BWDS NEWSLETTER

2013/02 19 DECEMBER 2013

Website : www.bwds.be

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Photo: 5th BWDS Symposium Tervuren 18 October 2013

The BWDS board wishes you all a merry Christmas and a very Happy New Year 2014 and we look forward to meeting you at one of our activities in the coming year

1. Editorial

In this December month in which many of us get challenged with a number of deadlines, finding the time to read a new BWDS Newsletter is not obvious. But our commitment of editing a minimum of two Newsletters a year implicates a deadline as well…. Thus here it is, the 2nd Newsletter for 2013. Forget the end of the year rush for a moment and enjoy the reading.

During a recent BWDS board meeting, the past Symposium was discussed and evaluated (see elsewhere in this edition). With the 10th anniversary of the BWDS in mind, also other organizational items were addressed. The BWDS board, counting six people, has always functioned as a team rather than as a number of individuals each responsible for a specific function within the board. Nevertheless it was felt that the existing function assignment, after ten years of being in place, might benefit of some dressing up. This "facelift" should not only result in a more balanced partition of tasks (Newsletters, organisation general meetings and Symposia, website, administration, etc..) but it should also foresee in the substitution of one of the team members. After his job change, Alexandre will not have the possibility anymore to fulfill the tasks he took on his shoulders within the BWDS board. As former calls to introduce new board members, ready to work voluntarily and to be on stand-by continuously, were rather unsuccessful, and as the current team has proven his competences in the past ("never change a winning team"), we have opted for a switch of functions between the current board members. The re-arranged board would then be expected to stay in function for four years, a period including the organization of two biennial Symposia.
The new function assignments from 2014 to 2018 will be : *President :* Paul Heyman; *Vice-presidents:* Paul Tavernier and Stefan Roels; *Board members* : Leen Claes, Kristof Baert *(website).* As there is a lack of French speaking members and non-veterinary disciplines in the board, we will look for a motivated volunteer, corresponding to this profile, mainly to support our team with the administrative and budgetary tasks for the organization of the Symposia. We sincerely thank Alexandre for his excellent work during the last ten years and as a matter of fact we regret his withdrawal as we will miss not only himself as a board member but also his skills having always supported strongly the BWDS activities.

In a small country like Belgium, new wildlife disease events are not so common, and the past year was not different. For the future, together with the international community we will have to focus more and more on the big challenges with a dramatic impact on biodiversity and human and animal health: we are talking about climate change, land use, scaling up, globalization and wildlife trade. Observing, reporting and sharing information are essential steps to surmount the indifference and are therefore basic objectives to fill in for the BWDS. However, increased communication is not enough. Above all we should think about how to create awareness for those who are in the position and have the possibility to take action. Undoubtedly this is the most difficult part of our commitment.

Paul Tavernier

2. Meeting Report General Assembly 19 September 2013, Antwerp

This meeting took place on September 19th at the Unit Pathology and Immunology of the Veterinary Sciences Department of the Antwerp University (UA), Campus Drie Eiken, Wilrijk (Antwerp). We were welcomed by Prof. Cristophe Casteleyn, head of the department and his staff. Maybe due to the eccentric location of the venue or to the bad reputation of the Antwerp traffic jams, the number of attendants was rather low (13).

After the introduction of the speakers, two interesting subjects, although not directly disease-related, were presented. Prof. Casteleyn illustrated an anatomical study in search for anaesthetic possibilities to prevent the "curling up" phenomenon in hedgehogs during examination and treatment. This study was carried out in the context of a master thesis written by Sonja Rutten at the Veterinary Faculty of Ghent in 2011. The second speaker was Diederik Strubbe, a post-doc biologist working on the distribution of the invasive ring-necked parakeet in Belgium. The abstracts of the presentations are included below.

Next to the presentations we were offered a guided visit to the department of Pathology and Immunology and to the anatomical collection. We thank Martine Van Den Broeck (UA, UGhent) for supporting the organisation of this meeting.

3. Short Abstracts of Presentations, 19 September, Antwerp

(1) Presentation Cristophe Casteleyn: Techniques for manipulation of hedgehogs: possibilities to temporarily block the nerves responsible for curling-up, using local anaesthesia

Although the European hedgehog (*Erinaceus europeus*) is a protected species that may be neither caught nor kept in captivity, veterinarians are regularly consulted to nurse diseased or injured hedgehogs in specialized centres. This task is, however, hindered by the curling-up of the hedgehog when examined. Unrolling the prickly patient is nowadays performed by manual force or general anaesthesia. Since these methods are stressful, may cause iatrogenic injury or present a financial cost, alternative methods are highly welcome. The in vivo experiments performed by Michelsson in 1922 demonstrating that the transection of the lateral thoracic nerve results in the inhibition of the curling-up mechanism suggests that injecting a local anaesthetic at the origin of this nerve has the same effect. The lateral thoracic nerve originates from the brachial plexus located in the armpit and courses in dorsolateral direction towards most of the muscles involved in the curling-up mechanism. To set up a protocol for the local anaesthesia of the lateral thoracic nerve, the position of this nerve was first determined in the curled-up animal. To this purpose, corrosion casts of the blood vessels accompanying the nerve were made using cadavers of hedgehogs fixed in curled-up position. In the next step, a precise injection site was determined using the corrosion casts and radiographs of curled-up hedgehog cadavers. The correct position of the injection site, i.e. 1 cm caudolateral

to the external occipital protuberance, between the thoracic cavity and the shoulder blade, was confirmed by means of injections of Indian ink on cadavers. Finally, lidocain was unilaterally injected in living animals under ultrasound guidance.

Notwithstanding the anatomical evidence, these first approaches failed to unroll the hedgehogs. The underlying reasons might include the presence of communicating nerves between the left and right lateral thoracic nerves, the induced paralysis of antagonistic muscles responsible for the unrolling, or the neurological independence of the curling-up musculature once the animal is curled-up. Therefore, the physiology and anatomy behind curling-up needs to be studied in more detail before further experiments aiming to unroll hedgehogs will be performed.

Authors: Sonja Rutten, Paul Simoens and Christophe Casteleyn

(2) Presentation Diederik Strubbe: Ring-necked parakeets: their distribution, population dynamics and impact

Biological invasions, i.e. the human-assisted introduction and subsequent spread of organisms beyond their natural dispersal barriers, are a serious global threat to biodiversity, but also offer a unique opportunity to test several ecological theories. Identifying the mechanisms allowing invasive species to establish and spread is an interesting ecological question, but it also yields crucial information for management of the problems posed by invasive alien species. Using the invasion of Europe by ring-necked parakeets *Psittacula krameri* (Scopoli) 1769, we test some of the most prominent hypotheses on the invasion success of nonnative species, assess whether parakeets impact native avifauna and explore how statistical species distribution modeling techniques can be used to predict the expected distribution, abundance and impact of an established invader.

A comparison of the fate of parakeet introductions across Europe showed that ring-necked parakeets are more likely to establish if they are introduced to locations with a climate similar to their native range while the parakeets also profit from human activities, as establishment success was higher in areas more densely populated by humans. Further support for the role of climate comes from a comparison of parakeet reproductive success in introduced regions such as the UK and Israel and their native range in India, as parakeets living in the colder UK had a much higher rate of egg infertility than parakeets in the native range (India), or populations introduced to warmer Israel. Predation pressure, however, is lower in the introduced regions compared to the native range, and this ‘predator release’ partly offsets the climate mismatch, allowing parakeets to colonize large parts of Europe.

Analyses of data gathered in the Brussels Capital Region and parts of neighbouring Flanders show that also in Belgium, parakeets are associated with human activity, as they reach their highest densities in forests and parks surrounded by built-up areas. Radio-tracking of a small number of breeding parakeets confirmed that parakeets prefer to forage in city parks, gardens and orchards rather than forests or agricultural areas. Parakeet numbers are also strongly associated with tree cavity density, suggesting that cavity availability is a limiting factor. Based on preferred nesting cavity characteristics, parakeets might

come into conflict with native hole-nesting birds such as nuthatches (*Sitta europaea*) and starlings (*Sturnus vulgaris*). Results show that parakeet abundance was a significant predictor of nuthatch abundance but there was no evidence for a relation with the number of starlings. Starlings may be able to cope with the parakeets, as they themselves are notorious invaders, e.g. in North America, where they are known to evict several larger birds from their breeding cavities. Nuthatches normally defend their cavities by adjusting the entrance size of cavities to their own size by plastering up the entrance with mud, but this does not protect them from parakeets, as parakeets start breeding much earlier than the nuthatches do. These findings were verified by an experimental manipulation of cavity availability in two Brussels city parks, as after blocking all parakeet breeding cavities, a significant decline in nuthatch numbers was observed, largely due to nest take-overs by parakeets.

In order to assess the potential geographic distribution of the ring-necked parakeet in Flanders, several statistical distribution modeling techniques were applied. These models indicate that across Flanders, there is ample suitable habitat available for the parakeets. If all these habitats were to be colonized by parakeets, the total population may number ± 22.000 breeding pairs (90 % confidence limits 9 000 to 39 800), indicating that these parakeets could become one of the most numerous cavity-nesters in the region. However, despite the high predicted parakeet abundance, total impact on nuthatches will probably only be small, as maximum one third of the nuthatch population would be at risk. Thus, the establishment of ring-necked parakeets should be prevented, but in areas where they are currently present, there is no imminent ecological threat that calls for an eradication campaign

Author : Diederik Strubbe

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4. Fifth BWDS Symposium

The 5th BWDS Symposium took place on October 18th at Tervuren. As for the former editions, the presentations were built up around a general theme, being this time the ‘Spatial Approach of Wildlife Diseases”. Based on this theme, foreign and Belgian speakers were invited to cover a variety of subjects.

Next to the “invited” presentations, as a novelty we opened the possibility to submit “free” oral communications, which proved to be a success as we received more submissions than the number of slots available. The excess submissions were presented as posters, together with the other poster presentations submitted as such. The “free communications” did probably account for the lower number of posters in this Symposium edition (i.e. 14). A possible solution to encourage the submission of more posters for future editions, is to give free access to students bringing a poster, which could simultaneously increase the student attendance. The awards for the two best posters went this year to Isra Deblauwe (Institute of Tropical Medicine, Antwerp) and to Elena Isabel Alonso-Velasco (CODA, Brussels) .

As usual in such events, some unexpected organizational problems had to be faced until shortly before the Symposium day. Some abstracts were received quite late which delayed the printing of the abstract book, but we managed to get it ready in time. In ultimo tempore two speakers had to be replaced:

we thank Sandrine Lesellier (F) and Katelijne Schautteet (Faculty Bioengineering, Ghent University) for leaping in.

We were happy to see that the comments we received through the evaluation forms were overwhelming positive. Moreover, they included some valuable and constructive suggestions. One of the points to pay attention to for the next editions are to increase awareness about the best student thesis award, as there were no submissions for this symposium edition. A new feature was that veterinarians could collect continuing education points, of which four points were "certified" by the veterinary council

5. Abstracts of winning posters at 5th BWDS Symposium

(1) Exotic vector and pathogen surveillance programme in Belgium.

Isra Deblauwe, Julie Demeulemeester, Maxime Madder (*Institute of Tropical Medicine, Belgium)*

Several vector-borne diseases (e.g. Babesiosis, Bluetongue Virus (BTV), Schmallenberg Virus (SBV), West-Nile Virus (WNV)) are emerging in Belgium or in other European countries and some are now endemic. The increase in international transport, the removal of quarantine measures within the EU zone and the growing tourism contribute to the increasing risk of spread of pathogens and vectors. Strengthening surveillance of exotic vectors (mosquitoes, *Culicoides* and ticks) and their pathogens in areas at risk of importation or spread and risk of virus transmission is therefore required.

Following the implementation of invasive mosquito surveillance in Belgium in 2012, to evaluate the guidelines of the European Centre for Disease Prevention and Control (ECDC), the surveillance continued in 2013 and also included that of exotic biting midges and ticks, and their most important pathogens:

- Passive and active sampling of mosquitoes and passive sampling of *Culicoides* from April till November 2013 at shelters for imported cutting plants, fruits and vegetables, main parking lots along highways originating from colonised areas, ports, airports and/or platforms of imported used tyres.

- Passive sampling of endemic Culicoides from April till November 2013 at a private site in rural area (Betekom).

- Active sampling of the invasive tick *Dermacentor reticulatus* (and also of endemic tick species) from January till June and from September till December 2013 at two colonised sites (De Panne & Moen) and at sites where its presence is suspected (Nature Reserves where cattle or horses are imported from colonised sites).

- Screening for pathogens in invasive mosquitoes (WNV), exotic and endemic *Culicoides* (BTV, SBV) and invasive and endemic ticks (*Theileria equi, Babesia canis, Babesia caballi, Borrelia*, Tick Borne Encephalitis Virus (TBE)).

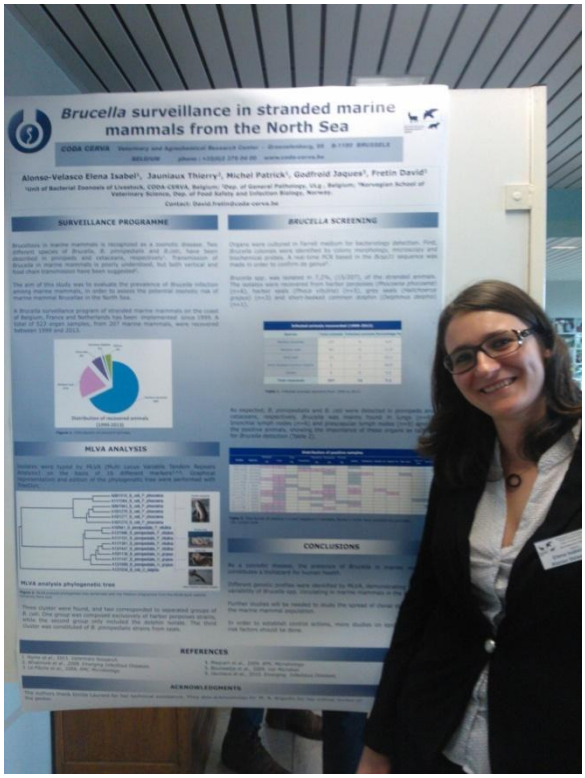
Until now only endemic mosquitos and biting midges were collected at the points of entry, while the tick *Dermacentor reticulatus* was caught between December 2012 and May 2013 in De Panne and Moen. The screening for pathogens is ongoing. Seven pools (2 to 5 ticks/pool) of *Dermacentor reticulatus* were negative for *Babesia* and *Theileria*.

***(2) Brucella* surveillance in stranded marine mammals from the North Sea.**

Alonso-Velasco Elena Isabel, Jauniaux Thierry, Michel Patrick, Godfroid Jaques, Fretin David

(CODA-CERVA, Belgium)

*Brucella i*nfections have been recognized in sea mammals. Two different species, *B. pinnipedialis* and *B.ceti*, have been described in pinnipeds and cetaceans respectively. Brucellosis in marine mammals is recognized as a zoonotic disease. Three cases of marine *Brucella* infection in humans have been reported without any direct contact with marine mammals. This suggests that the infection may have been acquired by the consumption of see food.



Transmission of *Brucella* in marine mammals is poorly understood, but both vertical and food chain transmission have been suggested. The aim of this study was to evaluate the prevalence of *Brucella i*nfection among marine mammals, in order to assess the potential zoonotic risk of marine mammal *Brucellae* in the North Sea.

A *Brucella* surveillance program of stranded marine mammals on the coast of Belgium, France and Netherlands has been implemented since 1999. A total of 341 organ samples from 131 marine mammals, recovered between 1999 and 2011, have been cultured in Farrell medium for *Brucella* detection. Isolates were identified and typed by MLVA (Multi Locus Variable Tandem Repeats Analysis) on the basis of 16 different markers.

Brucella spp. was isolated in 8.4%, (11/131), of the stranded animals. The isolates were recovered from harbor porpoises (*Phocoena phocoena*) (n=6), harbor seals (*Phoca vitulina*) (n=3) and grey seals (*Halichoerus grypus*) (n=2). As expected, *B. pinnipedialis* and *B.ceti* were detected in pinnipeds and cetaceans respectively. *Brucella* was mainly found in lungs (n=7) and bronchial lymph nodes (n=4) among the positive animals, showing the importance of these organs as targets for *Brucella* detection. Different genetic profiles were identified by MLVA, demonstrating strain variability of *Brucella* spp. circulating in marine mammals in the North Sea.

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6. Announcement “Rencontres François Bourlière” (France)

The yearly meetings of our French sister association, « Vétérinaires Faune Sauvage» are known as « Entretiens François Bourlière ». The 2014 meeting will be held from 24 to 26 Januari in the departement « Moselle » in the uppermost north-east corner of the French hexagone. More precisely the meeting will

take place at the « Parc Animalier de St Croix » near to Sarrebourg. The meeting language is French. As the location is within a comfortable distance from Belgium, Belgian wildlife disease enthusiasts are kindly invited to participate.

For those interested to participate, please contact Dr. Jennifer Lahoreau , (cf. quotation below) :

Pour les personnes souhaitant et pouvant y participer, afin de pouvoir au mieux organiser cette rencontre, pouvez-vous me répondre à mon adresse : veterinaire@parcsaintecroix.com en précisant :

- Jour/Heure approximative d'arrivée et - Jour/Heure approximative de départ :

Je vous enverrai prochainement les détails pratiques pour le transport, hébergement, restauration.

Parmi les thèmes de discussion envisagés (d'autres idées sont aussi les bienvenues) :

- Réalisation d'une enquête auprès des membres de VFS

- Gestion de crises : brucellose, tuberculose et le rôle des vétérinaires

- Réseau de suivi sanitaire de la faune sauvage,

For those wanting to carpool from Flanders please contact Paul Tavernier :

paul_tavernier@skynet.be

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7. Next general assembly

At the last board meeting there was no consensus about organising a third general meeting in 2013, considering the fact that we have had also a Symposium this year.

It was agreed on that the next general meeting will be held in the spring of 2014 at the Veterinary Faculty of the Liège University where we will be welcomed by the staff and members of the "Réseau de Surveillance en Faune Sauvage".

The exact date, venue and subjects of the presentations will be communicated to you later on.