

fections (Cooper, J.E., *Veterinary Aspects of Captive Birds of Prey*, Standfast Press, England, 1978).

The condition may be unilateral or bilateral and in less severe cases can heal without clinical treatment if the underlying cause is removed. If the lesion becomes infected, however, surgical treatment is often necessary, and the success rate may be very high (Riddle, 1980).

To my knowledge no case of bumblefoot in a wild raptor is documented in the literature, however, it has been observed. Brian Cade and Clayton White (pers. comm.) banded a female nestling Peregrine Falcon (*Falco peregrinus*) on the Colville River, Alaska, in July that had severe bumblefoot. It was trapped on Holly Beach, Louisiana, in October of the same year. The trapper made no mention of its swollen feet at that time. Pat Redig (pers. comm.) has seen bumblefoot in wild Bald Eagles (*Haliaeetus leucocephalus*), 1 Prairie Falcon (*Falco mexicanus*), 1 Rough-legged Hawk (*Buteo lagopus*), and Red-tailed Hawks (*Buteo jamaicensis*). In all cases the birds had an injury to the other leg; usually a missing foot from a trap. The purpose of this note is to report bilateral bumblefoot in a wild Red-tailed Hawk.

On 10 March 1985 I received a report of an injured hawk along the Pine River (La Plata County, Colorado). Upon arriving to the area, I located an adult Red-tailed Hawk which was barely able to fly. Upon capturing the bird, I noted that the metatarsal pad, as well as all digits, of the bird's feet were severely swollen (Figure 1). The right foot had a scabbed over puncture wound above and between digits III and IV. The hawk was severely emaciated and could not move the digits of either foot. Immediately after euthanasia, I made an incision into the metatarsal pad of the right foot. A large amount of casious exudate was located around the tendon. Culturing of this material yielded *E. Coli*. Although not known for sure, it is probable that the infection entered through the aforementioned puncture wound and spread to other areas, becoming so acute that the bird was unable to catch prey items and thus its physical condition deteriorated.

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NEWS AND REVIEWS

Report — 1st International Symposium on the Golden Eagle. On 14-15 June 1986, the 1st International Symposium on the Golden Eagle was held in Brunissard, French Alps. It was organized by The Alpine Research Centre for Vertebrates, the Queyras Regional Nature Park, the Ecrins National Park, and the Mercantour National Park. The organizing committee was chaired by Samuel Michel from the Alpine Research Centre for Vertebrates.

In France, the concern about the Golden Eagle has lasted since several years ago, and in 1981, during a meeting in Montpellier, an Interregional Working Group was formed, with Roger Mathieu as a chairman. The Group accepted a common research programme, adopted standardized methods and terminology, and established contacts between Golden Eagle specialists from neighbouring countries—Italy, Spain and Switzerland.

The aim of this year's meeting was to discuss the present situation of the Golden Eagle in Europe and to widen the contacts within European countries. About 200 people arrived in Brunissard. France was represented most numerously, and a fairly large group arrived from Italy. There were also representatives from Great Britain, Yugoslavia, Poland, Spain and Switzerland. The audience listened to 26 lectures, 14 of which were from France, 3 from Italy, 2 each from Great Britain and Switzerland, and 1 each from Yugoslavia, Poland and Spain. Additionally, 2 communications were read, having been sent from Austria and Norway. The organizers plan to publish the proceedings in the languages in which the papers were presented during symposium (4 in English, the rest in French). Anyone interested in this publication should contact Samuel Michel, Le Coin, 05390 Molines en Queyras, France.

The symposium was divided into 3 sessions. The first session "Status of Golden Eagle in Europe" lasted the entire first day and was chaired by Roger Mathieu in the morning and by Paolo Fasce in the afternoon. During this session 16 papers were presented. Four of them discussed the status of the eagles in different countries (Britain—Roy Dennis; Italy—Paolo Fasce; Poland—Wojtek Krol; Switzerland—Heinrich Haller), and other concerned smaller administrative or geographical units (e.g. Macedonia—Bratislav Grubac; the Ecrins National Park—Christian Couloumy; Pyrenees—Michel Clouet; Sicily—Salvatore Seminara). In most of the papers the authors gave breeding numbers and density of the eagles in a given area, data on breeding results, nest site selection, food habits, numbers trends and threats for the species.

In the morning of 15 June, there was a session "Biology of the Golden Eagle," chaired by Jean-Francois Terrasse. The first speaker, Roger Mathieu, described "Relationships between age, plumage, behaviour and sexual maturity in the Golden Eagle." In the second lecture Jeff Watson discussed "Land use changes in the Highlands of Scotland and their effects on the Golden Eagle population." Two papers in this session showed the results of investigation on food habits of Golden Eagles—in Spain (Fernandez Leon Carmelo) and in France (Rick Huboux). One lecture concerned breeding biology of the eagle in the Appenines (Bernardo Ragni et al.), and in the last paper Daniel Simeon and Michel Belaud described habitat use by eagles in the sample area of Southern Prealps in France.

In the afternoon Michel Clouet was the chairman. The first speaker, Michel Gillone, a French ethno-ornithologist, gave a lecture "The Golden Eagle in Mexico: a rare and worshipped bird," followed by a session entitled "Management of the Golden Eagle" with 4 papers. Rick Huboux commented on breeding results of Golden Eagles in France in 1964-1984, Jean-Marc Cugnasse described "Management techniques of the Golden Eagle during breeding season," Christian Couloumy talked on "The programme of research on Golden Eagles in the Ecrins National Park, and finally Rick Huboux described "Methods of numbers estimation of Golden Eagles in the Mercantour National Park."

The last point of the programme was the general discussion. It was initiated by Michael Clouet, who pointed out that there is quite a lot of information on eagles breeding in western Europe, while little is known about birds living in the Balcan Peninsula, which feed principally on turtles (*Testudo* sp.), and not on marmots and lagomorphs like their conspecifics in western Europe. French ornithologists will encourage their colleagues from Yugoslavia and Greece to begin Golden Eagle research by giving them field equipment and methodological advice. As a most important task for the territory of France, Michel Clouet discussed research on the survival and dispersion of young eagles, which can be studied by means of marking birds with wing-tags (this method is already used in Scotland). It turned out however, that for ethical and aesthetical reasons this method has many opponents in France. Among ornithologists present at the symposium, the strongest opposition came from Jean-Francois Terrasse and Michel Gillome. Other research methods were then discussed—telemetry, which is however unpractical in the mountains, and the Argos system (reading transmitter signals by satellite) which is very costly. Little by little the subject of the discussion was changed, and no decision was taken on the matter of wing-tag marking.

The data provided during the symposium show that the situation of the Golden Eagle in Europe is good. Its numbers are estimated to be 3250-3500 pairs (excluding USSR): 450-500 pairs in Scotland; 400 pairs each in Italy, Norway, Sweden and Spain; 200 pairs each in France and Greece; 100-150 pairs each in Bulgaria and Finland; and Albania, Austria, Czechoslovakia, Yugoslavia, Poland, Rumania and West Germany each have < 100 pairs. In some countries an increase of breeding population has been found (e.g. Norway, Scotland, Switzerland) and in others. As a result of recent inventories, many more eagles were discovered than was previously suspected. — **Wojtek Krol, 13, rue Daubenton, 75005 Paris, FRANCE.**

The Grouse and the Goshawk as Prey and Predator. Airing Thursday, 26 February 1987, 8:00 PM EST on PBS (check local listing). A film by Marty Stouffer Productions, Ltd., Aspen, Colorado, as part of the Wild America series, which begins its fifth season in 1987. A half-hour program filmed in the Cascades of Washington and Oregon and hosted by Marty Stouffer.

L'Aquila Reale in Italia: Ecologia e Conservazione. By Paola and Laura Fasce. Lega Italiana Protezione Uccelli, Serie Scientifica, 1984: 66 pp., 15 figs., 14 tables, numerous black and white plates and line drawings, summaries in Italian, English and French, Lira 10,000 excl. of postage. — This work on the Golden Eagle in Italy has chapters entitled, Introduction, Materials and Methods, Biology of the Species, Status of the Species in Italy, Population Dynamics and Problems of Conservation. The first part of the book is on the general biology of the species and the second part contains technical information based on 11 years data collected by thirteen collaborators in the western Italian Alps and northern Apennines. There are estimated to be 183 pairs in the former area (except the Sesia and Ossola valleys) and between 329 and 389 in the latter area. Although I have seen few major works on raptors from Italy this one appears impressive for its thoroughness. — Richard J. Clark.

HOME FREE: Return of the Bald Eagle. A film produced by the Massachusetts Audubon Society, copyright 1984. Length 28 min., color, sound. Available from The New Film Company, Inc., 7 Mystic Street, Suite 118, Arlington, Massachusetts 02174, U.S.A. **Price: \$450.00 U.S. on 16 mm, \$400.00 U.S. on video; \$5.00 U.S. shipping.** Video available in 1/2" and 3/4" VHS. Review copy received in 1/2" VHS format. Rental rates for free admission showings are \$50.00 for one day and \$15.00/day for each additional day for 16 mm rental; \$35.00 for three days and \$10.00/day for each additional for video. Special rates are available for fundraising and other paid admission showings.

The apparent decline of the Bald Eagle in parts of North America has been of concern to conservationists and wildlife biologists for the past several decades, and the species is still listed as either threatened or endangered in the contiguous United States. The film presents a brief story of the Bald Eagle's decline and attempts to reintroduce the species in the area of Quabbin Reservoir in western Massachusetts.

The film begins with an aerial view of Quabbin Reservoir set to music with narration by Jack Swedberg. Besides the Bald Eagle, Swedberg is the main character of the film. Additional narration by Joyce Zinno describes Swedberg's hobby and later profession as a wildlife photographer which eventually leads him to the Bald Eagle. Swedberg was a nature photographer for some 20 years before eventually landing a job as wildlife photographer for the Massachusetts Division of fisheries and wildlife. Swedberg began photographing Bald Eagles during wintering periods, primarily to document their presence in the Quabbin Reservoir area. The first part of the film tells Swedberg's story and contains footage of Swedberg preparing to photograph eagles from a blind.

The film then goes into an encapsulated version of the overall decline of the Bald Eagle, with Swedberg's particular thoughts as to why the birds ceased to breed in western Massachusetts. During this sequence, the film uses black and white still photographs of hunter-killed eagles, of nests, eggs, and young, a close-up shot of a cracked egg in a nest containing one young, and additional narration by Zinno to describe man's impact upon the species. According to the film Swedberg considers loss of habitat to be the primary reason for the extirpation of breeding Bald Eagles in western Massachusetts, but unfortunately this is not expanded upon. Instead, the DDT issue receives a considerable portion of the discussion. The film then shifts back to Swedberg in his blind, and this part of the film ends with some nice footage set to music, although brief, of interactions around a deer carcass between an adult Bald Eagle and a two-year-old immature. The introduction, DDT sequence and photography sequence make up the first 7 min of the film.

The remainder of the film is devoted to documenting the reintroduction of the Bald Eagle into the Quabbin Reservoir area. The initial part of the sequence briefly depicts construction of a hack tower and nest, with narration by Swedberg and Zinno which includes a brief explanation of hacking procedures. Credit for financial support of the project is given to the Massachusetts Audubon Society and the Bank of Boston. The sequence gives a good impression of overall size of a Bald Eagle hack tower, and a good idea of the man-power involved in order to raise such a structure.

Next, Swedberg and members of the U.S. Fish and Wildlife Service are shown preparing for a trip to Canada to take young

wild eagles for reintroduction at Quabbin Reservoir. As the flight departs the Quabbin area, there is a brief aerial sequence of the terrain and surrounding regions. Next, the film shifts to a Bald Eagle nest in the Province of Manitoba. The sequence on the ascent of the nest tree is complete with narration of the climber's labored breath, which will bring back memories to anyone who has ever used tree climbers to scale a tree to a raptor nest. A young eaglet is removed from the nest and lowered to Swedberg waiting at ground level. Some close footage of young eagles, both in the nest and while being handled on the ground, is shown. The sequence ends with brief aerial footage of a portion of the return flight, and a final landing on Quabbin Reservoir.

After the arrival of the young eagles, the film introduces David Nelson, a Wildlife Biology graduate student at the University of Massachusetts. Nelson is the hack-site attendant, and several aspects of behavior, such as preening, stretching, (mantling), wing exercise, etc., are shown as Nelson narrates from his notes on each individual bird. A portion of the tower enclosure was furnished with one-way glass in order that photographs and observations could be made while the young eagles were growing and developing. Next, there is a brief discussion by Swedberg and Nelson concerning preparations for the release of the young eagles to include a change in their diet. Up to this point, only fish are mentioned as being part of the diet of the Bald Eagle.

The film then shifts to close-up footage of the young eagles being examined and affixed with patagial markers and radio transmitters. The radio transmitters are shown being attached (sewn) to the central rectrices by an unintroduced individual who narrates part of the sequence. Another individual comments upon the health of the young eagles, including a brief discussion on the physiology of the avian eye. The discussion ends with a comment on the eagle being the "champion visual animal on the earth." The footage of the hack tower and preparation for release of the young eagles lasts approximately 17 min.

The remaining 4 min of the film documents the release of the young eagles from the hack tower set to music. The eagles' enclosure on the hack tower is slowly opened, the young eagles step outside, and finally take flight over Quabbin Reservoir. Following, there is discussion by Swedberg and Nelson concerning the success of the release operation, and a brief shot of Nelson monitoring the eagles' movements with a receiving unit for the radio transmitter. The film ends with a short narration by Swedberg and more aerial footage of Quabbin Reservoir. The credits list numerous other individuals involved with the production of the film, including Media Music and Sound for the musical background.

A brochure which accompanied the film contained several black and white photographs. The brochure also contained some very favorable comments on the film by the Editor of the National

Geographic Society, the President of the National Wildlife Federation, and CBS News. I agree in part with those comments, in that the photography is excellent, the film does hold your attention, and it does tell an environmentally important story. The dedication of Jack Swedberg to returning the Bald Eagle to Quabbin reservoir as a breeding bird cannot be denied after viewing the film. There are portions of the film, however, which require additional comment.

It is unfortunate that the issue of habitat alteration in western Massachusetts was not dealt with more intensively. Instead of the recurring discussion of DDT's impact, educational though it may be, it would have been equally educational and interesting to discuss "before and after" documentation of nesting locations within the Bald Eagle's former range in Massachusetts.

At one point in the discussion of the eagle's extirpation in Massachusetts, Swedberg makes the statement that "at the time, no one thought of the idea of hacking eagles." Although an informed viewer would not support such a statement, the uninformed viewer possibly would. Perhaps Swedberg was the first person to think of such an idea in Massachusetts, as was probably the statement's purpose, but the reintroduction of the Bald Eagle into areas elsewhere in the United States has been carried out for several years by numerous organizations and individuals. Nevertheless, the viewer is left with the impression that the film is documenting somewhat of a first. This would be true only on a local level.

Another point of concern is Swedberg's statement that "the eagle is primarily a fish-eater." It has been well documented that the Bald Eagle's diet can be much more varied, and in some wintering areas the diet may consist primarily of mammalian or avian prey, and carrion. Again, such statements might be misleading to an uninformed viewer learning about the Bald Eagle for the first time. General statements concerning the biology of the species should have been carefully edited.

The cost of the film is not warranted from a scientific point of view. However, I would recommend the film on a junior high school or high school level as an introduction to man's efforts to return raptors to former nesting grounds. Although not the quality of the National Audubon Society's 1981 film "Last Stronghold of the Eagles," HOME FREE provides an educational and informative documentary of the effort that is required in attempting to restore the Bald Eagle into its former nesting localities. Although most raptor biologists are well familiar with such undertakings, the general public is not. Education about raptors should be a primary area of concern as we close out the 1980s and move into the 1990s. Films such as HOME FREE are important as a means of educating the public at an early age, an education that hopefully will be remembered later in life. — Jimmie R. Parrish.

DISSERTATION ABSTRACTS

The Feeding Ecology and Breeding Biology of a Cape Vulture Colony in the Southwestern Cape Province

A dissertation submitted to the Faculty of Science,
University of Witwatersrand, Johannesburg,
for the degree of Master of Science.

Johannesburg 1983

Cape Vultures (*Gyps coprotheres*) at Potberg obtain their food from stock farms, within a limited area surrounding the colony. The size of the foraging range was determined by means of a postal survey, and the quantity of food available within it was estimated to exceed the colony's requirements. Data pertaining to daily feeding forays of individuals, monthly foraging patterns and the growth of nestlings indicated no seasonal shortages in the amount of food obtained.

One complete breeding cycle and another two post-fledging dependence periods were observed during 165 days. Results concerning deferred maturity, frequency and success of breeding, a sex-linked difference in behaviour, nestling parasites, behaviour of dependent juveniles, aggressive terminations of the post-fledging period and survival of marked individuals, were obtained. It is suggested that the transition to feeding exclusively on sheep carcasses has not been achieved with equal success by all age groups. — **Robertson, Alistair Stuart, 1983. M.S. thesis, Faculty of Science, University of the Witwatersrand, Johannesburg, South Africa.**

DEDICATION — William Ruttledge wishes to dedicate in retrospect his paper entitled "Captive Breeding of the European Merlin (*Falco columbarius aesalon*), which appeared in Volume 19(2/3), 1985, pp. 68-78 of *Raptor Research*, to the memory of his wife, Dorothy, and in recognition of the very great contribution that she made to the preparation of the manuscript which, sadly, she did not live to see in print.

Mr. Ruttledge takes the opportunity also to give more adequate recognition to the very extensive and invaluable advice given throughout his work by Dr. L. H. Hurrell from his wide experience in captive breeding, including the preparation of MK I and MK II mice (see page 70 of the article).