

British Wildlife
Rehabilitation Council
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Autumn 2015 - Issue 63

The Rehabilitator

B W R C N E W S L E T T E R

British Wildlife Rehabilitation Council SYMPOSIUM 2015



In this issue
Proceedings of
the BWRC
2015



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**Main photo: Present and past
BWRC Trustees (left to right) Terri
Amory, Janet Peto, Simon Allen, Dick
Best, Adam Grogan, Molly Varga and
Chris Percival**

**Bottom left: Delegates start the
Sunday morning practical session
with examination and discussion
of a wildlife casualty cadaver.**





A word from the Chair


Welcome to the Autumn 2015 edition of The Rehabilitator (sorry it's a bit late – the Winter issue will be 'hot on its heels' I promise!) In this issue we bring you the **first instalment** of the proceedings of Symposium 2015, which was held at Langford Veterinary Services, University of Bristol on 17th and 18th October.

We were sorry not to be able to hear bat rehabilitator Kiri Green's presentation as she was taken ill shortly before the Symposium, but I think all would agree (and delegate feedback certainly indicated) that, as always, the range of topics and standard of presentations was excellent.

Opening the symposium, Tristan Cooper, recently appointed Release Co-ordinator for Secret World Wildlife Rescue, gave a nice summary of the principles of releasing rehabilitated wildlife, along with some of his experiences to date – a particularly useful session for students and novice rehabilitators that you can find written up on page 6 of this edition. Following on nicely, David Chilvers from RSPCA East Winch (Norfolk) described his post-release study of roe deer casualties – which you will be able to read about in our next edition (Winter 2016).

We like an exotic twist to a symposium every once in a while, and this year we heard about some of the large carnivore conservation and rehabilitation work of a charity based in Namibia from their Head Wildlife Co-ordinator Jo Clegg. This was followed by Peter Scott, well-known vet and Managing Director of Vetark Professional and Biotope Ltd, companies that Peter set up to develop nutritional supplements and products that he felt were missing from the practitioner's tool kit. Peter described the importance of considering the nutritional status and requirements of casualties from admission onwards.





In the last session before lunch, Mrs Eileen Harris, Senior Curator of Parasitic Worms at the Natural History Museum described her work and made a plea for samples of parasites of native British Wildlife which have been overlooked in the past due to their supposed familiarity.


After lunch, Becki Lawson from the Zoological Society of London brought us up to date on 10 years of the Garden Bird Health *initiative*, highlighting some significant changes in disease patterns, and also making a plea for rehabilitators to contribute to the studies – you can find Becki’s article based on her presentation on pages 14-16 of this edition.

Becki was followed by our Treasurer Janet Peto with advice on small charity financial management. Kiri Green’s absence then provided a little time for me to raise the issue of autumn pigeon sickness in response to an e-mail from a centre asking me to survey delegates on their recent experiences of this unexplained condition.

The last session of the day was an inspiring discussion of the potential for data derived from wildlife rehabilitation to contribute towards conservation efforts from Dr Dan Forman of Swansea University, which nicely tied together themes of sharing of information raised earlier in the day by several speakers.

We were delighted to welcome a special guest to the afternoon session of this year’s symposium – BWRC Chairman of 15 years Dick Best joined us, taking the opportunity to catch up with old friends. At the end of the Saturday session, Dick was kind enough to present our unsuspecting Treasurer Janet with retirement gifts from the BWRC Trustees (see our Summer 2015 edition for our call for a new Treasurer and Membership Secretary), and then Janet presented Dick





with a certificate making him associate member number 0001 of the BWRC as thanks for his long service and patient enthusiasm.

Next autumn it will be Lower Moss Wood's turn to host the Symposium in Cheshire, so we will bring you details of that nearer the time. BWRC trustees would like to take this opportunity to congratulate previous Chairman and Founder of Lower Moss Wood Wildlife Hospital Ray Jackson on his recent Animal Action Award from the International Fund for Animal Welfare, and the official opening of the new Lower Moss Wood Wildlife Hospital on 4th December 2015!

As always – if you have comments or would like to contribute articles or advertise events please contact **editor@bwrc.org.uk**, and look out for more proceedings in our next edition coming soon! If you are a working rehabilitator, make sure that your up-to-date details are on our Directory of Rehabilitators – download the Rehabilitation Unit Contact Form from the Find a Rehabilitator page of our website www.bwrc.org.uk



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Could you or someone you know be the next BWRC treasurer or membership secretary? If you are interested in becoming a trustee or volunteer helping with any aspect of our work please download and fill out the trustee application form from the BWRC (Meet the Committee) page of our website – www.bwrc.org.uk or contact BWRC Secretary Anne Maskell via annemaskell@gmail.com.

*Terri Amory
BWRC Chair*



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Wildlife Release at Secret World

presented by Tristan Cooper, Release Co-ordinator, Secret World to BWRC Symposium 2015, 17th October 2015

Tristan has held the post of Wildlife Release Co-ordinator at Secret World Wildlife Rescue for only four months, and so was able to share his early experiences and has summarised basic principles, making this article particularly suitable for students or new rehabilitators.

When releasing wildlife casualties, a long list of factors need to be considered. The list begins with **species, age** (adult or juvenile) and **time spent in captivity**. These factors primarily influence the decision of whether to use a hard or soft release method - 'soft' release is a more gradual release process, usually involving the casualty spending a few days in an enclosure at the release site; the enclosure remains in place for a while after release with food provision continued to support the animal until it stops using that resource (and is therefore assumed or observed to be feeding itself naturally). Hard release is a simple process of release without additional support. Further considerations then include -

Social grouping

Is the species normally social, and if so will the casualty need to integrate into an existing group? Naturally or artificially grouped animals may be best released together – e.g. foxes from the same litter or individuals of a similar age that have been grouped in captivity).



Available habitat

Survey work is required to establish if any of the following factors may render the site unsuitable -

- pre-existing populations of same (particularly if territorial) and other species (predators, prey or competitors)
- food resources (are they appropriate and sufficient?)
- physical constraints such as local roads and railways (threat of injury/death)
- Impact on existing facilities (e.g. allotments, gardens, fisheries)
- Opportunities to expand into the territory
- Local attitudes and the possibility of persecution
- Statutory legal obligations
- Voluntary codes of good practice



A risk assessment should be carried out prior to release to consider potential risks.

- to the individual animal (from factors listed above).
- to wild populations (e.g. ground nesting birds)
- to domestic animals (e.g. releasing a fox near chickens)
- to people (for example where casualties have been mal-imprinted and may approach humans).





Assessment of casualties for release

At the time of release the animal must of course be healthy, fit and able to sustain themselves in the wild (if they are not then a rehabilitator could be considered to be abandoning the animal - an offence under the Animals Welfare Act). Assessment of 'unnecessary fitness of a casualty should involve consideration of a number of factors:

- Physical health and body condition
- Sensory capabilities (e.g. vision)
- Reproductive capability (It can be argued that releasing non-reproductive animals may have a detrimental effect on the survival of others which do have the capacity for reproduction)
- Social/behavioural (mal-imprinting may result in failure to recognise or interact with conspecifics, or risk of approaching domestic animals or humans)
- Disease e.g. carriers of Sarcoptic mange could infect wild population
- Time of year - juvenile hedgehogs should not be released during winter months because they don't have the body fat reserves to survive hibernation

Soft Release

The process of soft release requires a considerable amount of preparation and local knowledge. Suitable sites must be surveyed as described above, and of course the landowner's permission both to survey and release the animals must be obtained. The site must then be prepared, usually requiring the construction of an appropriate temporary pre-release enclosure (usually a large enclosure allowing sufficient room for the animals to exercise as well as become familiar with the location).



When animals are considered fit for release, they are moved into the pre-release enclosure (usually for approximately two weeks) to allow them to become familiar with their surroundings, and location of feed provided. It is important that contact with humans is minimised once animals no longer require hand-feeding or veterinary treatment (many species naturally develop increased fearfulness of new things as they approach adulthood, so it is important not to interfere with this process by allowing them to associate humans with food provision in the release pen). After a suitable period an escape route is opened to allow full release, but support feeding is continued, and ideally the animals are monitored (post-release monitoring) in order to provide data on the success of the rehabilitation process.

**Pre-release aviary used for owls (long narrow design optimises the length of flight path to promote exercise).
Photo: Secret World Wildlife Rescue**





Above: Prevention of premature escape – foxes require high fencing and mesh laid on the ground up to a metre inside the fence to prevent digging out, and also a horizontal barrier coming in from the top of the fencing (red in the photo) to prevent foxes climbing out. Photo: Secret World Wildlife Rescue

Criteria for a Badger Release site

Suitable habitat must be found, typically woodland with fresh water and suitable ground for natural sett construction without risk of flooding. Even if an artificial sett has been constructed for release, badgers naturally extend or build alternative/ satellite setts some distance apart, and so a suitable site must provide this option. The



question of local badger population is a difficult one; badgers are highly territorial and will often persecute an intruder, but badgers are also social creatures and must be able to find unrelated mates for successful breeding. As badgers are fairly common in Britain, any area that doesn't already have badgers is probably unsuitable for them, so it is therefore very difficult to find suitable badger-free habitat, and so each area must be judged on its individual merits. As mentioned before, ideally release sites are away from hazards such as major roads or railways, or likely persecution (e.g. outside cull zones), and away from residential areas where badgers are likely to be considered a pest due to the damage they can cause in gardens and allotments. Local badger group contacts can be very useful for identifying suitable sites including abandoned setts.



**Electric fencing has been used here around an artificial sett to contain badgers prior to full release. This site was re-used as badgers were not present, but as rabbits had moved in to the area, an escape tunnel (large enough for rabbits but not badgers) was built into the fencing to allow the rabbits to escape the site.
Photo: Secret World Wildlife Rescue**






Positioning of straw bales covered with tarpaulin around an abandoned sett entrance provides seclusion for badgers being introduced to a pre-release enclosure, giving them somewhere to hide until they decide to enter the sett. Photo: Secret World Wildlife Rescue



Post Release Monitoring

Animals for post release must be marked so that they can be identified. Mammals can be microchipped, tattooed (under licence from Natural England) or marked by fur-clipping, but the latter technique only marks the animal until the clipped fur is moulted out. Tattooing is particularly useful as it is easily visible and so can lead to casualty or dead animals being reported back to the centre. Marked animals then need to be observed. This can be done by direct observation, perhaps using a hide to conceal the observer, but this is very labour intensive and the hours are particularly antisocial if the animals are nocturnal! Trail cameras can be set up along paths that the animals are thought to use to record images of animal activity, and staff at Secret World are developing an application of Radio Frequency





Identification (RFID) technology (the wireless use of electromagnetic fields to transfer data, for the purposes of automatically identifying and tracking tags which contain electronically stored information) to identify and monitor individual animals that pass close to reader devices set up in the habitat.

Article written by Terri Amory, BWRC.



The Mammal Society's 62nd Spring Conference & AGM

Friday, April 8, 2016 - 19:00 to Sunday, April 10, 2016 - 16:30
at Yarnfield Park Training and Conference Centre, Yarnfield,
Staffordshire ST15 0NL for details see
<http://www.mammal.org.uk/conference>

Call for Papers

We are keen to hear from as wide a range of speakers* as possible;. Please share your experiences and findings. To present a paper or poster on an academic research project, interesting results from consultancy work or amateur surveys conducted by local groups and members, send offers to scientific programme coordinator Kate Williamson via e-mail to tms2016springconference@gmail.com with the subject "**Abstract for spring conference**" by **15th December 2015**.





A decade of garden bird disease investigation: what have we learnt?

Presented by Becki Lawson, Zoological Society of London to BWRC Symposium 2015, 17th October 2015

Dr Becki Lawson MA VetMB MSc PhD Dip ECZM (Wildlife Population Health) MRCVS is a Research Fellow at the Institute of Zoology, Zoological Society of London. After qualifying as a veterinarian, she worked with wildlife casualties at RSPCA West Hatch. Since then, her work has focused on wildlife disease investigation in Great Britain with various marine and terrestrial species.

In 2005, the Garden Bird Health *initiative* was set up to investigate causes of mortality in British garden birds. “Citizen Science” offers a practical and cost-effective solution to achieve wildlife disease surveillance on a large scale across Great Britain. A combination of two independent but complementary surveillance schemes were employed: opportunistic reports of garden bird mortality incidents were solicited from the general public, while systematic surveillance on a weekly basis was undertaken by participants in the British Trust for Ornithology’s Garden BirdWatch network. Post mortem examinations were performed on a subset of incidents following a standardised protocol using set case definitions.

Over the past decade, in excess of 3000 post mortem examinations have been performed on over 60 garden bird species: these find-



ings have revealed marked dynamism in these species' disease ecology. Two previously known pathogens, one parasitic and the second viral, have emerged in new host species, while the incidence of a common bacterial infection has apparently reduced markedly:

- Finch trichomonosis, caused by a single clonal strain of the protozoan parasite *Trichomonas gallinae*, is thought to have originated from British columbiforms (pigeons and doves). Seasonal epidemic mortality due to this emerging infectious disease led to the decline of 35% (circa 1.5 million birds) of the UK greenfinch (*Chloris chloris*) population within a 4-year period and this epidemic and its impact is ongoing.
- Paridae pox has emerged as a cause of severe skin lesions, particularly in great tits (*Parus major*), with significant impact on individual bird survival and reproductive success. Incursion into south-east England of this strain of avian poxvirus is hypothesised to be from either Scandinavia or central Europe, where Paridae pox has previously been observed.
- The incidence of passerine salmonellosis, an endemic disease caused by host-adapted phage types of the bacterium *Salmonella* Typhimurium, has reduced markedly since 2008.

In 2012, the project was expanded to include amphibian, reptile and hedgehog health surveillance as well as garden birds and became Garden Wildlife Health (www.gardenwildlifehealth.org). GWH partners include the Zoological Society of London, the British Trust for Ornithology, Froglife and the Royal Society for the Protection of Birds.



Greenfinch with fluffed-up plumage and food/ saliva adherent to beak, as commonly observed with finch trichomonosis (ZSL image)



We appeal to members of the public for sightings of sick and dead garden wildlife via our website. **Wildlife rescue centres can make a valuable contribution** to our understanding of the conditions that affect British wildlife species through reporting to GWH. We focus disease investigations on animals that die or are euthanased within a short period after admission, so we can learn about the conditions that are important in the wild, but we are interested to hear about unusual or novel syndromes that wildlife carers observe in these species. Please note that we cannot accept duty of care for wildlife casualties or offer advice on treatment.

A series of fact sheets and symptom identifiers for some of the most frequently diagnosed conditions is available on the website.

For more information please e-mail: gwh@zsl.org




Great tit with fleshy skin growth typical of Paridae pox (ZSL image)

For the attention of BWRC contributors

Firstly, on behalf of the BWRC committee I would like to thank you for your years of financial support for the British Wildlife Rehabilitation Council. You may or may not be aware that we launched an Associate Membership in 2014. The primary aim of this was to make what was previously a very informal (and confusing) relationship between the charity and its supporters more formal and fairer for those supporters – a clear fixed fee per person, with clearer benefits of membership (including discounted ticket prices for BWRC events). In order to simplify the work of administering membership, ticket sales and newsletter distribution, **our list of contributors who are not associate members will be closed down in 2016**. We would therefore like to encourage you to take up the opportunity to become an associate member by completing the application form on the back cover of this newsletter (or download from our website with terms and conditions – www.bwrc.org.uk) and sending it to The Treasurer, BWRC, PO Box 8686, Grantham, NG31 0AG.

Terri Amory on behalf of the BWRC Committee





Optimising the nutrition of animals during rehabilitation


Presented by Dr Peter W. Scott FRCVS to BWRC Symposium 2015, 17th October 2015

Peter Scott is a Liverpool vet school graduate with over 25 years' experience in practice working with pet, zoo and native wildlife casualties, and has been closely involved in a number of wildlife conservation and reintroduction projects. He is an RCVS specialist in Zoo and Wildlife Medicine and Fish Health and Production and is a Fellow of the Royal College of Veterinary Surgeons for Psittacine Medicine and Surgery. Recognising a lack of tools for nutritional support of patients in his practice, Peter set up his own company Vetark Professional to produce animal health products for exotic pets. His presentation highlighted the importance of careful consideration for the nutritional support of wildlife casualties, with some pitfalls to avoid.

A common goal of wildlife rehabilitators is to send an animal back to the wild in a better physical and physiological state than it was found. However, keeping an animal captive for expensive high-tech veterinary treatment, only to provide inadequate nutrition, can be a huge waste of effort. Diets in captivity need to be acceptable and nutritionally correct, and water or fluids should always be provided to correct and prevent dehydration.

When planning to feed a casualty, factors to be taken into account include the species and type of gastrointestinal tract, wild dietary





preferences, and metabolic characteristics. The few animals that have been subject to detailed nutritional studies show how important metabolic characteristics can be, yet how little we know about them. Cats are the classic example – as obligate carnivores, they have a substantially higher protein requirement than other animals. They are unable to synthesize the amino acids arginine and taurine and so their presence in adequate quantities in the daily diet is essential. Cats are also unable to convert dietary beta-carotene to active vitamin A, or tryptophan (an essential amino acid for humans) into niacin (also known as vitamin B3) – species specific requirements that must be met to maintain health. Unfortunately the level of research carried out by the pet food industry into dogs and cats has yet to be paralleled in any other species, and situations where animals are offered inappropriate foodstuffs through ignorance are all too common.

Basics

Their situation means that wildlife casualties are likely to be suffering from malnutrition when presented.

- The provision of appropriate environmental temperature and rehydration therapy are first priorities to support casualties that may be suffering from shock.
- Monitoring of body weight is important – initially on which to base feeding calculations, and then to ensure that appropriate weight gain is being achieved.
- Quantities of food offered should be appropriate for the casualty – ad lib feeding is likely to lead to refeeding syndrome (see below) or obesity in the longer term.
- Selective feeding can also lead to imbalances – as seen in domesticated rabbits, wild squirrels offered a mixed feed will pick out certain components – pelleted feeds can prevent this behaviour, but long term are likely to change animal expectations.
- Young animals, or those likely to be in captivity for longer than a week should be supported with mineral and vitamin



supplements. It is recommended that supplements are added on a daily basis to stop animals deliberately avoiding supplemented food.

Vitamin supplementation in feed is recommended over provision in drinking water because vitamins are more easily oxidised in water, and calcium in domestic water supplies can interfere with the absorption of vitamins and interact with some minerals, so restricting which can be included. Some birds in particular tend to drink very little, or will avoid what they consider to be contaminated water and so water supplementation may not be effective.

Diet formulation

Where reliable figures are not already published for a species, it is possible to calculate nutritional requirements of animals based on their size. However this is a complex process, and recent reviews of literature on human nutrition have shown that standard calculation methods are not necessarily accurate for different life stages or during illness.

Animals generally regulate their food intake according to its energy content. The energy density of a diet is crucial – too low and the animal may be physically unable to eat enough food to meet its needs; too high and the animal may not consume enough to meet other nutrient requirements. More than necessary highly energy dense, highly palatable food will lead to



*X-ray showing curved leg bones in an African grey parrot chick resulting from mineral deficiency and too rapid a growth rate Photo P. Scott





obesity (just like that chocolate box opened for Christmas!).

Once the animal's requirements have been established, it is then of course necessary to know the energy concentration of the foodstuff being considered – which also has to be digestible by that species. (For example, plant matter has more digestible energy content for herbivores than other animals because they have specialized gut physiology to deal with plant fibre!).


A formula for energy requirements (in kcal) of birds which accounts for the requirements of recovering from illness over and above basal metabolic rate is as follows -

$$1.5 \times k \times (\text{Body Weight in kg})^{0.75}$$

where the constant “k” is different for different types of birds; for example for passerines $k = 129$, while for parrots $k = 78$.

A formula for placental mammals is given as -
 $57.2 \times (\text{Body Weight in kg})^{0.716}$





In captivity, excess energy consumption is more common than the opposite, and can lead to raised growth rates in young animals. If other nutrients are not provided to equivalent levels, this can lead to secondary deficiencies – for example limiting mineral deposition in bones*.

In practice it may be that most casualties' requirements are being roughly estimated or arrived at by an element of trial and error, but little of the data available to veterinary staff or rehabilitators is being recorded or collated in a way that will progress wild casualty nutrition outside of individual centres.

Computer programmes have been developed as tools for diet formulation, including 'Animal Nutritionist' available until the early 1990s, Peter used this to develop the Vetark products. An American programme called Zootrition™, designed for “zoo and wildlife professionals” is currently available via the internet on CD from \$400 (with subsequent support costs); another option is the \$1500 Format FAUNATM released in April 2015 - however it is important to note that these are tools for use with healthy animals, and so may be of limited use for casualties.

Refeeding Syndrome

This is a condition first recognised in human patients rescued from Japanese concentration camps after the Second World War. A period of starvation (not unusual in casualties between sustaining an injury and being presented to a vet) causes changes in metabolism to use body fat and if necessary protein to provide energy, and stores of the minerals phosphorous, potassium and magnesium are depleted. If food is reintroduced suddenly in large quantities, the body's metabolism is stimulated to try to synthesise replacement glycogen, fat and proteins. However these processes require the aforementioned minerals, and the lack of these can result in sodium and fluid retention, potentially leading to cardiac and respiratory failure. Severe hypophosphatemia, in particular, is an early warning sign, and so serum phosphate levels should be





closely monitored in patients at risk of refeeding syndrome.

Refeeding syndrome is therefore avoided by introducing food more cautiously so as not to overstimulate the metabolism before mineral levels can be replenished. In humans it has been concluded that nutritional support should be reintroduced at 80% of the estimated normal energy requirement - Peter recommends that 50 – 80% of the food required to meet energy needs is offered in the early stages of feeding in order to avoid refeeding syndrome. He also recommends that vitamin and mineral supplementation should be started immediately and continued for at least 10 days.

Knowledge of the animal's natural dietary preferences is of course essential information on which to base a suitable captive diet, both in terms of nutritional composition, and its recognition by the patient as food! (Many rehabilitators will have encountered well-meaning members of the public that have offered inappropriate foodstuffs to casualties). However, casualty animals may suffer from injuries or weakness and loss of appetite which means that they cannot feed themselves or consume normal solid food – in these cases supporting products are available that can be given to the patient until they are recovered enough to feed themselves (see below).

Vetark Products

Vetark produce high potency vitamin and mineral supplements (branded Nutrobal and Arkvits), probiotics (ProC for mammals and Avipro Avian for birds) and animal safe disinfectants for use on wild bird feeding stations as well as in captive hospital and housing situations. Nutrobal is recommended for juveniles and insectivores (especially bats) because it has a higher calcium and vitamin D3 content to support bone growth. Where juvenile animals are being supplemented with ultraviolet (UV) lighting, Nutrobal supplementation can be alternated with a simpler calcium supplement such as Calci-dust. Arkvits is recommended for adult



animals due to its higher vitamin A & C content. Vetark also produce a range of probiotic products which support natural gut flora, while depressing the activity less desirable (gram negative) bacteria such as E. coli and Salmonella species.



Vetark Critical Care Formula (CCF) is a liquid feed for all animals (including birds) that can be administered easily by syringe, by lapping or by feeding tube in collapsed animals, and is fine enough to go through a nasogastric tube used by veterinary surgeons. Feeding via the gut (enteral route – as opposed to parenteral nutrition, for example via a vein) has the advantage of stimulating the action and maintenance of the mucosal membranes which line the gastrointestinal tract, as well as supporting the vital microbes essential to the digestion (of herbivores in particular). Energy is provided via digestible carbohydrates rather than fat because exotic pets are prone to metabolic liver disease involving a build-up of fat in the liver. For herbivores, once started on CCF and up on their feet, Oxbow Critical Care can be introduced mixing them for a few feeds to provide energy and dietary fibre (again vital for the survival of herbivore gut microflora) until the casualty is able to consume solids/ appetite returns. The daily ration should of course be divided into a number of feeds per day accounting for the capacity and tolerance of the casualty.

*Dr. Peter Scott FRCVS, Vetark Professional, PO Box 60,
Winchester, SO23 9XN.*

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Article written by Terri Amory, BWRC. Please note that BWRC does not endorse Vetark products; other commercial nutritional supplements are available.





BWRC Trustees

Terri Amory, Janet Peto, Tim Thomas, Anne Maskell, Simon Allen, Molly Varga, Adam Grogan, Chris Percival

BWRC would like to thank volunteers Caroline Gould **Website Administrator** and Jayne Morgan **Facebook Page**

Newsletter designed and produced by Nadine Barrow

If you would like to submit an article or letter for publication or give a presentation at a future symposium please contact

Annemaskell@gmail.com

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