



BWDS NEWSLETTER

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Recolonisation of Flanders by wild boar.

Photo : Jim Casaer (Instituut voor Natuur- en Bosonderzoek)

1. Editorial

The BWDS offers a forum for continued communication between those with an interest in the “disease” approach of wildlife matters, focusing on the Belgian situation. Therefore it is useful to reflect briefly on the meaning of “wildlife diseases”. Clear definitions of this commonly used concept are difficult to find. Firstly, if we talk about infections, which appear to represent the main part of the subjects dealt with under the umbrella “wildlife diseases”, often these infections do not cause “disease” in their wildlife carriers, although they may. If talking about diseases in domestic animals and humans, a better denomination would be “wildlife-borne diseases”, but this denomination omits every other meaning except the impact of wildlife-borne pathogens on non-wildlife. Inversely, in “wildlife health”, a possible impact on non-wildlife species is readily neglected. On the other hand “diseases” covers many more subjects than infectious diseases only. Furthermore, focusing on diseases does not validate the context of ecological interactions of which diseases are often only a part or a consequence. This “semantic” discussion brings us to the startling question of what is the exact interest area we want to deal with. The answer is at least twofold and depends on the people involved: biologists and conservationists focus on “wildlife health” and the ecological interactions of wildlife with their internal (“micro- and macro-parasites”) and external environment, while medics, livestock vets and epidemiologists focus on risk assessment when studying wildlife. In other words, there is a fundamental difference in approach between focusing on wildlife itself or focusing on the risks they can pose for non-wildlife. If we continue to use the terminology “Wildlife diseases” and “Wildlife health” we admit the “wildlife centred” approach which was likely the objective in the foundation of most organizations active in this field (such as the WDA, EWDA, DWHC) . Yet a view as broad as possible, with attention for the strong interrelationships between ecological, conservational, biomedical and epidemiological aspects, is the obvious way to take at most profit of the available information. Finally, this broad approach is nothing less than the “One Health” concept.

In addition, it is important that a wildlife disease society should maintain a baseline interest for all subjects in the broad field they are covering, rather than “only” emphasizing the most spectacular “topics of the day”, that in general not suffer from a lack of attention.

This year we celebrate the 10th anniversary of the BWDS. What started as a small initiative among a few like-minded friends, in continuation of the former “Study Group on Wild Animals”, soon drew the attention of many wildlife disease interested people with different professional and voluntarism-based backgrounds. This evolution ran level with the increasing “One Health” consciousness, putting forward the common interests of different disciplines in dealing with wild animals and nature in general. During the last five years the frequency of our general meetings increased from two to three each year, illustrating the multitude of interesting subjects that can be covered despite the apparent low wildlife prevalence in

this highly urbanized and small country. Although many of our meetings in the past took place in the Brussels region, the involvement of participants of the southern part of Belgium stayed marginal until recently. Therefore, and in order to emphasize the first word in the name of our society, we would like to encourage a more active participation of the French speaking part of the country. To put this objective into practice, we had an excellent meeting at the end of May at the AgroTech Faculty in Gembloux, province of Namur, kindly organized by Kim Nguyen of the Entomology unit. You will find a short report of the meeting in this Newsletter.

Next to the general meetings, the biannual BWDS Symposia did receive a broad interest since the first edition in 2005. They are organized around a central theme with presentations by invited speakers and poster sessions, the latter not necessarily linked with the general theme. This year, we will have the 5th edition “Spatial Approach of Wildlife Diseases”: we are looking forward to meeting you all in Tervuren on October 18th ! (cf. below)

The BWDS board wishes you all a long, sunny and healthy summer with many exciting wildlife experiences !

(Text: P.Tavernier)

2. 5th BWDS Symposium

This is a short update for the 5th BWDS Symposium, in order to keep in touch about some important practical points. This 5th Symposium is a jubilee edition as the BWDS exists 10 years in 2013.

- Registrations are running now. The **“early bird” registration fee is valid until July 31st**. Thus if you plan to attend do not wait until August when you will have to pay the full amount.
- The proposed **deadline for sending the abstract of your presentation** is July 31st and is approaching very rapidly. This reminder may help you to get ready in time so that we can start to compose the abstract book. If you experience any difficulties to send us your abstract in time, please inform us as soon as possible. Note that the abstracts should be submitted via the [BWDS website](#) where we you can also register.
- There are still **possibilities for free oral communications** (cf. symposium program) fitting within the Symposium theme “Spatial Approach of Wildlife Diseases”. For poster presentations there is no limitation and any wildlife disease subject (in a broad sense) is welcome. Again, please think about sending us your abstracts in time i.e. before July 31st. The best poster will be awarded.
- As the vets among you will surely know, a strictly organized obligation for continued education has been edited recently by the Veterinary Council. We can announce now that our Symposium has been **accredited with 4 EBP/PFCC points (“Erkende Bijscholings Punten / Points de Formation Continue Certifiée”) for the whole Symposium day**. At the registration desk we will hand you a certificate of attendance on your demand.

- An award for the best student thesis on wildlife diseases written during the last two years preceding the 5th BWDS Symposium will be handed to the winner at the end of the Symposium day : cf. info below.

3. Award for the best student thesis on wildlife diseases : Guidelines in Dutch / French

Prijs voor de beste thesis over ziekten in de wilde fauna : richtlijnen // Prix pour le meilleur mémoire traitant les maladies dans la faune sauvage : directives

Nederlandstalige tekst

De Belgian Wildlife Disease Society (BWDS) reikt een tweejaarlijkse prijs uit voor een eindwerk handelend over ziekten die voorkomen bij wildlevende inheemse dieren. Afgestudeerthesissen of casusbeschrijvingen betreffende dit onderwerp en ingestuurd in de periode tussen Oktober 2011 (4^{de} BWDS Symposium) en ten laatste juli 2013 komen in aanmerking voor deze prijs ten bedrage van 300 Euro. De scriptie wordt beoordeeld door een intern leescomité binnen de BWDS.

De volgende voorwaarden worden vooropgesteld bij het toekennen van de prijs:

- Enkel afgestudeerthesissen (masters degree of equivalente graad) van hogere onderwijsinstellingen komen in aanmerking, dus géén PhD thesissen. (Zowel volwaardige scripties als casus-scripties)
- Het onderwerp moet rechtstreeks verband houden met het thema “ziekten in de wildlevende fauna” in zijn breedste betekenis, waarbij dit verband niet van ondergeschikte orde mag zijn.
- Zowel literatuurstudies als eigen (origineel of voortgezet) onderzoek komen in aanmerking.
- Het onderwerp moet zich richten op informatie over het Belgische grondgebied of tenminste over diersoortpopulaties die in het wild voorkomen op het Belgische grondgebied.
- De bestudeerde diersoorten en -populaties moeten natuurlijk in België voorkomen ofwel op het Belgisch grondgebied geïntroduceerd zijn. De als huisdieren gehouden of door de mens in gecontroleerde omstandigheden gehouden diersoorten komen niet in aanmerking.
- Er wordt slechts één prijs uitgereikt om de twee jaar en voor het hele land. Alle scripties die binnen de betreffende tweejaarlijkse periode bij een Belgische onderwijsinstelling ingediend werden kunnen deelnemen. De prijs zal uitgereikt worden ter gelegenheid van het tweejaarlijks gehouden BWDS Symposium nl. op 18 Oktober 2013
- Het bedrag van de prijs wordt alleen door de algemene vergadering van de BWDS vastgelegd en bedraagt 300 Euro.
- De BWDS behoudt zich het recht voor om de prijs niet uit te reiken wanneer niet aan de hierboven genoemde voorwaarden is voldaan of wanneer het leescomité oordeelt dat geen enkele van de ingezonden scripties voor de prijs in aanmerking komt.

De auteur van de bekroonde scriptie wordt gecontacteerd door het BWDS bestuur vóór het Symposium en dient persoonlijk aanwezig te zijn op het Symposium. Hij/zij verwerft automatisch voor twee jaar het lidmaatschap van de BWDS. De lijst van de ingezonden scripties zal gepubliceerd worden op de website van de BWDS, evenals de titel en een korte samenvatting van de winnende scriptie met de naam van de auteur. Indien de winnende auteur dit wenst dan kan hij/zij ook zijn/haar scriptie kort mondeling presenteren tijdens het BWDS Symposium, hetgeen wij ten zeerste aanmoedigen.

Studenten die wensen mee te dingen naar deze prijs gelieve zich kenbaar te maken bij het BWDS bestuur (info@bwds.be) waar U eveneens nadere inlichtingen hierover kunt bekomen.

Texte en Français

La Belgian Wildlife Disease Society remet un prix biennal pour un mémoire qui traite des maladies dans la faune sauvage indigène. Les mémoires écrits entre octobre 2011 (4^{ème} symposium de la BWDS) et juillet 2013 pourront être pris en considération pour ce prix d'un montant de 300 euros. Les mémoires seront évalués par un comité de lecture interne de la BWDS.

Les conditions pour pouvoir postuler au prix sont les suivantes :

- Le mémoire ou travail de fin d'étude (de niveau master ou équivalent) doit avoir été réalisé dans un établissement d'enseignement supérieur belge (le prix ne s'adresse pas aux thèses de doctorat). Les mémoires de recherche ainsi que les mémoires descriptifs sont acceptés.
- Le sujet du travail doit être directement lié aux maladies de la faune sauvage au sens large ; ce lien ne doit pas être secondaire.
- Les recherches (originales ou confirmatoires) ainsi que les travaux bibliographiques sont aussi acceptés.
- La recherche doit apporter des informations sur la situation en Belgique ou au minimum sur des espèces animales qui sont trouvées à l'état sauvage en Belgique.
- Les populations étudiées doivent se trouver à l'état naturel en Belgique même si elles y ont été introduites. Les animaux domestiques ou gardés sous conditions contrôlées n'entrent pas en considération.
- Nous n'attribuons qu'un prix tous les deux ans pour le pays entier. Nous acceptons tout mémoire défendu en Belgique lors de ces deux années académiques quelle que soit la session.
- Le prix sera décerné lors du 5^{ème} symposium de la BWDS qui aura lieu le 18 octobre 2013.
- La valeur du prix a été déterminée par l'assemblée générale de la BWDS et est de 300 euros.
- La BWDS se réserve le droit de ne pas décerner le prix lorsque les conditions ci-dessus ne sont pas remplies ou lorsque le comité de lecture juge qu'aucun mémoire reçu ne correspond au prix.

L'auteur du mémoire lauréat sera contacté par le conseil de la BWDS avant le symposium et devra être présent en personne au symposium. Elle/il sera automatiquement affilié à la BWDS pour deux ans. La liste des mémoires reçus sera publiée sur le site internet de la BWDS, ainsi que le résumé du mémoire ayant reçu le prix. Si elle/il le souhaite, le/la lauréat(e) pourra brièvement présenter son mémoire lors du symposium de la BWDS, ce que nous encourageons fortement.

Les étudiants désirant concourir pour ce prix sont priés de prendre contact avec le conseil de la BWDS (info@bwds.be) où ils pourront recevoir des informations supplémentaires.

4. Meeting Report General Assembly December 20th, 2012 at the INBO, Geraardsbergen

The participants were welcomed at 10 am in the meeting room of the Institute for Nature and Forestry (Instituut voor Natuur en Bosonderzoek, INBO) at Geraardsbergen, for the start of a very interesting day. This division of INBO is localized at the site of a former match factory which explains the origin of the research unit on poplars that is seated here, together with biological units for wildlife research (focusing on large game, carnivores and rodent control). The morning session was presented by Ir. Jim Casaer who gave a comprehensive and well appreciated overview of the recent expansion of wild boar into Flanders (see abstract below), followed by a long interactive discussion. The many questions proved the interest for the wild boar story and its possible implications.

After lunch the participants could enjoy a visit to the facilities of the carnivore unit, where the biological characteristics of the different carnivore species occurring in Flanders were explained by Koen Van Den Berge, wildlife biologist. This was illustrated by an osteologic collection and by specimens kept frozen at -24°C. Then Kristof Baert presented an overview of the research done in the frame of rodent control, mainly focusing on rodenticide resistance in brown rats. The visit included the experimental animal facility of the rodent control research group.

(Report: P. Tavernier)

5. Short Abstract of Presentation, December 20th, 2012

Presentation Jim Casaer : Recolonisation of Flanders by wild boar, a recent story

Excluding Voeren (south-east part of Flanders, situated nearby the Ardennes) and some rare observations of individuals in the north of Flanders, wild boar has been absent in Flanders for over a century. Since 2006 observations of wild boar were reported from different locations all over the region. The Research Institute for Nature and Forest (INBO) therefore initiated a project to assess the presence of wild boar in the region and to monitor the management of the species. In order to assess the distribution area and its possible increase, a map divided into squares of 1 km² is sent out annually to the foresters of the Agency for Nature and Forest since 2008. They indicate the presence of wild boar in each square kilometre using three possible categories, namely: present, absent, unknown.

As to assessing population size and monitoring wild boar management, hunters have to complete a culling report for each wild boar shot. This report includes the place and date of culling, the weight, sex and age class (juvenile, sub-adult, adult). For female wild boar the number of embryos is recorded when present. In addition, the hunter has to indicate whether the animal was solitaire or in group, and in latter case the group size has to be recorded. Furthermore, from each wild boar shot the jaw and a tissue sample are collected for further analysis by INBO. Tissue samples are collected for later genetic analyses. The jaw is used to estimate the correct age of the animals. The age is determined with a precision of one month till the age of 24 months. For older animals the ages are estimated using year-classes. The combination of estimated age and year of culling allows us to recalculate the annual cohort sizes and estimate past minimum population sizes. Using this information, a rough indication of the annual increase of the population can be calculated. The results of this multi-methods approach show that, although the annual bag is increasing (from 20 in 2006 to at least 150 in 2011), the population of wild boar continues to increase in the region. The actual population increase for the province of Limburg, which is currently the main distribution area in Flanders, is estimated to be 2,12 (increase in distribution area is confirmed by the annual distribution maps).

In 2012 a collaborative management initiative was launched, bringing together governmental wildlife managers and researchers as well as local stakeholders like hunters, farmers, nature conservation NGO's and municipalities, in order to set up an adaptive management approach for wild boar in two areas in the province of Limburg.

(Text: Jim Casaer, Thomas Scheppers)

6. Meeting Report General Assembly, May 29th, 2013 at the Agro-BioTech Faculty (ULG), Gembloux

The Agro-Biotech Faculty of the Liège University occupies the neo-classical buildings of the ancient abbey of Gembloux, a wonderful location inviting to explore its mysteries. We were welcomed in the morning by Kim Bach Nguyen (Functional and Evolutionary Entomology Unit) who kindly organized this meeting. Although the subjects of the presentations were not exactly about “wildlife” they framed very well into the One Health concept and offered an excellent view on a hitherto unknown field for many wildlife disease enthusiasts. The subjects included : (1) biological control of the tomato leafminer, an invasive pest species on tomato plants, (2) entomophagy, an interesting alternative for future food production, and (3) the pretended decrease in honey bee populations . The short abstracts of these presentations are listed below. After lunch in the faculty refectory, the participants were offered a guided tour to the labs and the impressive entomological collection of the Entomology Unit.

(Report P.Tavernier)

7. Short Abstracts of Presentations, May 29th, 2013

1) Présentation par Rudy Caparros Megido : L’entomophagie, défi du futur

En 2050, il faudra nourrir 9 milliards d’individus sur terre, soit 1,33 fois plus qu’à l’heure actuelle. De plus, la consommation humaine devrait augmenter de 1,77 fois suite au nouveau mode de consommation des pays émergents. Vu la difficulté actuelle de trouver de nouvelles surfaces cultivables ou de production, d’autres alternatives sont à mettre en évidence. A l’unité d’Entomologie de Gembloux Agro-Bio Tech, nous avons décidé de développer l’entomophagie ou la consommation d’insectes par l’être humain. Plus ou moins 1500 espèces sont consommées dans le monde parmi divers ordre d’insectes dont les principaux sont les Coléoptères (30% des espèces consommées), les Lépidoptères (17%), les Hyménoptères (13%), les Orthoptères (10%) et les Hémiptères (8%). Il est légitime de se demander l’intérêt de consommer des insectes. Premièrement, ces derniers possèdent des qualités nutritionnelles remarquables (taux de protéines, d’acide gras non saturés, de vitamines et de minéraux importants) en fonction de l’espèce-cible, de son stade de développement et de sa diète de développement. Deuxièmement, ils possèdent un meilleur taux de conversion de la nourriture que les élevages conventionnels (10 kg de fourrage donne 1kg de bœuf contre 8 kg d’insectes) et ils possèdent un faible impact environnemental (3 fois moins d’émission de gaz à effet de serre). Finalement, des études complémentaires sur la sûreté de la consommation d’insectes sont à réaliser. En effet, très peu de données sont disponibles sur les allergènes présents dans les insectes ainsi que les maladies ou parasites pouvant être transmis par le biais de leur consommation.

2) Présentation par Gil Leclercq: La mortalité de l'abeille domestique : Entre communication médiatique et scientifique

L'abeille domestique occupe un rôle clé dans nos écosystèmes, de par son importance dans la pollinisation des cultures et des fleurs sauvages. Loin d'être une espèce en voie d'extinction, elle représente néanmoins un sujet de préoccupations causées par des pertes considérables de colonies lors des dernières décennies. Le sujet est actuellement très prisé par les médias. Cependant, le message véhiculé par ceux-ci est souvent incomplet voire biaisé. La problématique ne se résume pas à la simple action des pesticides, mais à une multitude de facteurs souvent ignorés du grand public. En effet, on est face à un problème multifactoriel, variable dans l'espace et le temps.

L'Unité d'entomologie fonctionnelle et évolutive de Gembloux Agro-Bio Tech (ULg) travaille sur des thématiques très diverses concernant l'abeille, avec comme exemples : la qualité des sirops de nourrissage (Projet HMF), la qualité des miels, la détection virale, la diversité phénotypique et génétique de l'abeille et la sélection de souches tolérantes au *Varroa* (Projet Selapis).

3) Présentation par Lara Debacker : Development of new strategies against the tomato leafminer, *Tuta absoluta* Meyrick

The tomato leafminer, *Tuta absoluta* (Meyrick), is a Lepidoptera considered as one of the major pest of Solanaceae. It causes important yield loss in South America, where it is originated, and in the West Palearctic region, where it was introduced in 2006. Insecticide applications and the use of the sexual pheromone have been the main control method used against *T. absoluta*. Insecticides are inefficient because of the endophytic habit of larvae, which are protected in the leaf mesophyll or inside fruits. Moreover, resistances against various insecticides have been reported. The sexual pheromone based strategies also provide poor results. One explanation has been recently provided by the demonstration of a parthenogenetic reproduction in *T. absoluta*, from the research group in Gembloux Agro-Bio Tech (ULg). Because there is a real need to improve crop protection against *T. absoluta* and in the meanwhile reducing the use of synthetic insecticidal compounds, researches aim at providing new perspectives to further biocontrol strategies against *T. absoluta*

8. Summer Workshop Ecology and Evolution of Parasites and Infections : Community Ecology and Evolution

From 17-19 September 2013, the Evolutionary Ecology Group at the Department of Biology, University of Antwerp organizes a 3-day Summer workshop " **Ecology and Evolution of Parasites and Infections: Community Ecology and Evolution**".

This workshop is open to **Ph.D.-students and young post-doctoral researchers** with an interest in the **Ecology and Evolution of Parasites and Infections**. Participation is **free of charge** and includes hand-outs, refreshments during breaks and lunch. The number of participants is limited to 15.

For registration (obligatory), send an email with a brief motivation (max. 10 lines) and a CV to herwig.leirs@ua.ac.be before 31 August.

Program

The program of the workshop consists of two different activities:

- 1) Renowned international scientists will give lectures, at PhD-student level, about recent developments related to the workshop theme in their discipline. These include (titles still to be specified more):
 - Karen McCoy (IRD, Montpellier): *Borrelia in multiple hosts: ecology, adaptation and population genetics*
 - Yannis Michalakis (IRD, Montpellier): *Evolution of virulence and resistance: lessons from evolutionary models and implications for vector control*
 - Pablo Murcia (University of Glasgow): *Evolutionary genetics of within-host competition and across-host transmission*
 - Roman Biek (University of Glasgow): *Limits and opportunities of using whole genome sequence data for understanding problems of cross-species transmission and disease persistence in heterogeneous landscapes*
- 2) All participating PhD-students and post-docs briefly present their research project and have ample time to discuss it with the other participants and the international scientists. The aim is to stimulate networking within Flanders and receive fresh input from top experts in the field.

The exact planning of the three days will depend on the background of the participating students/postdocs, since the lectures and the participant presentations will be grouped thematically.

Background

Since about two decades there is a strong and growing interest in the ecology and evolution of parasites and infections. This interest is stimulated from two sides. In Biology it is well accepted that parasitism is a very common ecological relationship of co-existence between species and it is estimated that there are at least as many parasitic as non-parasitic species; moreover parasitism is one of the major driving forces of evolution and the interactions between hosts and parasites provide insights in the different mechanisms of evolution. Secondly, there is a growing concern for so-called new and (re)emerging infectious diseases, most of which are of zoonotic origin or make an evolutionary species jump to become established in humans or livestock. Changing ecological conditions (e.g. due to climate

change, invasion of humans in new habitats) are altering the transmission and distribution patterns of such diseases.

Several research groups in Flanders are studying the above broad topic. The diversity of background disciplines (biology, medicine, veterinary medicine), taxonomic groups of hosts or parasites (viruses, bacteria, Protista, Metazoa), different approaches (microbiology, evolutionary genetics, transmission ecology, disease control, modelling...), a focus on different geographic regions,... make that these groups often are not very familiar with each other. This same diversity could, however, be most enriching and stimulating for students and researchers working in these groups.

The activity is actually intended to be the first one in a series of annually organized workshops on the general theme of "Ecology and Evolution of Parasites and Infections" but each year with a different more specific theme.

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9. Next general assembly

The next general meeting of the BWDS has been scheduled for **19 September 2013 , 10 a.m.** and will take place at the **Antwerp University (UA)**, Campus Drie Eiken, D.U.015, Universiteitsplein 1, 2610 Wilrijk (Antwerpen)

The preliminary agenda includes two presentations :

- (1) Prof. Cristophe Casteleyn : manipulation techniques for restraint in hedgehogs (egel, hérisson): possibilities to block temporarily the nerves responsible for “curling-up”, using local anesthesia. Vascular preparations of hedgehogs will be used to demonstrate these techniques.
- (2) Diederik Strubbe: presentation about rose ringed parakeets (halsbandparkiet; perruche à collier) in Belgium (Brussels) and also on the isle of Mauritius where they may constitute a reservoir for pathogens of indigenous psittaciforms.

The meeting will include a short guided tour of the department veterinary anatomy at the UA.

The final agenda and the exact location at the campus will be sent by mail-flash later on.