

Falco



Middle East Falcon Research Group

National Avian Research Centre

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Newsletter No. 3. June 1995

Letter from the Chairman's Office

Report by Jaime Samour

As you will see later in this issue, we have now definite dates for our International Conference. I am sorry we were not able to finalise the dates earlier, but it was difficult to coordinate since our Conference is closely associated with the meeting of the International Advisory Committee of the National Avian Research Centre.

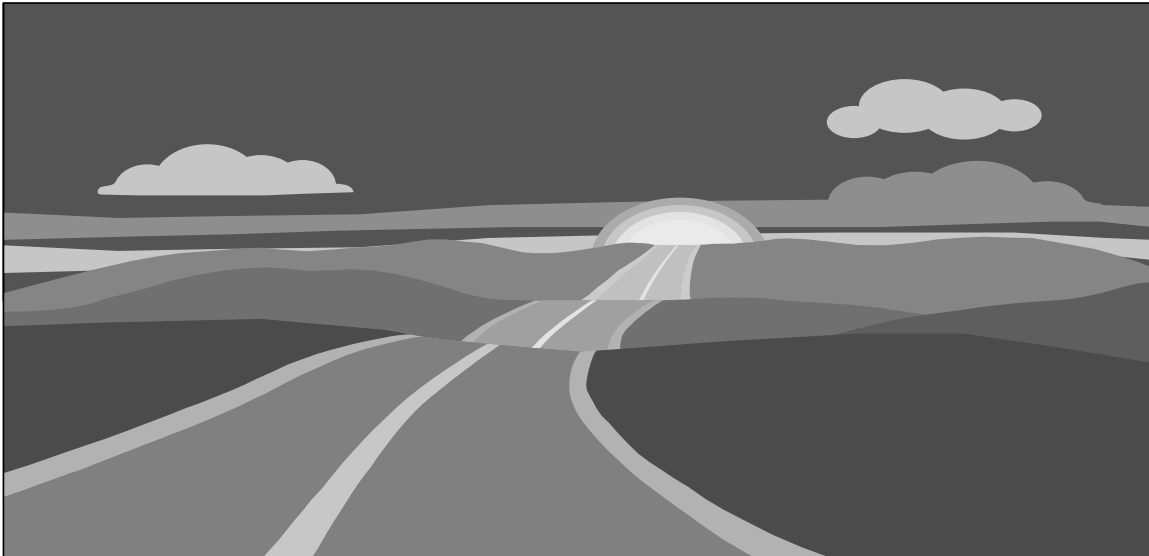
Nick Fox and I are trying hard to get the programme organised. We have already a draft and have included all your suggestions, but are still waiting confirmation from other participants. We hope to have a final version of the programme by the end of June. We can anticipate, however, that the Conference will be focused on five main areas: Medicine, taxonomy, field research, conservation and public awareness.

There has not been an international gathering on falcons and falconry in the Middle East since the historical "International Conference on Falconry and Conservation"

held in Abu Dhabi on 10th to 18th December 1976 under the auspices of H.H. Sheikh Zayed bin Sultan Al Nahyan, President of the United Arab Emirates.

In this Conference, H.H. Sheikh Zayed intended to promote the practice of falconry in the Middle East as part of the Arabian cultural heritage and to strengthen the brotherly relationship with other countries. These were the aspirations of H.H. Sheikh Zayed back in 1976. Curiously, these form part of the objectives of our Group today and our first International Conference could provide a suitable forum to pursue those goals.

Fast cars and fast-food restaurants have taken over traditions and cultural heritage in a fast-changing world. The identity and future of all countries is in the hands of the new generation. Lets work together and help in preserving falconry as part of a unique heritage for our children and the children of our children.



"I go to Nature to be soothed and healed, and to have my senses put in tune once more"

**John Burroughs (1837 -1921)
American naturalist and writer**

Readers digest

Report by Dr Nigel Barton, Dubai Falcon Hospital, Dubai, United Arab Emirates

The extent to which an animal can utilise food energy depends largely on the anatomical and physiological properties of the digestive tract. Omnivorous animals with a varied diet show a high degree of plasticity in their gut anatomy depending on the food type. Carnivorous birds feed almost exclusively on meat which varies little in composition so diet-related anatomical differences would not be expected. Nevertheless, variation in gut length has been found among raptors species and this variation is thought to be influenced by hunting strategy. Raptors attack a considerable range of prey species and require differing degrees of agility for prey capture. Weight minimisation is very important in terms of flight energetics. Predatory birds such as falcons which catch prey by brief periods of sustained chase requiring rapid acceleration and manoeuvrability might be expected to allocate a greater proportion of their body mass to flight musculature and to minimise the size of internal organs which are not important for flight such as the intestine.

It was found that species which actively chase prey have intestinal tracts up to 30% shorter than predicted from body size alone and intestines half the length of similar sized species, such as kites and buzzards, which rely on a soaring searching flight to capture less agile prey or carrion. The small intestine is the region of the gut where nutrient absorption takes place and so as predicted, reduced intestine length results in lower efficiency of digestion. Of the Falconiformes studied, the red kite (*Milvus milvus*) and the common buzzard (*Buteo buteo*) had the highest digestive efficiency of 82% of total food intake. Peregrines had a mean digestive efficiency of 75%. Species such as the

peregrine, merlin and other bird-eating species have specialised prey requirements. Such prey is abundant, but several prey items may need to be caught each day. This requires an extremely active chase and the success of an attack will depend on whether the bird is able to accelerate at maximum efficiency. It is advantageous for these species to have a small digestive tract and a rapid throughput of digesta because this enables them to return to their optimum flying weight quickly after eating each meal. As a consequence they suffer a slight reduction in digestive efficiency but this cost must be more than compensated for by an increased prey capture rate.

A 7% difference in digestive efficiency is likely to be important in terms of food requirements, especially for falcons with energy expensive foraging modes. For species of equivalent body size, this would mean that an active hunter needs to capture 7% more prey each day compared to a searching hunter to compensate for reduced digestive efficiency. Food requirements in raptors do vary with body size. Buzzards, kites and eagles require approximately less than 10% wet weight of their body mass per day, large falcons 10 - 15%, small falcons species 20 - 25%. These figures can be explained in part by different metabolic requirements for animals of different size.

The above findings have ecological implications in terms of prey requirements, prey capture rates and hunting strategies. It helps to explain some of the anomalies experienced by falconers and researchers in terms of diet quantity and quality. Different species have different food requirements and some food types are more suitable than others.

Birds, the free tenants of land, air and ocean. Their forms all symmetry, their motions grace....

**James Montgomery (1771 - 1864)
British Poet**

Use of dichlorphenamide in two cases of glaucoma in owls

Report by Mr J.R. Chitty MRCVS, Wiltshire, United Kingdom

INTRODUCTION

Glaucoma is an uncommon finding in birds of prey, with the result that there is little in the current literature on its diagnosis and treatment (Williams, 1994). However, glaucoma is not uncommon in dogs, and the drug dichlorphenamide is generally used in the management of the disease: its action as a carbonic anhydrase inhibitor reducing the production of aqueous humour.

Here I describe its use in two cases of suspected glaucoma in owls.

CASE 1

A female Bengalese eagle owl (*Bubo bubo bengalensis*, approx. weight 1000g) was presented with a penetrating wound of the right cornea. There was no leakage of aqueous fluid. However, the pupil was constricted and there was inflammation of the iris. Uveitis was diagnosed and treatment with a topical steroid/antibiotic preparation (Betsolan Eye & Ear Drops, Pitman-Moore Ltd.) was started. Cyclopentolate HCL 0.5% drops (Mydrilate : Boehringer Ingelheim) was also used at a rate of one drop applied to the eye six times daily in the hope that the transient mydriasis which was induced would aid in reducing synechia formation.

After 4 days on this therapy it was noted that the iris was less inflamed and the pupil less constricted. However, the right globe was noticeably larger and more bulbous than the left, and also felt firmer. A tentative diagnosis of glaucoma was made and treatment with dichlorphenamide (Daranide: MSD), at 12.5 mg bid PO, was started.

Within 24 hours the globe had reduced in size and apparent pressure. Dichlorphenamide was continued at the same dose for a further 5 days with no apparent side-effects. The uveitis therapy was then

continued for an extra 3 days, and the owl made uneventful recovery.

CASE 2

A female boobook owl (*Ninox novaseelandiae*, approx. weight 200g) was presented with a protruding left globe. On examination the iris was found to be distorted, apparently due to an injury received two years' previously. The left globe felt firmer than the right and a diagnosis of glaucoma was made. Treatment with dichlorphenamide (6.25 mg eod PO) was started. Within 24 hours there had been a reduction in globe size and pressure, and no apparent side-effects. However, 3 days later the owl was found dead in the aviary. There had been no observed symptoms before death, and it had been more than 24 hours since the last dose. Sadly, the carcass was not made available for autopsy so it was not known whether death was due to toxicity, the original cause of the glaucoma, or some other related cause.

DISCUSSION

If not controlled properly glaucoma will result in loss of vision, and ultimately loss of the affected eye - results that would be disastrous in a raptor.

Glaucoma in birds of prey is usually a sequel to uveitis (Murphy et al., 1982) probably due to blockage of irido-corneal drainage angle with inflammatory debris. This would appear to be the situation described in Case 1.

The cause of the condition in Case 2 was never elucidated. Indeed, it should be noted that neither case was the presence of glaucoma proved - digital tonometry is not a reliable diagnostic tool. Fortunately with recent research, normal intraocular pressures are being published for birds (Stiles et al., 1994) so more accurate tonometry methods can be utilized, although for many

veterinarians the digital method will still be used when expensive, specialist equipment is unavailable.

The dosage used was that used in dogs 5-15 mg/kg divided bid/tid (Yebuf 1994). A slightly higher dose was used in Case 1 to allow for the faster metabolism of birds. In Case 2, it was difficult to divide the tablets (50 mg) into the small size required so it was decided to give a larger dose less frequently. Obviously there have to be worries that the boobook owl died of dichlorophenamide toxicity. However, I feel this is unlikely as:

1) None of the side-effects seen in companion animals, ie. lethargy, diarrhoea, polyuria, polydipsia and CNS disturbances (due to potassium loss) were seen prior to death.

2) Toxicity would probably result in death occurring sooner after dosing.

I feel that this drug may have a use in raptor medicine for this potentially vision-threatening condition, although until its side-

effects and dosage are more carefully evaluated it should be used with care.

I would be grateful if colleagues could pass on any thoughts on the treatment of glaucoma in birds and also uveitis therapy (in particular with regard to dilating the pupil to reduce synechia formation).

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Williams DL (Wingers 1994). Ophthalmology in Avian Medicine: Principles and Applications. Eds. Ritchie, Harrison and Harrison.

Yebuf Y(1994). The Veterinary Formulary 2nd Edition, The Pharmaceutical Press.

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United Kingdom



Some data on the free-living *Falconidae* recovered in a raptor centre in North Italy

Report by Dr Paolo Zucca and Dr Sergio Montanari, Parma, Italy

In Italy there are several raptor centres that treat mainly free-living birds, but only a few of them have complete avian veterinary units with facilities such as a laboratory or a surgical room. These few centres collect the greater part of the injured wild raptors of the North and Central Italy. We report a short analysis regarding the 10 species of *Falconidae* treated in the largest Raptor Centre in North Italy (Parma Raptor Centre), during the period of 1991-1994.

The *Falconidae* represent about 16 % of the total number of raptors recovered in this period (3399 raptors - diurnal and nocturnal - of 39 different species). The table below summarises the situation of the recovery of the different species of *Falconidae*, in percentage values. The last column shows what was the recovery trend at the Centre during the four years analysed (91-94 included). Only the average number of kestrels recovered increased, while the average number of

recovery of the other 9 species of *Falconidae* firmly decreased during these four years. About 53 % of the recovery of falcons during this period of four years, is due to wing fractures; this value increases if we analyse the

causes of recovery of the large falcons. For example in peregrine falcons, wing fractures is the main cause of the recovery value of about 75 % calculated on the total number of causes of recovery.

Common name	Latin name	Average recovery 91-94	Recovery trend
KESTREL	<i>Falco tinnunculus</i>	81.95 %	+
PEREGRINE	<i>Falco peregrinus</i>	6.50 %	-
HOBBY	<i>Falco subbuteo</i>	5.25 %	-
MERLIN	<i>Falco columbarius</i>	2.60 %	-
LANNER	<i>Falco biarmicus</i>	1.00 %	-
RED-FOOTED FALCON	<i>Falco vespertinus</i>	1.00 %	-
ELEONORA'S FALCON	<i>Falco eleonarae</i>	0.80 %	-
SAKER	<i>Falco cherrug</i>	0.40 %	-
LESSER KESTREL	<i>Falco naumanni</i>	0.30 %	-
GYR FALCON	<i>Falco rusticolus</i>	0.20 %	-

Serratospiculum in falcons - Middle East Falcon Research Group workshop

Report by Jaime Samour

The Middle East Falcon Research Group held its second regional workshop on the 17th May at the Sweihan Research Centre of the National Avian Research Centre (NARC). The topic for discussion was "Serratospiculum infection in falcons". I am deeply grateful to Dr Kenton Riddle, Director of the Abu Dhabi Falcon Research Hospital for suggesting the title of the workshop.

As of our previous workshop, the meeting was well attended and included participants mainly from the Dubai Falcon Hospital, the Veterinary Hospital (Dubai), the Abu Dhabi Falcon Research Hospital, the Central Veterinary Research Laboratory (Dubai), the Dubai Zoo and members of NARC.

The discussion was framed around the aetiology, life cycle and intermediate host of the parasite and the physiopathology, diagnosis, treatment and prevention of this parasitic condition.

During the workshop, we had excellent contributions and active participation

from members of the three falcon hospitals based in the United Arab Emirates, but mainly from Dr Remple, Dr Riddle and from Mr McKinney. On this occasion however, we were fortunate to have with us Dr Benno Nothelfer from the Central Veterinary Research Laboratory in Dubai. Dr Nothelfer is an excellent pathologist with a keen interest in avian diseases. In this respect and amongst other projects, he is currently working with NARC personnel on several clinico-pathological studies, mainly on aspergillosis, fatty-liver syndrome and capture myopathy in bustards. Dr Nothelfer made very important observations throughout the meeting and pointed out several novel pathological aspects of this parasitic condition. His photographic slides of parasitic larvae tissues were first class (Benno, I am still very jealous of your microscope!).

It was gratifying to see participants exchanging information based on their clinical experience and post-mortem observations. However, from the start of the meeting it was obvious that we knew very little about the parasite and that we are still not sure on how

to deal with the condition. I would like to take the opportunity at this point to commend the efforts made by the personnel of the falcon hospitals in the country in trying to investigate this and many other conditions affecting falcons in this part of the world.

As a first step, members agreed to initiate a collaborative research programme with the International Institute of Parasitology (UK) on the taxonomy of the *Serratospiculum* sp. involved with our patients in the Middle East. Having identified the parasite, we will then try to obtain information about its biological life cycle, mode of transmission and pathogenicity. Different methods for treatment were discussed. Some of them have been tried, others have produced mixed results, but nothing substantial has been found. The possibility of setting up clinical trials was also discussed.

How significant is *Serratospiculiasis* in other countries? How often are *Serratospiculum* worms found associated with air sacculitis? or indeed how often *Serratospiculiasis* has been made responsible for the death of falcons or birds of prey in general? Do clinicians treat routinely *Serratospiculum* parasites? What do they use?

I would like to emphasise that sharing information and supporting clinical and research programmes of other members is an integral part of our Group. Lets try to work together to solve common problems.

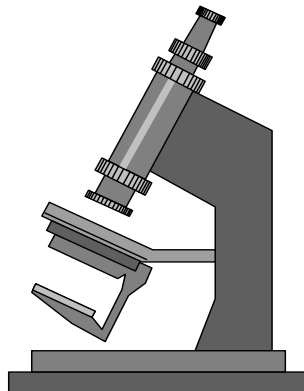
Please write directly and let me know your views. Your letters will be published in the next issue of *Falco* if this is acceptable to contributing members.

Dubai Falcon Hospital News 1994 - 1995

Report by Dr Nigel Barton, Dr David Remple and Mrs Cheryl Remple

For the first time since the hospital was established 12 years ago, the number of new falcons admitted was less than in previous years. This refers to falcons which have never been implanted (Passive Induced Transponders) before in the hospital and falcons implanted elsewhere but visiting the Dubai Falcon Hospital (DFH) for the first time. During 1993-1994, 2079 new patients were treated. From 1st June 1994 to 1st June 1995, 1845 new patients were seen. This reflects 11% fewer new birds. However, the total number of falcons brought to the hospital remained approximately the same 2323, only 10 less than last year. The number of hospital visits for these 2323 birds was 4541.

As expected, the majority of falcons seen were sakers (52%) and peregrines (36%) compared with 62% and 32% seen last year. The most significant difference seen is in numbers of juvenile female sakers. In absolute numbers, we admitted 33% fewer this season. This translates to an 11% reduction as a proportion of the total annual intake i.e. sakers comprised 45% of annual intake in 1994 and only 34% in 1995. There was also a reduction in the number of juvenile male sakers but not to the same degree. The same was not found for juvenile peregrine where the percentage of intake for males and females was slightly higher than last year.



Species	Saker		Peregrine	
	male	female	male	female
Adult	27 (1.4)	242 (13.1)	23 (1.3)	107 (5.8)
Juvenile	73 (4)	623 (33.8)	171 (9.2)	358 (19.4)

Barbary falcons 48 (2.6) 19 of these were adults
Lanner 30 (1.6)
Lugger 11 (0.6)
Others and hybrids 132 (7.2)

Note: Values in parentheses are a percentage of the new birds.
See table in Newsletter No. 1 for comparison to 1993 - 1994.

The data also show that a higher number of adult falcons were admitted for both sexes of each species. This finding applies to absolute numbers admitted and as a percentage of intake. We saw a 32% increase in adult female peregrines and an 8% increase in adult female sakers.

This season again saw a high number of barbary falcons (48). Almost half of these were adults. Lanners also appeared frequently, luggers less so indicating their relative insignificance to Arab falconry. Very occasionally a black shahen or a red-headed falcon (*Falco peregrinus babylonicus*) was seen. The majority of the remaining 7.2% on the intake were captive bred hybrids.

How do we explain these figures? In short we cannot but we can suggest possible reasons.

1) Total annual intake was lower because more people kept falcons over from last year and did not buy replacements. This is supported by the fact that 2323 falcons were seen of which only

1845 were new to the hospital. This means that 478 falcons had been kept over from last year or previous years. Last year we saw only 252 falcons which had been kept over.

2) Mortality was lower because of successful treatments and/or better management by falconers.

3) Fewer falcons were trapped and sold in the Gulf, hard to say.

4) Saker falcons had a poor breeding season resulting in fewer juveniles being trapped but more adults..

5) More falcons were treated by other veterinary clinics this year than last.

We continued to check for falcons implanted with PITs in Central Asia. This year only one bird was recovered in Dubai to add to the two birds found last year.

Birds are to see, to hear, to store in memory.
Allan D. Cruickshank (1907 - 1974)
American Editor and Writer



Letters to the editor

Thank you very much indeed for all your hard work which has been going into the formation of the Middle East Falcon Research Group, and the production and distribution of the newsletter.

A few points which arise from the last issue are as follows:

As originator of the concept of using topical intra-tracheal (IT) **imaverol**, I am uncertain as to why workers are using it only once, we use it topically daily either direct IT or by nebulisation, doing so for 2 - 3 weeks as necessary, and have had no ill effects.

One issue which was not addressed in the aspergillosis workshop appears to be the prophylactic use of medication. From my understanding, there are certain species which are particularly susceptible to aspergillosis, there are juvenile red tails, gyrs, snowy owls, golden eagles, goshawks, in a global sense perhaps one could add a few more. These species require only very slight stress, together with the ubiquitous aspergillosis spores to suffer the disease. Certainly in these spp prophylactic medication is I believe justified prior to any planned stress situation, e.g. training, transport, (in gyrs case if raised as a family, isolation alone is enough).

Other species such as sakers, peregrines etc. either require extensive stress (e.g. after trapping from the wild, starvation for 2 weeks, passage through markets etc.) or a highly spore contaminated environment e.g. compost heaps, the use of shredded green bark for aviary floors etc.

The international seasonality of aspergillosis is interesting, which is inevitably related to the humidity and temperature in

different countries. In most of Canada, aspergillosis only occurs in one month of the year, whilst in the UK it can happen at anytime.

I believe the way ahead with aspergillosis is not medical treatment of clinical cases, but education of the handlers and dealers. There is no doubt that in the UK the use of social imprint goshawks, has meant a massive reduction in the stress caused to the goshawk in training, with a consequent reduction in disease (principally aspergillosis) to the bird. The same situation would be equally applicable to gyrs and hybrids. I appreciate that even more time would be required to produce such birds, but that are happier, healthier, fly at a higher weight and hence better, and perhaps as important as anything else they are unlikely to breed in the wild if lost.

With respect to sterilising falcons, it would appear that the coagulate and suction technique for castration, via endoscopy is the most sensible for males, in females endoscopic salpingo-hysterectomy may still be the best method, although a difficult method especially in young birds. We know that in cockatiels no further follicle release will occur, in amazons some do, although release of yolk causes no problem, whilst leakage of albumin does, I do not believe that anyone has carried research or find the effects on falcons. Such work would be illegal in this country, but presumably could be easily carried out in the UAE, initially using barbary or such falcons.

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International Conference - Middle East Falcon Research Group

Abu Dhabi - United Arab Emirates

**International Conference - Middle East Falcon Research Group
14th - 16th November 1995**

Third announcement - Call for papers and poster presentations

The Middle East Falcon Research Group would like to invite all members to participate in the first International Conference due to be held on 14th to 16th November 1995, immediately after the International Advisory Committee Meeting of the National Avian Research Centre. This is the third official announcement to all wishing to attend and to present papers and posters. The Conference will be held in one of the hotels in Abu Dhabi. The final programme will be announced later in the year. It is intended to allow two and half days for paper presentations and workshops. Speakers should allow 30 min for each presentation with 15 min for questions. Slide and over-head projectors, poster stands and video-monitor

facilities will be available in the Conference room. The workshops throughout the Conference are intended to stimulate group interaction on selected topics like pododermatitis, aspergillosis, falcon pox, Newcastle disease, nutrition, captive breeding programmes, taxonomy and genetics.

Suggestions for these sessions will be greatly appreciated. It is intended to publish all papers presented at the Conference in the form of proceedings. The manuscripts would have to be handed to the Chairman just before or during the Conference. It is envisaged to publish the proceedings no later than two months after the Conference.

All members are welcomed to attend at their own expense. Those wishing to attend please let me know before the 1st of September 1995.

Lets all participate actively and make the Conference a great success

International Conference
Middle East Falcon Research Group
Abu Dhabi, United Arab Emirates

Dates for your diary

**World Veterinary Congress
XXV Congress of the World Veterinary
Association (WVA) and XX Congress of the
World Small Animal Veterinary Association
(WSAVA) September 3 - 9, 1995, Yokohama,
Japan**
Secretariat for WVC 95
c/o Sankei Convention
Sankei Bldg. 10F, 1-7-2
Otemachi, Chiyoda-ku
Tokyo 100, Japan.

**Association of Avian Veterinarians Annual
Conference and Expo**
28th August - 2 September 1995
Philadelphia, Pennsylvania, USA

Conference Office
2121 So. Oneida St., Ste 325
Denver, Colorado, USA 80224
Phone 01-303-7568380
Fax 303 01-7598861

Announcements

The Institute of Zoology
(Zoological Society of London)

and

The Royal Veterinary College
(University of London)

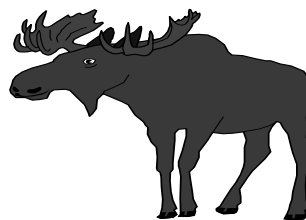
MSc in Wild Animal Health

This is a twelve month course for European and overseas graduates in veterinary and relevant sciences making a career in wild animal health. The course includes practical and theoretical instruction in the husbandry and nutrition of wild animals, taxonomy, population biology, conservation genetics, welfare and ethical aspects, epidemiology, immunology, infectious and non-infectious diseases, disease investigation, restraint, preventive medicine and surgery, together with an individual research project. Training will be given by staff at The Institute of Zoology and the Royal Veterinary

College, as well as invited speakers from other veterinary and zoological centres. Applications are now invited for the 1995/96 course starting in October 1995.

Full particulars and an application form are available from the Registrar, The Royal Veterinary College, Royal College Street, London NW1 OTU, United Kingdom.

Tel: + 44 - 171 - 3872898.
Fax: + 44 - 171 - 3882342.



The Middle East Falcon Research Group

The Middle East Falcon Research Group (MEFRG) intends to bring together experts in falcons and falconry, veterinary surgeons, falcon biologists and conservationists working in the Middle East and other professionals interested in falcons and falconry from around the world.

The main objectives of the MEFRG are:

1.- To provide

- A central body for the coordination of research activities related to falcons and falconry.
- A common forum for exchange of information and for promoting collaborative research programmes.

2.- To promote

- Research on health and diseases in falcons, falcon moulting patterns in the Middle East and falcon nutrition, captive breeding programmes and semen cryopreservation and artificial insemination.
- Field studies on falcon migration, taxonomy, morphometrics, reproductive biology, nutritional ecology and behaviour.
- Improved management conditions of captive falcons through educational awareness programmes.
- A better understanding of falconry as part of the Arab cultural heritage.

3.- To hold

- Regional workshops on veterinary medical aspects, falcon biology topics, falconry and conservation issues.
- An International Conference immediately after the International Advisory Committee Meeting (IAC) of the National Avian Research Centre. It is envisaged to publish the papers and posters presented at the conference in the form of proceedings.

4.- To publish

- Joint papers on aspects concerning falcons and falconry.
- A quarterly newsletter containing contributions on medical, biological and conservation topics of common interest, new developments and recent medical advances.

- Membership

- Any veterinary surgeon, biologist, conservationist or falconer working in the Middle East or any other person interested in medical, biological and conservation aspects of falcons and falconry from around the world.

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