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SAFETY PROTOCOLS FOR FIELDWORK

Aviary

Working in contact with birds might expose people to the following zoonosis (more details in appendixes):

1) Salmonellosis. Avian salmonellosis is caused by a group of bacteria of the genus salmonella. Salmonellosis is an extremely common disease among humans. Following a 12-36 hour incubation period, symptoms of fever, headache, diarrhea, abdominal pain, nausea and dehydration develop, which may lead to fulminant septicemia/endotoxemia. Salmonellosis can be transmitted through infected aliments. Inhalation of the bacterium during close confinement in high humidity environments such as hatching and brooder operations, direct contact with infected birds and animals, and insects are demonstrated transmission routes for salmonellosis

Treatment. *Salmonella* infections usually resolve in 5-7 days and often do not require treatment other than oral fluids. Persons with severe diarrhea may require rehydration with intravenous fluids. Antibiotics, such as ampicillin, trimethoprim-sulfamethoxazole, or ciprofloxacin, are not usually necessary unless the infection spreads from the intestines. Some *Salmonella* bacteria have become resistant to antibiotics, largely as a result of the use of antibiotics to promote the growth of food animals.

Prevention. People should wash their hands after contact with animal faeces. Everyone should immediately wash their hands after touching birds, including chicks, or their environment.

2) Chlamydiosis/Psittacosis/Ornithosis. Chlamydiosis refers to an infection with organisms of the genus *Chlamydia* sp., which are bacteria that live within animal cells. *Chlamydia psittaci* is the species generally associated with this disease in birds. The severity of the disease differs by the strain of *C. psittaci* and the susceptibility of different species of birds. As a result, chlamydiosis may range from an inapparent infection to a severe disease with high mortality. The organism is excreted in the feces and nasal discharges of infected birds and can remain infective for several months. Infection commonly occurs from inhaling the bacteria in airborne particles from faeces or respiratory exudates. Other means of exposure include mouth-to-beak contact and handling infected birds' plumage and tissues. Even brief exposures can lead to symptomatic infection. Some infected birds can appear healthy and shed the organism intermittently. Shedding can be activated by stress factors, including relocation, shipping, crowding, chilling, and breeding. At high risk are birds that are kept in overcrowded conditions. Because of the organism's resistance to drying, infected bird faeces at roosts are especially hazardous. Waterfowl, herons, and pigeons are the most commonly infected wild birds. Chlamydiosis also occasionally infects gulls and terns, shorebirds, songbirds, and upland gamebirds.





Treatment. Symptoms include fever, chills, and breathing problems. Chlamydia is treated with antibiotics Tetracycline or Doxycycline, however some newer drugs are also effective.

Prevention. Chlamydiosis can be a serious human health problem, infecting more frequently those who work with birds. **Individuals who work in areas in which there is a strong possibility of inhaling airborne avian faecal material (for example while cleaning the aviaries) must wear a mask or respirator.**

3) Leptospirosis. Leptospirosis is a disease that is caused by pathogenic spirochetes of the genus *Leptospira*. It is considered the most common zoonosis in the world. Leptospirosis has recently been recognized as a re-emerging infectious disease among animals and humans¹ and has the potential to become even more prevalent with anticipated global warming. Leptospirosis is distributed worldwide (sparing the polar regions).

Humans and a wide range of animals, including mammals, birds, amphibians, and reptiles can develop *Leptospira* infection. However, humans are rarely chronic carriers and are therefore considered accidental hosts. Leptospirosis is transmitted via direct contact with the body fluid of an acutely infected animal or by exposure to soil or fresh water contaminated with the urine of an animal that is a chronic carrier. In our crow aviaries, the water pools are the most likely source of *leptospira* contamination.

Human leptospirosis is often acquired via contact with fresh water contaminated by bovine, rat, or canine urine as part of occupational contact with these animals. The disease is also acquired during adventure travel or vacations that involve water sports or hiking, or even as a consequence of flooding. Leptospirosis in humans is characterized by an acute febrile illness followed by mild self-limiting sequelae or an even more severe, and often fatal, multiorgan involvement.

Treatment. Leptospirosis is treated primarily with antimicrobial therapy. In uncomplicated infections that do not require hospitalization, oral doxycycline has been shown to decrease duration of fever and most symptoms. Hospitalized patients should be treated with intravenous penicillin G therapy, the treatment of choice. A recent clinical trial showed that third-generation cephalosporins are as effective as doxycycline and penicillin in the treatment of acute disease.

Prevention. Leptospirosis can be prevented by avoiding water environments that may be contaminated with rats urine or the urine of other animals. When involved in aviary work, people must take extra care, wearing protective gloves when touching water containers and washing their hands immediately after, using first iodine solution (*betadine*) and then rinsing with running water.





4) Tetanus. Also called lockjaw, is a medical condition characterized by a prolonged contraction of skeletal muscle fibers. The primary symptoms are caused by tetanospasmin, a neurotoxin produced by the Gram-positive, obligate anaerobic bacterium *Clostridium tetani*. Infection generally occurs through wound contamination, and often involves a cut or deep puncture wound. As the infection progresses, muscle spasms in the jaw develop, hence the name lockjaw. This is followed by difficulty in swallowing and general muscle stiffness and spasms in other parts of the body. Infection can be prevented by proper immunization and by post-exposure prophylaxis

Prevention. Tetanus can be prevented by vaccination. The CDC (Center for Disease Control and Prevention) recommends that adults receive a booster vaccine every ten years, and standard care practice in many places is to give the booster to any patient with a puncture wound who is uncertain of when he or she was last vaccinated, or if he or she has had fewer than 3 lifetime doses of the vaccine. The booster cannot prevent a potentially fatal case of tetanus from the current wound, however, as it can take up to two weeks for tetanus antibodies to form. All personnel working with us should get a proper vaccine protocol against this disease (unless they have serious contraindications such as allergy against the vaccine).

Fieldwork

Apart from the risks associated with working in contact with birds (see above) fieldwork can expose researchers to the following risks:

1) Accidents during nest monitoring. Checks of nest in bushes or trees must be done from the ground with the telescopic pole whenever possible. If clutches in nests reachable with a ladder must be manipulated for experimental treatments or banding, TWO people must always be present, one holding the ladder. The one climbing the ladder, must wear a harness and secure him/herself to the trunk of the tree before manipulating the nest content. The security apparatus, made by a short loop of climbing rope and a snap-link (both EU certified and provided by the group leader) must be fixed, whenever possible, above the position of the climber, to provide maximum protection. In general, TREE CLIMBING IS FORBIDDEN TO STUDENTS AND VOLUNTEERS unless a specific permission is granted by the group leaders, and it subject to precise safety procedures (appendix2).

2) Car accidents. During fieldwork with department or private car, and while travelling anywhere with a car provided by the group leaders, safety belts must always be worn, and the speed limits (as well as all driving rules) must be respected.





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SUMMARY OF GENERAL SAFETY PROTOCOL

- 1) Sanitation of aviaries (water tanks and removal of droppings) and of crow food containers and feeders must always be done wearing disposable latex gloves. Removal of faeces, especially in summer, must be done wearing a mask.
- 2) Hands must be washed with *betadine* after working in the aviaries, after contact with a bird, bird feeder or water container.
- 3) Nest monitoring in the field must be done using a telescopic pole whenever possible. When using a ladder for reaching the nests, two people must be present and the one climbing the ladder must wear climbing harness and secure him/herself to the trunk before touching the nest.
- 4) When driving, safety belts must be worn and speed limits must be respected.
- 5) Mobile phones should always be carried during fieldwork
- 6) Vaccination against tetanus is strongly recommended
- 7) Students and volunteers that are not covered by the Spanish national health system must stipulate a private medical insurance.

IF SOMETHING HAPPENS...

Symptoms of the zoonosis described above must not be overlooked. Immediately inform the group leaders and go the doctor

Phone number for emergencies:

Project leaders: 610 072731 or 677 686687 or 622 728768

General emergencies:112

Police: 091 or 987 218 900

Ambulance: 061

Fire-fighters: 080 or 987 216 080

I hereby declare that I have read and understood the text above and the appendixes. I accept the fact that working in the field and/or in the aviaries involves some risks and I understand that the group leaders disclaim all responsibilities for any eventuality related to field/aviary work. I commit myself to follow the safety protocol described above to minimize all risks.

Faithfully,

Name

Date

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