede fugle vendte tilbage næste sommer.

1804—16. Forskellige mærkninger af Storke.

Før 1820. J. F. NAUMANN meddeler at han i mange år har mærket Musvåger med kobberringe for at følge deres fældning; han fik adskillige genfangster.

Efter 1820. Musviter mærkede med silketråd om halsen i Sverige; der konstateredes, at fuglene vendte tilbage.

Før 1822. H. SCHLIEMANN fortæller om en Stork, mærket med et stykke pergament om benet, hvorpå ønskedes oplysning om, hvor Storken overvintrede. Den vendte tilbage med meddelelse om, at den overvintrede i "St. Johns Land".

1822. En rovfugl mærket i Preussen blev skudt tre år efter i Damasus, Syrien.

1829. En Hejre med metalring, genfanget 15 år senere.

1835. En Stork med metalring om halsen, skudt samme år. Samme år mærkedes 3 Storkeunger.

1836. J. BACHMAN omtaler mærkning af Hyttesanger (*Sialia sialis*).

Før 1840. JENNER mærkede Sejlere ved at klippe kloleddet af på to af tærerne. Genfangster på rederne gjordes indtil 7 år efter.

1843. Tre unge storke mærkedes med kobberringe om halsen. De for-

lod Haarlem (Holland) ca. 25. aug., og en genfangedes i Sydfrankrig i begyndelsen af sept.

1845. En Landsvale skudt i England mærket med et stykke pergament om foden, påsat i Barcelona samme forår.

Før 1850. Hejrer mærkede med metalring om foden genfundet i Algier.

1864. Dompaper mærkedes ved Helsingfors.

1866. C. MILLET foreslår en indviklet metode til at mærke trækfugle.

1874. En Stork forsynedes på Sjælland med en medaillon, hvori lagdes et brev, som blev besvaret fra Indien og gav anledning til en romantisk kærlighedshistorie.

1880. En Stork mærket i Tyskland, genfanget i Spanien.

1883. En Kejserørn (*Aquila heliaca*) fanget i Brandenburg, med guldring om foden, mærket i Ungarn 56 år tidligere.

1886. To Sejlere fundet døde i England, med et stykke papir bundet til halefjerene, øjensynligt stammende fra Sudan.

1887. To tilfælde af mærkede Albatrosser.

1888. En Vandrefalk mærket med en meddelelse i metalæske om halsen, genfanget 200 miles fra mærkningsstedet, 10 dage senere (ved Floridas kyst).

1890. MORTENSEN begynder med sine første mærkninger, der dog først systematisk finder sted fra 1899.

1891. Lord WILLIAM PERCY mærker Skovsnepper, ialt 375, med metalringe og får 58 genfangster. Ringene var dog kun mærkede med et bogstav og årstal og forsøget kan således ikke gøre krav på at være det første videnskabelige ringmærknings-eksperiment.

1892. En Trane mærket ved Krim med en metalring om halsen, genfanget i Sudan, meddelt af SLATIN PASHA.

1896. En Landsvale mærket med farve til transportforsøg i Belgien.

1896. Et antal Kortnæbde Lomvier og Rider mærket på Franz Josephs Land. Ingen genfangster.

1897. En Kongeørn med ring om halsen mærket i 1646, genfanget 1897.

1898. FEILDEN o. a. mærker diverse fugle med metalringe, blot med inskription "Holkam 1898".

1902. En Stork forsynet med et brev, fastbundet til vingen, løsladt i Brandenburg, genfanget i Rumænien.

1904. Pastor V. KAROSY i Ungarn fæstnede om halsen på 2 unger af Landsvale en ring med et latinsk vers. Året efter genfangedes den ene som ynglefugl 22 km borte.

1904. GURNEY ringmærker 91 Suler. Samme år mærkes i England Skovsnepper og forskellige ænder.

1906. C. Loos mærker Landsvaler, Digesvaler og Stære med farver, til transportforsøg.

1907. En spanier sender meddelelse med en Bysvale, der findes i Schweiz.

1907. WATSON mærker Turner ved Tortugas Øerne, Florida til transportforsøg; Turnerne mærkedes med oliefarve.

1909. JACK MINER i Canada påbegynder mærkning, der siden er fortsat og nu omfatter over 100000 fugle; ringene har dog ikke løbenummer, kun adresse.

1909. Mærkning af Pengviner med celluloidringe af forskellig farve.

1910. ASHLEY mærker Skovsnepper på Irland.

1914. En Blodnæbsvæver (*Quelea quelea*) fanges i Senegal med en pergamentrulle om benet med arabisk indskrift.

1915. En Landsvale fanget i Sachsen, med meddelelse på spansk i en lille æske bundet om halsen.

1922. BURKITT begynder at mærke Rødhalse med farvede ringe for at skelne de individuelle fugle under sine iagttagelser. Det er første gang farveringe anvendes til videnskabelige forsøg.

1925. Nogle Musvåger mærkes i Belgien med hønseringe.

1929. To mærkninger af Skovsnepper, henholdsvis på Irland og i England.

1931. En Vandrefalk skudt i Ungarn med ring om benet, med oplysning om, at den stammede fra Kong NIKITA af Montenegros falkehold i 1914.

1931. En Landsvale fanget i Schlesien med et stykke parpir med italiensk tekst fæstnet til vingen.

1935. En Sakerfalk fra et falkehold i Dalmatien fanget ved Moskva.

1940. En Landsvale fanget i Czechoslovakiet med et papir fæstnet til benet, øjensynligt stammende fra S.W. Afrika.

1942. En Landsvale fanget i Bayern, med et lille stykke tøj om benet, fæstnet dertil af en italiensk soldat på øen Linosa i Middelhavet.

I en efterskrift resumerer forf. de ovenfor nævnte data og gør opmærksom på, at meddelelserne — i hvert fald de ældre — ofte må vurderes med megen kritik, og at i hvert fald aldersangivelserne for de genfangede fugle er aldeles misvisende og fantastisk overdrevne.

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