



bulletin

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***Protecting bees,
preserving our future***

Oie



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Protecting bees, preserving our future



Bee-keeping is an integral part of farming in every region of the world, as either a core or side-line business. Often it is small scale and, in many countries, bees are farmed traditionally. The size of bee-keeping

operations depends on socio-economic factors: in some countries, 20 bee colonies are enough to support an entire family, while in others a single operation might comprise as many as 2,000 hives.

Honey and royal jelly are just two of the valuable foods derived from honey bees. As bees are the main pollinators of wild and cultivated plants, they render a vital service to ecosystems by contributing to their sustainability and maintaining biodiversity. Humans therefore have bees to thank for our bountiful harvests of fruit and vegetables, which bolster world food security.

The loss of these key pollinators, either bred or wild, would be a biological, agricultural, environmental and economic disaster. Maintaining healthy populations of these pollinating insects (of which more than 17,000 known species exist) is a critical health challenge deserving the full attention of the global community.

It is very difficult to diagnose and control diseases of honey bees as they live only in highly socialised colonies. More so than for any other species in the animal kingdom, the sound clinical observation and diagnosis of bee diseases requires a great deal of expertise.

Even though bees play such a vital role, bee-keeping is given less attention than other livestock sectors, despite the major problems it currently faces.

The loss of these key pollinators, either bred or wild, would be a biological, agricultural, environmental and economic disaster

Changes in agricultural practices are having an impact on populations of bees and wild insect pollinators. In almost all cases, bee diseases merely serve to exacerbate existing factors contributing to colony collapse, such as the irresponsible use of pesticides. Growth in the acreage requiring pollination leads to the more intensive use of migratory bee-keeping, rendering disease control even more difficult and encouraging disease transmission among colonies. The increased use of monoculture impoverishes cultivated plant species, reducing the nutrients available to colonies. Environmental pollution from all sources is also poisonous to bees and weakens colonies.

All this is compounded by the indifference of pharmaceutical companies, resulting in limited treatment options, and by a widespread lack of training among beekeepers, whose enthusiasm and empiricism do not always make up for insufficient knowledge. Not only does this severely inhibit the ability to detect early signs of disease and implement

appropriate biosecurity measures within apiaries, it also encourages the misuse of therapeutics.

To counter this alarming situation and in line with its mandate to improve animal health and welfare worldwide — and so help to fight poverty and hunger — the OIE recently reaffirmed its commitment to the sector by making bee mortality and diseases one of the priorities of its Strategic

Plan 2011–2015. However, bee health is no new concern for the OIE: the Delegates of its Member Countries adopted their first resolution on bees back in 1947.

Apart from addressing the high-profile collapse of honey bee colonies in North America, Europe and Japan in recent years, the OIE has been doing substantive work to provide Veterinary Services around the world with consistent, science-based recommendations on bee diseases and precautions for avoiding transboundary spread.

Indeed, bee diseases have become globalised mainly because of the failure by public administrations to control cross-border trade in breeding stock, genetic material and agricultural products. Yet most bee mortality is due to common diseases, including the six main infestations listed by the OIE, caused by *Acarapis woodi*, *Paenibacillus larvae*, *Melissococcus plutonius*, *Aethina tumida*, *Tropilaelaps* spp. and *Varroa* spp. The *Varroa* mite, a small arthropod causing varroosis, has already invaded virtually the entire planet and, alone or in combination with other viral or chemical factors, inflicts serious damage on bees worldwide.

In response, the OIE develops international animal health standards on these bee diseases, which are considered and adopted democratically by the 178 Member Countries. This culminates in official certification that provides reliable guarantees for trade in breeding stock, genetic material and hive products.

By holding annual training seminars and making its network of expertise available to Member Countries on request, the OIE works to build national Veterinary Services' capacity to improve apiary surveillance and observations in the field.

OIE Member Countries have a statutory obligation to report animal disease events. Transparent animal health information is an important prerequisite for disease management because of the high risk of disease spread posed

by migratory bee-keeping and by regional and international trade in live bees, genetic material, bee-keeping equipment and hive products. Online and mail-order sales of breeding stock, eggs and other items have been instrumental in the globalisation of bee diseases.

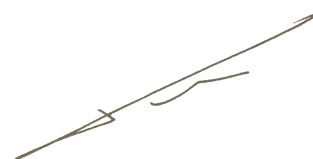
Online and mail-order sales of breeding stock, eggs and other items have been instrumental in the globalisation of bee diseases

The OIE also contributes to the global dissemination of technical and scientific information by making online publications available free of charge.

Preserving the health of bees, both bred and wild, is an integral part of good environmental management, food security and enhanced global agriculture. Neglecting bee health and allowing our planet's bee populations to collapse would have a far-reaching impact on the environment, agriculture and the global economy.

Preserving the health of bees, both bred and wild, is an integral part of good environmental management, food security and enhanced global agriculture

The international community should pay the utmost attention to harmonising bee health management because, by protecting bees, we are also safeguarding our future.



Bernard Vallat
Director General





Risks associated with the use of antimicrobials in animals worldwide

The OIE has evaluated the quality of national animal health systems, including Veterinary Services, in more than 120 countries.

More than 100 of the countries evaluated — mainly developing and emerging countries — do not yet have relevant legislation concerning appropriate conditions for the importation, manufacture, distribution and use of veterinary products, including antimicrobials. In some cases, legislation is totally non-existent. Where it does exist, it is very often not properly applied because of a lack of public funds for the implementation of controls.

In such countries, antimicrobials are usually freely available to anyone, directly or indirectly, without restriction. Worse still, they circulate as normal goods and are often adulterated (i.e. the dosage is less than that mentioned on the packaging, they have different molecules or are only a placebo). Thousands of tonnes of adulterated antimicrobials destined for use in animals are circulating worldwide (and the same is true of antimicrobials for human use).

Unfortunately, the use of antimicrobials in animals by untrained personnel is not confined to developing

and emerging countries. In a significant number of Member Countries of the Organisation for Economic Co-operation and Development (OECD), it is easy to acquire antimicrobials, particularly via the internet, and many farmers do so. Some of these countries still allow the use of certain antimicrobials on fruit trees to control certain bacterial diseases, as well as the incorporation of antimicrobials into animal feed as growth promoters or for other non-therapeutic purposes. Political action, for example by the G8 countries or the World Trade Organization (WTO), can only hope to persuade countries in this category to change these practices, estimated as risky by many credible scientists.

In the area of preventing antimicrobial resistance in animals (and the potential benefits of this for public health), although some countries and regions are already very cautious, the adoption of effective provisions by the rest of the world is likely to be long, difficult and controversial, not to say illusory.

Unfortunately, globalisation of the food trade, coupled with

traditional and medical tourism, enable (and will continue to enable) existing or future resistant bacteria to colonise the entire planet with ease, regardless of any preventive measures implemented locally.

How can we face this important challenge?

- The OIE trains National Focal Points, appointed by its Member Countries, and forms networks to enable them to develop and modernise legislation on the production, importation, distribution and use of veterinary products, as well as to carry out such tasks as monitoring the consumption of antimicrobials, because very little is yet known about actual volumes used in the 178 Member Countries involved in the OIE veterinary legislation support programme.
- OIE Member Countries adopt international standards on the prudent use of antimicrobial agents and on the harmonisation of the risk assessments that they undertake to implement.
- International cooperation in the form of development aid is crucial to helping developing countries, and even emerging countries, to apply these standards, especially since, in



the short term, animal production is expected to grow by more than 50%, due to the increasing use of intensive production systems in these countries.

– The OIE also recommends policies to introduce minimum geographical coverage by veterinarians to ensure animal health surveillance, using this network to guarantee the early detection of potential epizootics (including zoonoses such as animal influenza) and a rapid response to contain outbreaks at their source. Such a network can also improve the general health of animals by

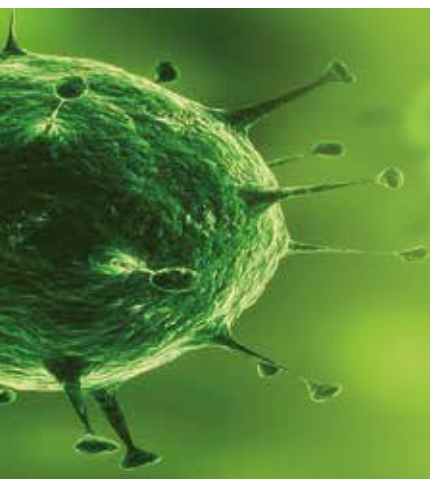
that needs to be addressed. It is why our organisation provides:

a) standards and programmes to improve the quality of veterinary education worldwide, including in the fields of microbiology, pharmacology and ethics

b) a standard on the design and functioning of national and regional veterinary statutory bodies empowered by the law and by state delegation of the necessary powers to oversee qualifications, ethical standards and professional excellence, as well as to expel anyone whose conduct is improper.

which are much easier to control and prevent. Several countries that have implemented decoupling have seen an increase in the general consumption of antimicrobials (according to those in a position to assess such consumption). It is worth noting that the human consumption of antimicrobials continues to grow, despite the fact that the separation of drug prescription and delivery is widespread in human medicine.

It appears that measures to limit the emergence of resistance in animals, including the worldwide management



The worldwide management and limitation of what are deemed to be the riskiest practices (including their use in plant production), should be made a global priority, including in developed countries

allowing the judicious and proper limited use of antimicrobials.

The network's existence and sustainability are partly dependent on revenues from the services provided by veterinarians, many to mainly poor customers in the isolated or deprived areas where they work, which are home to the numerous animals to be monitored. These revenues come mainly from the delivery of products, including antimicrobials, which veterinarians administer directly to the animals. This can raise a potential conflict of interest

While some countries have uncoupled the prescription of certain veterinary drugs, including antimicrobials, from their delivery, this may pose logistical problems of responsiveness to diseases, particularly at the farm level, and may facilitate illegal practices (direct and uncontrolled self-supply and the intervention of unscrupulous and ignorant individuals, mainly via the internet). The risks associated with these practices may have consequences that are much more serious than any irregularities in drug prescription or delivery by veterinarians,

and limitation of what are deemed to be the riskiest practices (including their use in plant production), should be made a global priority, including in developed countries.

Bernard Vallat
Director General of the OIE
20 March 2014





Bee diseases are a worldwide problem

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Keywords: honey bee – *Aethina tumida* – American foulbrood – *Apis mellifera* – European foulbrood – *Melissococcus plutonius* – *Nosema* – nosemosis – *Paenibacillus larvae* – small hive beetle – *Tropilaelaps* – *Varroa* – varroosis.

During recent years, bees have increasingly become a focus of attention. They have always been recognised not only as honey producers but also as essential pollinators of plant crops and wild plants. However, bees are becoming more and more affected by disease. Changed environmental conditions, the increasing use of pesticides and, above all, more profit-oriented hive management systems have all contributed to this situation. In addition, the worldwide trade of bees and bee products has confronted bees with the constant challenge of new diseases and parasites.

Protection against diseases in the bee colony

Honey bees are socially organised insects. Their colony consists of 10,000 to 50,000 infertile worker bees, a number of males (drones) and one egg-laying female, the queen. However, a bee colony is far more than the sum of its individual bees. Like cells in higher organisms, bees are able to cooperate via neuronal stimuli and hormones.

The individual bee has an immune system. However, their social defence system, is of major importance. Old and ill bees die on forage flights or are prevented from entering the hive again on their return. Furthermore, bee hygiene consists of removing ill brood from the nest. This hygiene behaviour is genetically fixed and more or less pronounced within the various breeding lines and bee species.

The pathogenicity of bee pathogens and parasites is illustrated by a shortened lifespan, and modified morphology, physiology or behaviour of the individual bee. In terms of the colony, the consequences are a reduction of the colony's strength until it reaches a stage of disorder, implying the risk of a colony collapse.

Diseases are spread within the bee colony and between bee colonies. A horizontal transfer of diseases means the transfer of pathogens or parasites within the colony from bee to bee, and from colony to colony. A vertical transfer means that the pathogen is transferred from the brood to the adult bee or from the queen, the drones or the worker bees to the brood. Between apiaries, diseases are spread by swarms or by the beekeeper's interventions.

Bee diseases have different causes

Like other animals, honey bees can be infected or infested by a variety of pathogens or parasites. In addition to fungi and bacteria, viruses have recently become more important, because they can be transferred by such parasites. Most of the parasites found in bee colonies are mites and other insects.

In the following paragraphs, I would like specifically to address those bee diseases described in the OIE *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*, which are important for bee-keeping.



Foulbrood has spread worldwide

American foulbrood (AFB) and European foulbrood (EFB) have been spread nearly all over the world. However, EFB does not represent a serious problem for bee colonies everywhere. Colonies are often able to heal themselves. In contrast, AFB is controlled by destroying the infected colonies or by forming artificial swarms. In many countries antibiotics are used for control. However, this only masks the infectious disease with the effect that, after the end of the treatment, a relapse occurs. Moreover, there is the risk of antibiotic residues in the honey.



Fig. 1
American foulbrood is the most important brood disease of honey bees

Nosemosis pathogens

Nosemosis is a diarrheal disease of the bee caused by a microsporidium; specifically, a fungus. The pathogen destroys the bee's mid-gut epithelium when it multiplies in the bee's cells. As long as the infested bees are able to defecate outside the hive or die there, the bee colony is in a position to heal itself. With increasing infestation, the bees defecate more and more, within the nest as well as outside. When other bees pick up the faeces to remove them, mass infestation takes place. Finally, the bee colony dies.

Originally, the only parasite of *Apis mellifera* was *Nosema apis*, and *Apis cerana* was exclusively infested by *Nosema ceranae*. In 1973, *N. ceranae* was found for the first time in *A. mellifera* in the People's Republic of China. Since 2003, this new parasite has rapidly spread all over the world. Today, it has replaced the original parasite, *N. apis*, nearly everywhere. The transfer of this parasite is nearly impossible to avoid. This is why restrictions on moving and transporting bees are not efficient methods of control.

Varroa mites transfer viruses

The situation of varroosis is very similar. Originally, the mite *Varroa destructor* exclusively infested *A. cerana*. The introduction of *A. mellifera* into Asia initiated its shift to the new host. In the meantime, this mite has spread throughout virtually the whole world. Only Australia and parts of Oceania still seem to be free from the *Varroa* mite.

The *Varroa* mite multiplies only in the brood of honey bees, damaging the developing bees as it sucks their haemolymph.



Fig. 2
The *Varroa* mite is distributed throughout most of the world

The bee colony becomes weaker and weaker, growing more susceptible to other diseases. Without treatment, most of the colonies die within a short time.

Because of the structure of their epidermis, honey bees are well protected against many kinds of viruses. The *Varroa* mite overcomes this natural defence mechanism when sucking, but also infects the brood with viruses via the adult bee, especially with 'deformed wing virus' but also with 'acute bee paralysis virus', both of which accelerate the collapse of the colony.

***Tropilaelaps* mites not yet everywhere**

Different types of the *Tropilaelaps* mite infest the giant honey bees *A. dorsata* and *A. laboriosa*. Some switched to *A. mellifera* when it was newly introduced into their original habitat in Asia. Only a few types damage European bee species; among them, *T. clarae* and *T. mercedesae*.

Though *Tropilaelaps* mites and *Varroa* mites differ considerably in their outward appearances, their parasitic life cycles are quite similar. Both mites preferentially infest the bee brood and multiply within it. When the brood is infested by both kinds of mite, the *Tropilaelaps* mite dominates, because its offspring develop faster. However, *Tropilaelaps* mites cannot live on adult bees, but can only use them as carriers for spreading.

Generally, the *Tropilaelaps* mite has similar attributes to the *Varroa* mite to ensure rapid spread. We still do not know why *Tropilaelaps* mites have not yet left or have only partly left their original area of distribution on their new host, *A. mellifera*. The difficult method of transfer via adult bees, as well as the mites' susceptibility to brood-free phases in a bee colony, could be the reason.

The small hive beetle only damages weak colonies

Another pest is not so easy to classify in the general scheme of diseases. The 'small hive beetle' is often classed as a pest but it can undoubtedly also be regarded as a predator.

Originally, this beetle was exclusively found in Africa, south of the Sahara, and African bees have developed defence mechanisms against it. Since the year 2000, global trade has carried the small hive beetle to new continents. There, it has spread naturally, both via bees, as bee colonies migrate or are transported during bee-keeping, and independently, through its own flight.

It is difficult to diagnose small hive beetle in the bee colony. As the hive is opened, the beetle immediately escapes into the dark. Special traps have been developed, in which the beetle hides, making it easier to recognise even the beginnings of an infestation. In most cases, however, the beetle is only detected when its larvae appear in large numbers and cause fermentation in the food, making the honey leak out of the cells. However, this only happens in very weak colonies or in honeycomb storage. As a result, this beetle causes only limited damage in colonies but is a real problem in honey storage.

The small hive beetle finds much the same conditions in bee colonies all over the world. Only its pupation period in the soil outside the nest depends on climate. That is why, in North America, this beetle only represents a serious problem in states with a tropical climate, such as Florida and California. The same is more or less true for the coastal regions of Australia. Only in these areas with tropical climates is it necessary to actively try to control the beetle.



Fig. 3
Small hive beetle



Fig. 4
Brood combs being inspected for bee diseases



© CVUA Freiburg

Fig. 5
Inspection for brood diseases

Local bee species and subspecies and hive management systems must be strengthened

An important contribution towards keeping honey bees in good health is to protect native species. In Asia, the native *A. cerana* is less susceptible to most parasites and diseases than the European bee, *A. mellifera*. As their natural host, it has no problems with *Varroa destructor* and *Tropilaelaps* mites.

It is thus very important that countries such as Laos are encouraged to support their native bees and peasant bee-keeping. The same is true for the native bee, *A. mellifera*, in Central Africa and local bee-keeping practices. Although

American foulbrood and varroosis were imported into Central Africa a long time ago, they have not been able to do lasting damage to the local bee colonies. Problems only appear with the introduction of the bee management methods practised in Europe and America, or with the importation of European bee species. We should have learned our lessons from the mistakes made in the past.

The spreading of bee diseases must be prevented

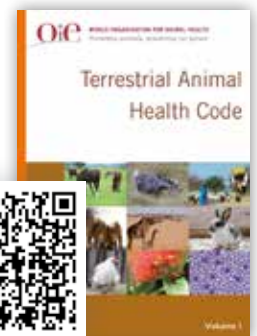
Bee health problems have increased principally because of the constant importation of new diseases. The introduction of diseases via bees can only be controlled through strict import controls based on the OIE standards. Since quarantine, even for a short time, is impracticable, special attention must be paid to disease control in the country of origin (see, in particular, Chapter 1.1.4. of the *Terrestrial Animal Health Code* on the official health control of bee diseases). If the control system in the country of origin is not reliable, the import should be rejected.

Despite this, there is still a risk of importing diseases over land, through the drifting of bees and swarms, and by sea, as a result of wild swarms,

e.g. those often found in shipping containers. The biggest problem worldwide, however, is caused by the fact that, in veterinary medicine, the honey bee is not universally regarded as livestock and so less attention is paid to bee disease controls at the frontier. Both illegal and uncontrolled imports can be the sources of disease. This is not only a local or regional problem, it's a worldwide one.

Conclusion

To sum up, bee disease control must include not only management methods but environmental conditions as well. If we are to maintain healthy bees in the future, we must act to stop the global spread of bee diseases now.





The veterinary profession: an asset to the bee-keeping sector

N. Vidal-Naquet ⁽¹⁾ & C. Roy ⁽²⁾

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(2) Doctor of Veterinary Medicine, graduate in bee-keeping and bee diseases (DIE), Chair of France's national society of veterinary technical groups (SNGTV) Bee-Keeping Committee (since 2009)

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Keywords: apiculture – *Apis mellifera* – bee keeping – farm health audit – honey bee – veterinary education – veterinary profession.

« ... Sed si quem proles subito defecerit omnis nec genus unde nouae stirpis reuocetur habebit, tempus et Arcadii memoranda inuenta magistri pandere quoque modo caesis iam saepe iuuencis insincerus apes tucrit cruor... »

'... But if someone's whole brood has suddenly failed, and he has no stock from which to recreate a new line, then it's time to reveal the famous invention of Aristaeus, the Arcadian master, and the method by which in the past the adulterated blood of dead bullocks has generated bees...'

Virgil, *Georgics*, Book IV–285

(Translation: A.S. Kline)

The honey bee, *Apis mellifera*, has always held a special place in people's lives: a source of honey and other products, its role in pollination has also made this creature crucial to the agricultural economy.

The veterinary profession has taken very little interest in this domestic species because bee health has long been trouble-free. The first jolt, in the form of the global *Varroa destructor* pandemic in the 1980s, coupled with the even more severe health crisis that began at the turn of the century, causing increased mortality worldwide, call for the involvement of a range of bee-keeping stakeholders together with the animal health professional.

As the veterinary profession is specially trained in the areas of clinical examination, diagnosis, pharmacology and safety, and is responsible for both animal and public health, as well

as within the framework of the 'One Health' key concept¹, it can and must be called upon to intervene in various areas of bee-keeping, in particular:

- bee health (which includes animal protection and welfare)
- food safety (as honey is considered a food of animal origin)
- scientific research
- laboratory diagnosis
- education of veterinarians and bee health workers
- in a broader context, the preservation of the environment and biodiversity.

France's National Veterinary School of Nantes (ONIRIS), jointly with the National Veterinary School of Alfort (EnvA), has developed a postgraduate degree in bee-keeping/bee diseases for veterinarians, including practitioners, to address the current crisis. It aims to provide veterinarians

¹ One Health: www.onehealthinitiative.com

with a specialisation in bee diseases through theoretical and practical training (biological and husbandry basics of bee-keeping; the organisation of the sector and its economy; bee pathogens and diseases; farm health audits; health and drug regulations)². In addition, in 2009, France's national society of veterinary technical groups (SNGTV) established a Bee-Keeping Committee, bringing together veterinary practitioners working in the field who are trained in bee diseases. The committee acts as a focal point for bee health and technical authorities³.

At the European level, in 2012, the Federation of Veterinarians of Europe (FVE) established a Working Group on Honey-Bee Health, which has recommended the expansion of bee-keeping veterinary education for students and veterinarians to include the veterinary profession's role in bee-keeping and veterinary drugs in bee medicine. These recommendations are available on the FVE website⁴.

Examination, diagnosis, treatment, prevention

The veterinarian's role in bee-keeping, as with other animal species, focuses on prophylaxis and on managing colony health disorders. The concept of **bee health disorders** includes diseases caused by both biological hazards (viruses, bacteria, parasites) and chemical hazards (poisoning), which should not be separated.

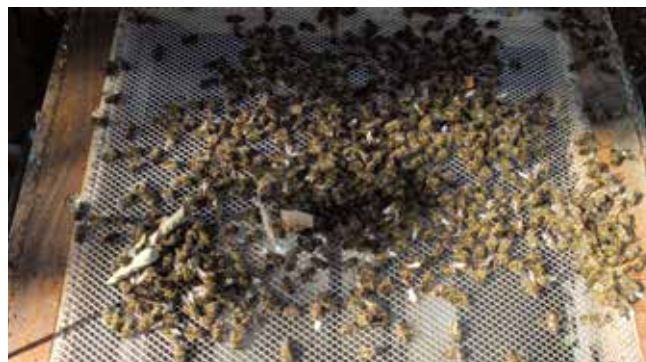
Veterinary medical intervention, based on scientific training, is a four-stage process: clinical (Fig. 1) or post-mortem examination and, if necessary, conducting additional tests, making a diagnosis and prescribing treatment (including the establishment of a control programme).

A veterinarian's intervention in the case of acute health disorders will ensure that a **coherent scientific clinical approach** is used to deal with medical problems, resulting in a diagnosis. Diagnosis is the outcome of a process learned and assimilated by practitioners (working with any species) on the basis of medical history, clinical signs, epidemiological evidence and possible information from additional tests (Fig. 2). An apt example is the exceedingly effective intervention of a veterinarian [1] in the face of abnormal mortality among bees in the French prefecture of Ariège in 2009, when she diagnosed permethrin poisoning and alerted the health authorities [2]. A coherent scientific clinical approach enables animal health measures to be



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Fig. 1
Clinical examination of a bee colony



© N. Vidal-Naquet

Fig. 2
Abnormally high mortality in a colony requires the intervention of a veterinarian specialising in bee diseases

taken (e.g. bee-keeping techniques) for treatment or prevention, such as sanitation and disinfection, as well as the transfer, or even destruction, of bee colonies. It may also enable veterinary drugs to be prescribed when they are authorised.

The use of veterinary drugs in apiaries is a case apart, due to the nature of *Apis mellifera*, its biology and products. Before using therapeutics in hives, consideration must be given not only to the disease being treated or prevented but also to local legislation on the protection of animals, humans and the environment. The risk of veterinary drug residues in hive products, especially honey, is a key factor in prescription.

2 Inter-Veterinary School Diploma or DIE: www.oniris-nantes.fr/professionnels/formations-continues/formations-diplomantes/

3 France's national society of veterinary technical groups: www.sngtv.org

4 Federation of Veterinarians of Europe: www.fve.org

In France, medical prescriptions are required only for *Varroa* parasite control. The prescription of antimicrobials and antifungals is highly questionable on scientific and public health grounds [3, 4]. However, in countries authorising the use of antimicrobials and antifungals (e.g. Canada and the United States), prescription by a veterinarian should be made mandatory and should take into account the risk/benefits for colony health as well as public health (antimicrobial resistance, residues, etc.). Leaving beekeepers free to decide whether to use them is extremely risky for both colonies and public health [5].

Overview of bee-keeping: farm health audits and assessments

Veterinarians play a crucial role in chronic disorders. Their training and expertise enable them to conduct farm health audits to pinpoint any aspect of beekeepers' health practices and apiary management that is likely to impair colony health.

Bee-colony health relies on a balance of several factors: bee characteristics (genetics, natural resistance); microbial build-up on the farm; food resources; chemical environment, which exposes bee health to constant stress; weather conditions; climate; the apiary; and overall management (bee-keeping practices); in particular, the management of diseased colonies. Health disorders in bees, as in other farmed species, are rarely the result of a single factor, and environmental changes call for good bee health management practices.

Farm health audits assess the health of apiaries, as well as making a risk assessment and analysis of bee-keeping practices (Fig. 3). These assessments help in considering and proposing appropriate measures. The proposed measures are then reassessed during a return visit.

As veterinarians specialising in bee diseases are trained to carry out farm health audits, they may also act as experts for the health authorities as well as in legal and insurance matters [6].

Epidemiological surveillance and animal health measures

In France, a number of veterinarians specialising in bee diseases are taking part in a pan-European epidemiological study on honey-bee colony losses (EPILOBEE³), to which they are making a major contribution.

As part of their remit as private veterinarians with an animal health accreditation mandate (*vétérinaires sanitaires*), veterinarians specialising in bee diseases play a key role in alerting and informing the health authorities of suspected or actual cases of poisoning or high-grade health hazards, as well as in helping to make health decisions.



Fig. 3
A farm health audit identifies risky bee-keeping practices (such as risks from the siting of hives)

Veterinarians and public health

Like other farm animals, bees are bred for their products. What makes the bee special is that it is the only species whose feeding cannot be controlled. Being a foraging species, it suffers the effects of environmental degradation and its products may become contaminated with xenobiotic residues (plant protection products, veterinary drugs, heavy metals, etc.). As professionals responsible for veterinary public health (foods of animal origin), all veterinarians, whatever their position (practitioner, researcher, laboratory diagnostician or official veterinarian), have a major role to play in protecting consumers and, ultimately, bees and the environment.

5 A description of EPILOBEE network is given on p. 69

Official veterinarians

Official veterinarians perform a variety of tasks, including: health and epidemiological surveillance of bee populations and the trade in animals; health decision-making for government-regulated diseases and the implementation of relevant measures; the implementation of regulations for controlling occurring or potentially occurring regulated diseases (such as *Aethina tumida* and *Tropilaelaps* spp. in Europe); health monitoring of honey production, distribution and importation within the Veterinary Service's remit for hygiene in the animal-derived foodstuffs sector.

Conclusion

Veterinarians are a major asset to the bee-keeping sector and, as in other value chains, the 'One Health' concept provides a basis for cooperation among all current and future stakeholders in the bee-keeping sector. The ONIRIS curriculum for veterinarians, agronomists and apiary technicians is therefore designed to optimise relations among professionals:

a) *between beekeepers and agronomists*, for agronomy-based good bee-keeping resource management (advice on resources, risky pollen and nectar flows, production of single-flower honey, etc.);

b) *among beekeepers, apiary technicians and veterinarians*, for good health management. When an anomaly occurs in their hives, beekeepers are the first to sound the alarm, as are farmers in other sectors; veterinarians identify the problem (diagnosis followed by advice, treatment and/or prophylaxis) and rely on technicians to help introduce measures and support beekeepers;

c) *between veterinary practitioners and health authorities*: veterinarians can support the administration by implementing the required animal health measures for regulated diseases, inspecting foodstuffs, etc.

As veterinary practitioners have become involved only recently, some beekeepers may be reluctant to contact a veterinarian. It is to be hoped that the veterinary profession and veterinary schools around the world will organise to train students and veterinarians to make their professional expertise available to beekeepers (Fig. 4).

As veterinarians specialising in bee diseases are trained in diagnosis, treatment, animal health measures and veterinary public health, they are a major asset in our current times of crisis. They would seem to be ideal partners.



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Fig. 4
Students from France's National Veterinary School of Alfort learning about bee diseases

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Bees and ecotoxicology

M.-P. Chauzat

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Les désignations et dénominations utilisées et la présentation des données figurant dans cet article ne reflètent aucune prise de position de l'OIE quant au statut légal de quelque pays, territoire, ville ou zone que ce soit, à leurs autorités, aux délimitations de leur territoire ou au tracé de leurs frontières.

Les auteurs sont seuls responsables des opinions exprimées dans cet article. La mention de sociétés spécifiques ou de produits enregistrés par un fabricant, qu'ils soient ou non protégés par une marque, ne signifie pas que ceux-ci sont recommandés ou soutenus par l'OIE par rapport à d'autres similaires qui ne seraient pas mentionnés.

Keywords: apiculture – *Apis mellifera* – bee-keeping – ecotoxicology – honey bee – insecticide – pesticide.

The OIE Reference Laboratory at the French Agency for Food, Environmental and Occupational Health and Safety (ANSES) in Sophia Antipolis has spent many years researching and, at the same time, analysing different components of the health of bee colonies to identify links between them.

The results have demonstrated that bee colonies face multiple exposure to low doses of pesticides in pollen [1], wax and honey.

The disease incidence was recorded, together with bee-keeping practices [2]. Diseases and bee-keeping practices were shown to be statistically linked to the excess winter mortality of colonies.

Evidence of multiple exposure to low pesticide doses has now led research to switch its focus to widespread diffuse mortality among bees, as opposed to acute mortality of entire colonies.

Low pesticide doses can also affect the life-history traits of bees (longevity, immunity), and this, in turn, has a deleterious effect on colonies in the medium or long term. However, field study protocols for an in depth study of such disorders are still under development; in particular, the tools needed to measure colony health. In this respect, a major breakthrough study published in 2012 has shown that sub-lethal exposure to an insecticide indirectly increases colony mortality, due to a poor return rate of foraging bees to the hive [3].

The unintended effects of pesticides on bees have been studied widely in honey bees (*Apis mellifera*). However, research teams have recently turned their attention to pesticide effects on wild bees. The results have shown that species with a different biology and ecology from those of honey bees are just as vulnerable to pesticides. These results are crucial to adjusting

pesticide risk assessment models, as stated in a recent report by the European Food Safety Authority (EFSA) [4]. As with *A. mellifera*, account must be taken of a complex combination of exposure factors, which involve sub-lethal doses and affect the overall colony as well as individual bees, leading to acute and chronic mortality.

Where possible, for honey bees and bumblebees for example, there should be a laboratory phase to study the exposure of bees (adults or larvae) to combinations of pathogenic or toxic stress factors. Indeed, experiments have shown that bees exposed simultaneously to the *Nosema ceranae* parasite and an insecticide exhibit diminished social immunity, changes in biochemical criteria and increased mortality [5, 6].

Epidemiology is the study of diseases and health factors in a population. What makes epidemiology unique is that it applies to populations rather than individuals. Initially, it was applied to the study of bee pathogens. However, according to the definition of epidemiology, a number of factors must be considered simultaneously in an attempt to understand disease as a whole. Health factors cover all individual and environmental factors likely to influence health positively or negatively. This seems to call for the development of programmes to monitor mortality and impairment among bees generally.

Recent studies published in a number of countries have shown honey-bee colonies to be co-infected with several infectious agents. These protocols study several elements simultaneously: i.e. the observation of clinical signs in colonies; the detection and quantification of pathogens; and the detection and quantification of pesticide residues in different hive



matrices (Fig. 1). Authors face recurring difficulties in conclusively incriminating a single factor or decisive combination of factors, as evidenced by the results of surveillance programmes conducted in Germany [7], the United States and Greece. Depending on the protocols used, other studies blame one specific pathogen,

such as *Varroa destructor* in Canada [8] or *Nosema ceranae* in Spain [9]. Extensive epidemiological studies are currently under way in Europe (EPILOBEE¹) and the United States². These protocols will help to identify risk factors influencing honey-bee-colony mortality.



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Fig. 1
Sampling pollen pellets from a honey-bee colony

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1 An introduction to this network is given on page 69
2 See page 71



90 years... of transparency

Ensuring transparency in the global animal disease situation

One of the OIE's historic missions is to ensure transparency and improve our knowledge of the global animal disease situation, including zoonoses.

On becoming an OIE Member, each country undertakes to report upon the animal health situation within its territory in a timely and transparent manner.

The OIE then disseminates the information to all the other Member Countries to enable them to protect themselves. These surveillance and monitoring procedures apply to both natural and intentional disease events.

Since its inception, the OIE has come a long way in managing world animal health information. In 2006, it established the World Animal Health Information System, **WAHIS**, accompanying **WAHID** interface, and continues to manage and constantly develop them. These are the only tools that exist for ensuring transparency in the global animal disease situation.



Monitoring the global animal disease situation

Collecting world animal health information

The way in which the OIE collects animal health information from its Member Countries today has improved significantly since 1924, the year it was established, when it had only 28 Members.

In 2006, the OIE introduced WAHIS system, which processes animal disease data in real time and then informs the international community. WAHIS is open to all 178 OIE Member Countries, as well as non-members.

WAHIS has two components:

- an **early warning system** to inform the international community of exceptional epidemiological events or emerging

diseases through 'alert messages', generated upon receipt of immediate notifications;

- a continuous **surveillance system** for monitoring the presence or absence of OIE-listed diseases. The information is compiled in six-monthly and annual reports from Member Countries. These reports also contain information on such matters as Veterinary Services, vaccine production and animal populations.

All these data are compiled in an OIE publication entitled *World Animal Health*. A web interface will be available on the OIE website.



OIE-monitored diseases

- A list of 116 diseases of domestic and wild terrestrial and aquatic animals, including diseases transmissible to humans, must be notified to the OIE (*Terrestrial Animal Health Code and Aquatic Animal Health Code*).
- Some diseases specific to wildlife are not included in this list. OIE international experts have selected 53 such diseases for surveillance, due to their importance for wildlife and their potential impact on human and animal health. OIE Member Countries report their status in regard to these diseases on a voluntary basis, using the *WAHIS-Wild* interface web application, which was launched in January 2014.



Verifying animal health information

Information published in WAHIS, the official source of information on diseases of domestic and wild animals worldwide, is highly reliable. First, it is validated by the Veterinary Services of the reporting country, after which it is verified by the OIE, prior to publication.

Disseminating world animal health information

Beginning in 1996, the 'Handistatus II' interface was used to publish data on animal diseases and zoonoses on a monthly or annual basis, depending on the disease.

The web application of the new world animal health information WAHIS was made available on line in April 2006 and was completed in 2007 with a new interface, making all data in the WAHIS database since 2005 publicly available immediately after OIE validation.

WAHID is a unique tool and the cornerstone of OIE efforts to improve the transparency, efficiency and speed with which animal health information is disseminated throughout the world.

The WAHID interface provides access to all available information on animal diseases, including zoonoses, presented by country, region, month or year.



An intergovernmental mandate to ensure transparency of the animal health situation

Only two organisations have a global legal framework allowing them to collect and disseminate world animal health information: the OIE, since 1924 (Basic Texts), and the World Health Organization, since 1951 (International Health Regulations)¹.

Any web user may subscribe to the OIE animal disease information mailing list (OIE-Info Distribution List): www.oie.int/en/animal-health-in-the-world/the-world-animal-health-information-system/info-list-rss/

90 years of experience in collecting and sharing information

Key figures:

- 170 alerts are reported annually
- more than 400 notifications are processed annually.

Keywords for OIE Transparency:

- reporting
- responsiveness
- efficiency
- communication

90 years of Standards, Transparency, Expertise and Solidarity

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OIE's special
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Go to p. 81 for a quiz on OIE transparency

OIE publications



Trilingual publication

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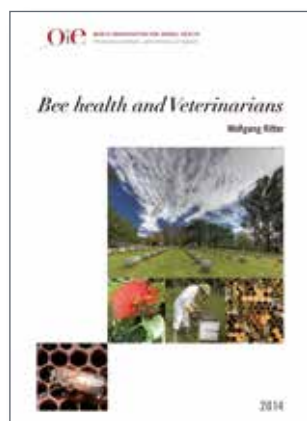
Coordinator and editor: William B. Karesh

In recent years, the concept of 'One Health' has gained wide acceptance in the scientific community as well as the attention of the development community, policy-makers and politicians. International bodies such as the OIE, the United Nations agencies, and the World Bank have adopted a 'One Health' approach in their collaborative efforts to control avian and zoonotic influenza with pandemic potential and other diseases of animal origin on both a local and global scale. More people are acknowledging the links among wildlife, domestic animals, ecosystems and human health, and the resulting need to address threats across many sectors, as well as the importance of these relationships in global issues such as climate change and food security and safety.

In this special issue of the *Scientific and Technical Review*, governmental representatives, organisational heads and experts on these issues from around the world provide insights and experiences that lead readers through the progression of 'One Health' from concept to perspectives to practice.

¹ Legal basis of disease notification: www.oie.int/fileadmin/Home/eng/Animal_Health_in_the_World/docs/pdf/legal_basis/notification-EN.pdf





In English

2014

29.7 x 21 cm

Approx. 300 pages

ISBN 978-92-9044-923-2

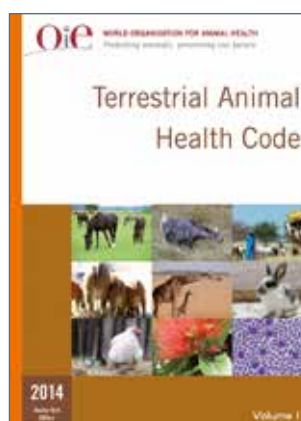
Price: EUR 50

Bee health and veterinarians

Coordinator and editor: Wolfgang Ritter

Maintaining bee health is a central responsibility in beekeeping, for both professional and amateur beekeepers, because only healthy bees are able to pollinate successfully and achieve a good honey harvest. Bee losses have become an increasingly serious problem throughout the world. The reasons for the losses are manifold and range from environmental influences to pathogenic agents. Bee health has also been affected by harmful practices in worldwide trade. New parasites and pathogens have been spreading more quickly than ever before. Only if all the parties involved work together to tackle the problem will bee health be improved in the future. Government veterinarians must be knowledgeable about bees and bee diseases as they are responsible for dealing with notifiable bee diseases/pests and international trade controls. However, private veterinary practitioners must also be informed about the relationship between the physiology of bees and the pathology of honey-bee diseases, as they are responsible for prescribing and delivering the appropriate medicines required by beekeepers.

This publication provides a concise but comprehensive overview of this complex set of problems.



In English

23rd Edition, 2014

29.7 x 21 cm

Approx. 670 pages

(two volumes sold together)

ISBN 978-92-9044-933-1

Price: EUR 60

Terrestrial Animal Health Code

The *Terrestrial Animal Health Code* ('*Terrestrial Code*') is a reference document for use by Veterinary Authorities, import/export services, epidemiologists and all those involved in international trade in bees, mammals and birds or their products.

The development of these standards and recommendations is the result of the continuous work since 1960 of one of the OIE's Specialist Commissions, the Terrestrial Animal Health Standards Commission. This Commission draws upon the expertise of internationally renowned specialists to prepare draft texts for new articles of the Terrestrial Code or revise existing articles in the light of advances in veterinary science. The health measures in the *Terrestrial Code* have been adopted by the World Assembly of OIE Delegates.

The twenty-third edition incorporates modifications to the *Terrestrial Code* agreed at the 81st OIE General Session in May 2013, including revised information on topics related to bee-keeping:

- official health control of bee diseases
- responsible and prudent use of antimicrobial agents in veterinary medicine
- infestation of honey bees with *Acarapis woodi*
- infection of honey bees with *Paenibacillus larvae* (American foulbrood)
- infection of honey bees with *Melissococcus plutonius* (European foulbrood)
- infestation with *Aethina tumida* (small hive beetle)
- infestation of honey bees with *Tropilaelaps* spp.
- infestation of honey bees with *Varroa* spp. (varroosis).

The 23rd edition also incorporates modifications to the *Terrestrial Code* agreed at the 82nd OIE General Session, which was held in May 2014.

news from headquarters

Staff movements

Arrivals

International Trade Department

Dr Leopoldo Stuardo Escobar

Chargé de Mission



Dr Leopoldo Stuardo Escobar has returned to the OIE from Chile, where he was working at the Agriculture and Livestock Service (SAG), to take up the position of Chargé de Mission with the OIE International Trade Department. In this role Dr Stuardo will be responsible for

coordinating work on the development, maintenance and review of the OIE international animal welfare standards. He will also be supporting both the OIE Animal Welfare Working Group and animal welfare *ad hoc* groups. With his prior experience at the OIE, Dr Stuardo already has preparations well in hand for the Animal Welfare Working Group meeting in June, and for the *ad hoc* groups who will be working on the welfare of working equids and natural disaster risk reduction and management this year.

We are pleased that Dr Stuardo is back with the OIE.

Departure

Animal Health Information Department

Dr M. Karim Ben Jebara

On 31 January 2014, Dr Karim Ben Jebara left his position as Head of the OIE Animal Health Information Department, having made a significant contribution towards one of the main missions behind the creation of the OIE in 1924: ensuring transparency of the worldwide animal health situation, including zoonotic diseases.

It has been 12 years since the former Animal Health Information and International Trade Department was split into two entities, and the new Animal Health Information Department was



established in January 2002. Since the beginning, Dr Ben Jebara has been instrumental in helping to build up a strong Animal Health Information Department, doubling the number of staff available in 2002 to, on average, 11 permanent staff members today, backed up by expert consultants. This period also saw the establishment of a new notification system and many new tools. In particular, WAHIS/WAHID and most recently the WAHIS-Wild Interface were launched, leading to improved networking, capacity building of Member Countries' Delegates and their National Focal Points; an increase in the number of countries taking part in the worldwide notification system, and, since 2002, a strong tracking system to identify and verify rumours of disease outbreaks, thus contributing towards improving transparency of the worldwide animal health situation. Collaboration between the OIE, FAO and WHO within the GLEWS¹ partnership and, more recently, the GLEWS+ initiative were also among the Department's achievements in strengthening collaboration among intergovernmental organisations in the research and verification of events, data-sharing and analysis, without duplicating existing systems.

Dr Ben Jebara had earlier taken up the position of Deputy Head of the OIE Scientific and Technical Department from July to December 2001. Before that, from 1996 to June 2001, he worked in the Animal Health Service of the FAO, on the Regional Animal Disease Surveillance and Control Network (RADISCON), which involved 29 countries from North Africa, the Middle East, the Sahel region and the Horn of Africa.

Dr Ben Jebara graduated as Doctor of Veterinary Medicine (DVM) from the National Veterinary School of Sidi-Thabet, in Tunisia, and has a postgraduate degree from the National Agronomic Institute, at Paris-Grignon, France, and an MVSc from the University of Montreal, Quebec, Canada. He has now been appointed to the Ministry of an OIE Member Country as a senior expert advisor in matters of animal health and welfare and matters of collaboration with the relevant international and regional organisations. He goes with our warmest thanks and very best wishes for the future.

¹ GLEWS: Global Early Warning Animal System for Major Diseases including Zoonoses





Activities of the Communication Unit

The OIE at the Paris International Agricultural Show 2014

For the fourth year running, the OIE was present at the Paris International Agricultural Show, held during the week of 22 February to 2 March 2014.

In partnership with the European Commission's Directorate General for Health and Consumers (DG Sanco), the OIE provided information about animal health and food safety issues to visitors to the fair. To introduce visitors to the issues of veterinary control and traceability in a fun and accessible way, a raft of events were organised around the theme 'from farm to fork'.

The 51st edition of this annual show, featuring over 4,000 animals, hosted more than 700,000 visitors during the week.



Various activities were devised around the theme 'from farm to fork' for the littlest visitors



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In Paris, as in Berlin, balloons given out at the OIE and European Commission's joint stand delighted both young and old. The hit of the year!

Interactive map goes online on the OIE's 90th Anniversary website

For more information:



The OIE's network of animal health partners and expertise is one of the largest in the world. To help internet users, animal health professionals and the general public to locate and find detailed information about each of the many members in the network, the OIE has created an interactive map on its 90th Anniversary website (www.90.oie.int). This tool provides details of the OIE's 13 regional offices on all five continents, its 178 Member Countries, and its 284 Reference Laboratories and Collaborating Centres. This map is in addition to the animal disease maps already available in the WAHIS system.



Users should select the appropriate category, then scroll down to select the Representation, Member Country or Reference Centre they wish to see on the map



Activities of the Communication Unit

The OIE takes part in the Conference for Better Bee Health



On 7 April 2014, the OIE took part in the Conference for Better Bee Health, organised by DG Sanco and held in Brussels.

The conference was held in the presence of European Commissioner for Health, Mr Tonio Borg. The aim was to present and discuss the subject of bee health and the multifactorial causes of the massive decline in bee populations. The subjects discussed included recent developments for better bee health (including that of wild bees), European Union apiculture funds, and projects for improving bee health, bee-keeping practices, agricultural production and bee-related biodiversity.

For more information:



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The OIE booth

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Presentation of Dr François Diaz of the Scientific and Technical Department

Activities of the Scientific and Technical Department

Summaries of the OIE

Specialist Commission, Working Group and *Ad hoc* Group meetings

January to March 2014

Specialist Commissions

Scientific Commission for Animal Diseases ('Scientific Commission')

OIE Headquarters, Paris, 10–14 February 2014

The Commission met at the OIE Headquarters under the chairmanship of its President, Dr Gideon Brückner, and addressed, among others, the following issues.

- The endorsement of the reports of the following *ad hoc* Groups:
 - Porcine Respiratory and Reproductive Syndrome
 - Schmallenberg Virus
 - Evaluation of the Foot and Mouth Disease Status of Member Countries and Revision of the Chapter
 - International Horse Movement for Equestrian Sport
 - Evaluation of the Bovine Spongiform Encephalopathy Risk Status of Member Countries
 - Glanders
 - Brucellosis
 - Evaluation of the Peste des Petits Ruminants Status of Member Countries
 - Evaluation of the Contagious Bovine Pleuropneumonia Status of Member Countries
 - Global Database on the Use of Antimicrobial Agents in Animals
 - Evaluation of the African Horse Sickness Disease Status of Member Countries.
- The endorsement of the report of the Working Group on Wildlife.
- Comments from Member Countries on the new draft chapters of the *Terrestrial Animal Health Code*:
 - High-health-status horses subpopulation
 - Infection with *Brucella abortus*, *B. melitensis* and *B. suis*.





Activities of the Scientific and Technical Department

4. The revision of the *Terrestrial Code* chapters that had been circulated to Member Countries for comment:
 - Chapter 1.1. Notification of diseases, infection and infestations and epidemiological information
 - Chapter 1.2. Criteria for the inclusion of diseases, infections and infestations on the OIE List
 - Chapter 4.6. Collection and processing of bovine, small ruminants and porcine semen
 - Chapter 6.7. Harmonisation of national antimicrobial resistance surveillance and monitoring programmes
 - Chapter 6.10. Risk assessment for antimicrobial resistance
 - Chapter 8.6. Foot and mouth disease
 - Chapter 8.12. Rift Valley fever
 - Chapter 11.8. Contagious bovine pleuropneumonia
 - Chapter 12.1. Infection with African horse sickness virus
 - Chapter 12.10. Glanders
 - Chapter 14.8. Infection with peste des petits ruminants virus.
5. The endorsement of the draft chapter for the *Terrestrial Code* on porcine respiratory and reproductive syndrome proposed by the *ad hoc* Group.
6. The request from a Member Country for designation of a Collaborating Centre for Animal Health and Epidemiology.
7. Liaison with the Biological Standards Commission over issues related to the updating of prescribed tests for the diagnosis of certain listed diseases according to current scientific knowledge.
8. The involvement of members of the Commission in relevant *ad hoc* Groups and scientific meetings related to OIE activities.
9. Setting priorities for the future work of the Commission, draft agendas and dates for the meetings of planned new *ad hoc* Groups
10. The outcome of the OIE expert mission conducted in 2013 and discussion on possible expert missions during 2014.

In addition, the Scientific Commission and the Terrestrial Animal Health Standards Commission (Code Commission) held a joint meeting, chaired by the Director General, where several important items were discussed, such as the need for a definition of risk-based surveillance in the *Terrestrial Code*; progress on the harmonisation of the chapters on bluetongue, epizootic haemorrhagic disease and African horse sickness; the way forward for the chapters on antimicrobial resistance, and the concept of a high-health-status horse subpopulation. On the request of the Scientific Commission, the Code Commission clarified

that horizontal chapters of the *Terrestrial Code* supersede disease-specific chapters, unless specified in the disease-specific chapters. Some disease-specific chapters, such as those on foot and mouth disease, brucellosis, and classical swine fever, were also debated.

Biological Standards Commission (‘Laboratories Commission’)

OIE Headquarters, Paris, 19–20 February 2014

The Commission met at the OIE Headquarters under the chairmanship of its President, Prof. Vincenzo Caporale, and addressed, among others, the following issues:

1. OIE Reference Centres

The Commission accepted two new requests for designation as OIE Collaborating Centres and five for designation as Reference Laboratories. These requests were submitted to and endorsed by the OIE Council. The two Collaborating Centre proposals need to be endorsed by the appropriate OIE Regional Commission during the meetings to be held in Paris in May 2014, during the week of the General Session. All applications will then be submitted for adoption by the Assembly through a formal Resolution. The Commission, and subsequently the Council, also approved six nominations for replacement experts.

2. *Ad hoc* Groups

The Commission endorsed the report of the meeting of the *ad hoc* Group on High-Throughput Sequencing, Bioinformatics and Computational Genomics (HTS, BCG), held from 25 to 27 November 2013. It also drafted terms of reference for an *ad hoc* Group on Camelidae.

3. *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals* (‘*Terrestrial Manual*’)

The Commission reviewed and approved the proposals of the Enlarged Bureau Group: 20 chapters and the glossary were approved for circulation to Member Countries for second-round comment and eventual proposal for adoption by the Assembly in May 2014. Three chapters and eight guidelines that had been sent for second-round comment will be proposed for adoption without further circulation. One chapter received no Member Country comments and so will be proposed for adoption without further circulation.





Activities of the Scientific and Technical Department

4. International standardisation/harmonisation

The current OIE Collaborating Centre for Cell Cultures, Brescia, Italy had applied to extend its remit and title to 'OIE Collaborating Centre for a Veterinary Biologicals Biobank'. Its aim is to extend an existing national programme to the OIE Reference Centre network. The Centre would initially collect information from the OIE Reference Centres on what reference materials they produce and supply. The ultimate aim would be to create a 'biobank' of correctly identified, quantified and stored materials. This biobank would assist the Commission to expand its standardisation programme to evaluate and adopt more of the reference materials that OIE Reference Laboratories are mandated to develop.

5. Equine influenza vaccine composition

The Commission endorsed the conclusions and recommendations of the Expert Surveillance Panel on Equine Influenza Vaccine Composition on the composition of equine influenza vaccines for 2014 (see p. 77).

6. OFFLU (the OIE/FAO network of expertise on animal influenza)

At the 2013 WHO Vaccine Composition Meeting, the OFFLU network contributed one hundred and forty H5N1 and sixty H9N2 virus sequences to help WHO in pandemic preparedness. The OFFLU Swine Influenza Virus Group paper, entitled: 'Review of influenza A virus in swine worldwide', was published in *Zoonoses and Public Health*. The LAMP (loop-mediated isothermal amplification) project funded by OIE under OFFLU technical activities was completed. The final report concluded that there is a need for robust and safe molecular assays that are affordable and applicable in low-resource laboratories. OFFLU organised a three-day technical meeting in December 2013 in Beijing, the People's Republic of China, to update the recommendations and develop new guidance on vaccines and vaccination against highly pathogenic avian influenza (HPAI) from lessons learned over the past six years. OFFLU carried out its second ring trial in 2013. Twenty laboratories from 19 different countries, including nine OIE/FAO Reference Centres and eleven national/regional laboratories, participated in this exercise. The results of the ring trial showed that there has been a substantial improvement in the accurate detection of influenza

virus A by laboratories but that some national/regional labs face challenges in subtyping and sequence analysis. OFFLU, in collaboration with STAR-IDAZ (Global Strategic Alliances for the Coordination of Research on the Major Infectious Diseases of Animals and Zoonoses), is organising a meeting at the OIE Headquarters in April 2014 to develop a ten-year vision for global animal influenza research needs.

Ad hoc Groups

Setting Up a Global Database on the Use of Antimicrobial Agents in Animals

OIE Headquarters, Paris, 6–8 January 2014

The Group was convened after the adoption of Recommendation No. 7 by the participants of the OIE Global Conference on the Responsible and Prudent Use of Antimicrobial Agents for Animals (held in Paris from 13 to 15 March 2013), recommending to the OIE the collection of harmonised quantitative data on the use of antimicrobial agents in animals with a view to establishing a global database.

The main objective of the Group was to provide expertise and guidance to the OIE on beginning to collect relevant data and the eventual establishment of a global database, taking into account the results of the questionnaire on monitoring the quantities of antimicrobial agents used in animals, presented at the OIE Global Conference, mentioned above.

The Group discussed the purpose of such a database, the scope and types of data that could be collected, the necessity of ensuring that this information is harmonised, standardised and applicable to all OIE Member Countries, and developed a work plan for the coming year to advance progress on this issue.

Evaluation of Contagious Bovine Pleuropneumonia (CBPP) Status of Member Countries

OIE Headquarters, Paris, 8–9 January 2014

The Group evaluated three dossiers submitted by Member Countries who applied for recognition as being historically free from CBPP. The Group was informed of a new article in the *Terrestrial Code* on the endorsement of an official control programme for CBPP.



Activities of the Scientific and Technical Department

Evaluation of African Horse Sickness (AHS) Status of Member Countries

OIE Headquarters, Paris, 14–15 January 2014

The Group evaluated a total of 16 applications in accordance with the *Terrestrial Animal Health Code*. As announced at the OIE General Session in May 2013, the deadline for applications through the short procedure for AHS historical freedom has been extended for another year, allowing historically free Member Countries to apply easily. Fifteen of the applicant Member Countries took advantage of this extension and used the short procedure for historical freedom recognition.

Foot and Mouth Disease (FMD)

OIE Headquarters, Paris, 4–6 February 2014

The Group finalised the revision of the *Terrestrial Code* chapter on FMD. A revised chapter was circulated for a first round of comments in February 2013 and the Group was asked to address the scientific comments from Member Countries, as well as comments from the specialist Commissions.

Tuberculosis

OIE Headquarters, Paris, 11–13 March 2014

The Group finalised the revision of the existing chapters of the *Terrestrial Code* on tuberculosis, addressing comments from the Scientific Commission. The Group kept a pathogen-based approach, which had been undertaken in the revision of some chapters in the *Terrestrial Code* and approved by the specialist Commissions. The Group also took into account the approach taken in the draft chapter on brucellosis, where relevant.

Activities of the International Trade Department

Summaries of the OIE Specialist Commission, Working Group and *Ad hoc* Group meetings

January to March 2014

Ad hoc Groups

Safety of Products Derived from Aquatic Animals

January–February 2014

The *ad hoc* Group on the Safety of Products Derived from Aquatic Animals worked remotely as an electronic *ad hoc* Group during January and February 2014.

The *ad hoc* Group was convened to conduct assessments on a range of commodities commonly traded internationally against the criteria provided in Chapter 5.4. of the *Aquatic Animal Health Code* for salmonid alphavirus. It recommended that a list of commodities be included in Articles 10.X.3. and 10.X.12. of the new chapter on 'Infection with salmonid alphavirus'. It also evaluated whether salmonid alphavirus is vertically transmitted in disinfected eggs and recommended the inclusion of a new article on the importation of disinfected eggs.

Porcine Cysticercosis

OIE Headquarters, Paris, 4–6 February 2014

The *ad hoc* Group was convened to draft a chapter on 'Infection with *Taenia solium*' for the *Terrestrial Animal Health Code*. The aim of the chapter is to reduce the risk of infection of humans and animals with *T. solium* and to minimise its international spread. The chapter will provide recommendations for prevention, control and surveillance for infection with *T. solium* in pigs, and recommendations for the importation of pig meat, with the goal of reducing the public health and economic impacts of the disease.

Specialist Commissions

Terrestrial Animal Health Standards Commission

OIE Headquarters, Paris, 11–20 February 2014

The Terrestrial Animal Health Standards Commission reviewed Member Country comments on those texts circulated





Activities of the International Trade Department

after the Commission meeting in September 2013, together with the reports of OIE *ad hoc* Groups ('Animal Welfare and Dairy Cattle Production Systems' and 'Porcine Cysticercosis') and the OIE Animal Production and Food Safety Working Group.

The Commission also reviewed several revised or new draft chapters received from the Scientific Commission for Animal Diseases.

The Commission will propose the following revised or new chapters for adoption in the *Terrestrial Code* at the 82nd General Session in May 2014:

- the user's guide
- the glossary
- notification of diseases, infections, infestations and epidemiological information
- criteria for the inclusion of diseases, infections and infestations on the OIE List
- import risk analysis
- the collection and processing of in vivo-derived embryos from livestock and equids
- general obligations related to certification
- certification procedures
- animal health measures applicable before and at departure
- an introduction to the recommendations for controlling antimicrobial resistance
- the responsible and prudent use of antimicrobial agents in veterinary medicine
- risk assessment for antimicrobial resistance arising from the use of antimicrobial agents in animals
- animal welfare and broiler chicken production systems
- Veterinary Services
- the evaluation of Veterinary Services
- communication
- infection with African horse sickness virus
- infection with *Trichinella* spp.
- infection with Rift Valley fever virus
- tularemia
- infection with *Brucella abortus*, *B. melitensis* and *B. suis*
- infection with avian influenza viruses
- Newcastle disease
- infection with *Mycoplasma mycoides* subsp. *mycoides* SC (contagious bovine pleuropneumonia)
- the high-health-status horse subpopulation
- infection with equid herpesvirus 1 (equine rhinopneumonitis)
- infection with equine arteritis virus

- infection with peste des petits ruminants virus
- the prevention, detection and control of *Salmonella* in poultry
- general recommendations on disinfection and disinsectisation.

In addition, chapters on vesicular stomatitis (Chapter 8.16.) and on swine vesicular disease (Chapter 15.4.) will be proposed for deletion, in accordance with the proposed delisting of these diseases.

The Commission also decided to circulate the following revised or new draft chapters for Member Country comments:

- animal welfare and dairy cattle production systems
- infection with *Taenia solium*
- infection with porcine reproductive and respiratory syndrome virus.

Member Country comments on these texts will be reviewed at the Commission's next meeting in September 2014.

Furthermore, the Commission reviewed the applications for recognition as an OIE Collaborating Centre and provided its view on these submissions to the OIE Council for further consideration.

Aquatic Animal Health Standards Commission

OIE Headquarters, Paris, 24–28 February 2014

The Aquatic Animal Health Standards Commission addressed Member Country comments on the texts circulated as part of the Commission's October 2013 meeting report and the work of the OIE electronic *ad hoc* Group on the Safety of Products Derived from Aquatic Animals.

The Commission will propose amended texts for adoption in the *Aquatic Animal Health Code* at the 82nd General Session in May 2014 on:

- the glossary
- notification of diseases and epidemiological information (Chapter 1.1.)
- criteria for listing aquatic animal diseases (Chapter 1.2.)
- diseases listed by the OIE (Chapter 1.3.)
- import risk analysis (Chapter 2.1.)
- the quality of Aquatic Animal Health Services (Chapter 3.1.)
- general obligations related to certification (Chapter 5.1.)
- certification procedures (Chapter 5.2.)
- necrotising hepatopancreatitis (Chapter 9.4.)





Activities of the International Trade Department

- model Chapter X.X.
- yellow head disease (Chapter 9.8.)
- infection with infectious salmon anaemia virus (Chapter 10.5.)
- infection with salmonid alphavirus (new Chapter 10.X.)
- criteria for determining the susceptibility of aquatic animals to specific pathogenic agents (new Chapter X.X.).

The Commission will propose amended texts for adoption in the Aquatic Manual at the 82nd General Session in May 2014 on:

- infection with infectious salmon anaemia virus (Chapter 2.3.5.)
- infection with ostreid herpesvirus 1 microvariants (Chapter 2.4.9.)
- infection with salmonid alphavirus (Chapter 2.3.X.)
- infectious hypodermal and haematopoietic necrosis (Chapter 2.2.2.).

The Commission also circulated the 'Guide to the Use of the *Aquatic Animal Health Code*', for Member Countries' comments¹.

The Commission reviewed the document on 'Surveillance for infection with *Bonamia ostreae*' and requested that this be uploaded onto the Commission's website. The Commission reviewed and endorsed three applications for OIE Reference Laboratory status and will propose these for adoption at the 82nd General Session. Finally, the Commission updated its work programme for 2014–2015.

¹ The Guide to the Use of the *Aquatic Animal Health Code* is available at: www.oie.int/en/international-standard-setting/aquatic-code/access-online/?htmfile=guide.htm

regional activities

Staff movements

Africa

Arrival

OIE Sub-Regional Representation for North Africa

Dr Alessandro Ripani



During his five-and-a-half-year spell at the OIE Headquarters in Paris, Dr Alessandro Ripani worked in both the Animal Health Information Department and the Scientific and Technical Department, where he was responsible for processing

applications from OIE Member Countries for official recognition of their disease status for specific animal diseases. In particular, Dr Ripani helped to establish a standard procedure for recognising disease status.

Having returned to his home institution, *Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise 'G. Caporale'*, in Teramo, Italy, in September 2013, Dr Ripani rejoined the OIE on 17 February 2014 as Technical Assistant to the OIE Sub-Regional Representation for North Africa, based in Tunis, Tunisia.

The OIE Sub-Regional Representation for North Africa is delighted to welcome him and to benefit from his wealth of experience.



Americas

Arrivals

OIE Sub-Regional Representation for Central America



Dr Montserrat Arroyo Kuribreña

Dr Montserrat Arroyo Kuribreña gained her doctorate in veterinary medicine from the National Autonomous University of Mexico (UNAM). She also has a Master's degree in preventive veterinary medicine from the University of California in Davis, the United States of America. She joined the OIE on 1 January 2014 as Sub-Regional Representative of the OIE for Central America.

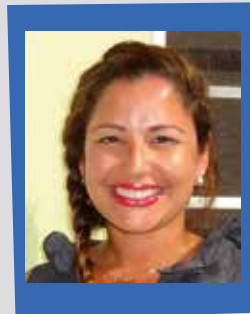
Dr Arroyo worked for the National Service for Agri-Food Health, Safety and Quality (SENASICA) in Mexico, initially in the fields of foreign animal disease prevention and national surveillance and control programmes. She then became Director for Imports and Exports, managing international negotiations for the trade in animal products, as well as sanitary and phytosanitary measures, and cooperative agreements on animal health with third countries, a position that she held until December 2013. Dr Arroyo has also taken part as a speaker in several scientific and technical conferences, seminars and training workshops, and assisted in their organisation and smooth running. The OIE would like to extend her a warm welcome.



Ms Lexy Castro de Ceballos

Ms Lexy Castro de Ceballos joined the OIE Sub-Regional Representation for Central America as Secretary on 1 February 2014, replacing Ms Alina Gutierrez, who has been appointed as Secretary for the OIE Regional Representation for the Americas.

Lexy Castro de Ceballos is Panamanian. She has a Bachelor's degree in marketing and is currently studying for her postgraduate degree in high-level management. She has previously worked mainly in the private sector and is enthusiastic about joining the OIE team. We are just as happy to have her on board.



OIE Regional Representation for the Americas

Ms Alina Gutiérrez Camacho

Ms Alina Gutiérrez Camacho has exchanged her position as Secretary for the OIE Sub-Regional Representation for Central America in Panama for one as Secretary at the OIE Regional

Representation for the Americas in Buenos Aires, where she took up her new role on 1 March 2014.

The OIE wishes her all the best in this new position, where she will continue to contribute to the administrative tasks and logistics of meetings in the region, a challenge to which she has already proven herself more than equal.

Departure

OIE Regional Representation for the Americas

Ms Alicia Palmas

Ms Alicia Susana Palmas retired from her role as Secretary of the OIE Regional Representation for the Americas on 31 March 2014.

Alicia has been part of the staff of the OIE Regional Representation for the Americas since the day of its creation, and



Alicia Palmas handed over to Alina Gutiérrez

has given it her loyalty and service for 15 uninterrupted years.

During that time she participated both in the management of administrative affairs and in the organisation of regional events, collaborating and interacting with all the other OIE Member Countries from the region.

Her colleagues from the OIE, as well as many members of the Veterinary Services from the Americas, would like to thank Alicia for her work and wish her the very best for this next phase in her life.

Europe

Arrival

OIE Sub-Regional
FMD Coordination Office
in Kazakhstan

Dr Askar Kozhayev

Dr Askar Kozhayev took up his new role as technical assistant at the OIE Sub-Regional FMD Coordination Office in Astana, Kazakhstan, on 15 January 2014. He will provide technical support in the implementation of various projects for the prevention and control of animal diseases in the Eurasian region, particularly foot and mouth disease (FMD).

Dr Kozhayev has considerable experience in the production of industrial and semi-industrial vaccine and diagnostic kits. As well as lecturing in biosafety at Kazakhstan National Agrarian University in Almaty, Dr Kozhayev worked on the harmonisation of veterinary animal health requirements in the Department of Animal Breeding Development and Veterinary Safety, at the Ministry of Agriculture of the Republic of Kazakhstan, under a programme called 'Normative and methodological support for the development of branches of the agro-industrial complex'. He was also in charge of a project for developing technical regulations at the Kazakh Ministry of Agriculture. We hope he finds his new work at the OIE Sub-Regional FMD Coordination Office equally as stimulating.



Meetings

Africa

Launch of AfriVIP,
the African Veterinary Information Portal

The African Veterinary Information Portal (AfriVIP), an open educational resources (OER) platform, was launched by the Faculty of Veterinary Science, University of Pretoria (UP), on 18 February 2014.

The event was attended by more than 100 invited guests, including 12 Deans from the Faculties of Veterinary Medicine from East, Central and Southern Africa, and, from the OIE, Dr Walter Masiga, Sub-Regional Representative for Eastern and the Horn of Africa, and Dr Neo Mapiitse, Sub-Regional Representative for Southern Africa.

AfriVIP's objective is to draw together the substantial intellectual capital on uniquely African matters through a network of veterinary science faculties and African veterinary associations working in Africa and further afield. It has been developed under an open licensing framework as an online portal of information, educational and research resources and continuing professional development opportunities for veterinary and paraveterinary professionals and students.



Left to right: Dr Walter Masiga (OIE), Prof. Maxime Madder (ITM, Antwerp, Belgium), Dr Neo Mapiitse (OIE), Prof. Gerry Swan (Dean, Faculty of Veterinary Science, UP), Prof. Cheryl de la Rey (Vice-Chancellor and Principal, UP), Prof. Koos Coetzer (Deputy Dean, Faculty of Veterinary Science, UP), Ms Catherine Ngugi (OER Africa), Mr Neil Butcher (Neil Butcher & Associates) and Dr Peter Oberem (Afrivet)

Photo courtesy of the Faculty of Veterinary Science, University of Pretoria



AfriVIP has been developed by the following partners: the Faculty of Veterinary Science, UP; Afrivet, South Africa; the OIE Collaborating Centre for Training in Integrated Livestock and Wildlife Health and Management (the Department of Veterinary Tropical Diseases, Faculty of Veterinary Science, UP, and its five consortium partners); OER Africa (an initiative supporting the development of OER in Africa), Kenya; the Institute of Tropical Medicine (ITM), Antwerp, Belgium; and Neil Butcher & Associates, South Africa.

The AfriVIP partners have recognised the need to share their knowledge, resources and research findings with veterinary and paraveterinary professionals and students and other stakeholders, and to provide high-quality continuing professional development training opportunities. The Vice-Chancellor and Principal of UP, Prof. Cheryl de la Rey, explained during the launch that AfriVIP will enhance UP's profile within the region and will make a difference, both locally and internationally.

For more information on this exciting and innovative initiative, see the website: www.afrivip.org

You can also contact: afrivip@up.ac.za

Asia – Pacific

Inception meeting of the OIE/ JTF Project on Controlling Zoonoses in Asia under the 'One Health' Concept

Tokyo, Japan, 19–20 December 2013

The inception meeting of the OIE/ Japan Trust Fund (JTF) Project on Controlling Zoonoses in Asia under the One Health Concept was held in Tokyo on 19 and 20 December 2013. The meeting began with the opening remarks of Dr Alain Dehove, OIE World Fund Coordinator, and Dr Toshiro Kawashima, Chief Veterinary Officer and Delegate of Japan to the OIE.

This new project, funded by the Government of Japan, is planned for five years, starting in December 2013, with the goal of contributing to the countries in the region by focusing on specific zoonoses.

The project consists of three basic components:

a) an assessment of control measures for highly pathogenic avian influenza (HPAI)



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b) preparedness for zoonotic influenza

c) strengthening rabies control.

The key objectives of this meeting were to:

- provide participants with updates on regional concerns related to these diseases
- discuss required actions and possible activities that the project could undertake to respond to these concerns

– gain overall endorsement of the draft project framework for 2013 to 2017

– identify key activities for the coming year.

The meeting was attended by 45 participants, including regional experts on animal influenza and rabies from the OIE Reference Laboratories; representatives from Bangladesh, the People's Republic of China, Hong Kong SAR, Indonesia, Japan,



the Republic of Korea, Mongolia, Nepal, Chinese Taipei and Vietnam; representatives from OIE Headquarters and the Regional Representations, the FAO Regional Office for Asia and the Pacific (FAO RAP), the Association of South-East Asian Nations (ASEAN) and the Secretariat of the Pacific Community (SPC).

The OIE's contribution to 'One Health' was presented by Dr Alain Dehove, and the FAO view of methods for collaboration was discussed by Dr Reildrin Morales from FAO RAP. The status of zoonoses and concerns from a sub-regional perspective were presented by the representatives of ASEAN, SPC and the Member Countries of the South Asian Association for Regional Cooperation (SAARC).

In the technical sessions on HPAI control measures, preparedness for zoonotic influenza, and strengthening rabies control, various experts and country representatives gave presentations to share their experience and relevant technical information. Among the key topics presented were: the OIE rabies control strategy and regional vaccine bank, global and regional rabies scenarios, HPAI vaccination and an exit strategy, avian influenza H7N9 in China, surveillance of swine influenza and conducting risk assessments of live bird markets.

These are some of the important points that participants acknowledged as recent achievements, current concerns or continuing efforts:

Overall approaches to zoonosis control in Asia

- The importance of controlling zoonoses at the animal source should be further reinforced under the One Health concept.
- There is a need for greater effort to improve communication among people from different backgrounds.
- Cooperation at the sub-regional level is important to ensure ownership, political support and sustainability for this project, as indicated by the experience of ASEAN and SAARC, which have established a coordination mechanism with the support of FAO.



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Rabies control

- It was noted that, since under-reporting is a serious concern, it is important to ensure that rabies is notified and there is a need to conduct rabies surveillance of animals including, where relevant, wildlife.
- There is a need to address the risks in areas where dogs are used for human consumption.
- Enhancing the networking of laboratories and epidemiological systems is important in view of the usefulness of sharing data on virus strains/clades in the region and the fact that these data are very valuable in developing more focused rabies control and monitoring activities.
- In order to improve vaccine availability, enhancing local production capacity is also important whenever possible; however, this requires the mobilisation of more funds from governments.

HPAI control measures

- The Verona recommendations are still relevant as useful guidance for vaccination¹.
- No single measure is enough to prevent, control and eliminate HPAI.
- Where vaccination is carried out, it is important to position vaccination within an integrated disease control system by defining the purpose of vaccination, developing protocols,

¹ Verona recommendations: www.oie.int/doc/ged/D4410.PDF

conducting post-vaccination monitoring and considering exit strategies (i.e. improving the biosecurity of poultry production systems, so that mass vaccination can be changed to risk-based, targeted vaccination with a view to eventual termination).

- Research opportunities are present in areas such as the prediction and identification of progenitor viruses; linking molecular epidemiology and value chain data is also important.

Zoonotic influenza preparedness

- Active surveillance for animal influenza should be carried out in order to monitor emerging strains, since clinical signs are insufficient.
- Preventive measures should be developed based on risks.
- Effective prevention and control measures require a strong legislative basis with effective compliance activities.
- Concern has been expressed that swine influenza virus is not on the OIE list of notifiable diseases and that this affects the attention given to it, as well as reporting at the country level. However, it is noted that the OIE requires notification of any emerging event.

The participants generally supported the draft framework and the meeting concluded that the draft is appropriate, including its governance proposals and methods of procedure. The participants encouraged the OIE to transform this framework into practice, starting with the formation of two working groups, one for rabies and another for animal influenza; this would enable the creation of more concrete activity plans.

The two-day meeting concluded with final remarks from Dr Hirofumi Kugita, OIE Regional Representative for Asia and the Pacific, expressing his appreciation for the continuing support of the Ministry of Agriculture, Forestry and Fisheries of the Government of Japan, and the careful deliberations of the participants.

Facilitation of international competition horse movement Regional Workshop

Hong Kong, 18–21 February 2014

This workshop brought together key stakeholders concerned with the transboundary movement of competition horses; namely, government authorities, national Equestrian Federations and national Horse Racing Authorities. Around 100 people from the region attended the three-day meeting while some countries from outside the region were also invited.

The meeting consisted of a mixture of lectures and working-group sessions and was organised by the OIE in collaboration with the *Fédération Équestre Internationale* (FEI), the International Federation of Horseracing Authorities (IFHA), and the Agriculture, Fisheries and Conservation Department of Hong Kong SAR (AFCD). The Hong Kong Jockey Club generously provided

the Happy Valley Race Course as a venue, setting the scene for the topic under discussion, and the meeting was officially opened by Dr Wing Man Ko, the Secretary for Food and Health, Hong Kong SAR, followed by Dr Bernard Vallat, Director General of the OIE, who had also working meetings with the official authorities of Hong Kong as well as with authorities from the private sector, including the managers of the Jockey Club.

In the last decade, there has been significant global growth in the sport horse industry, bringing socio-economic benefits to many national economies and to the horse industry itself. However, the industry faces a number of obstacles to the free and safe international movement of horses for international



The logo of the Workshop

competitions and race meetings, and these also pose a problem to countries who wish to expand their own equine industries. Such obstacles include inconsistent approaches to health regulations and quarantine, leading, in



Left to right: Mr Winfried Engelbrecht-Bresges, Chief Executive Officer of the Hong Kong Jockey Club and Vice Chairman of the IFHA; Dr Bernard Vallat, Director General of the OIE; Mr Ingmar De Vos, FEI Secretary General; and Mr Chi Kong Alan Wong, Director of the Agriculture, Fisheries and Conservation Department of the Government of Hong Kong, pictured on 18 February 2014 at the opening of an historic international movement of sport horses workshop for government veterinary and animal health experts from twenty nations across Asia and Oceania at the Happy Valley Race Course (Hong Kong)

some cases, to excessive and irregular health requirements for the temporary importation of horses.

To help participants to debate these issues and discuss such problems with public and private stakeholders, presentations were given on the OIE initiative of the High Health, High Performance horse (HHP horse) sub-population, the organisation of FEI and IFHA and the equine industry they support, and the views of other important participants, such as laboratories and horse transporters. Government representatives also presented on the existing national horse importation regulations.

A survey on the current importation requirements was carried out before the workshop, and the results of this formed the basis for the working-group and plenary discussions.

The key findings of the survey were an eye-opener for all participants since they clearly demonstrated the diversity of existing regulations:

a) Among the 21 countries that were included in the survey, freedom certification was requested for 43 different equine diseases (note: the OIE recommends certification for 11 equine diseases and 6 diseases that affect multiple species, equines included). It was also noted that 50% of the respondents had separate certificates for the temporary importation of horses, but tended to negotiate and use them only for specific events.

b) It was also found that countries in this region request pre-export quarantine and post-arrival quarantine for all 17 OIE-listed diseases and for another 14 non-listed diseases, which is surely one of the major issues impeding easier horse movement.

There were two working-group sessions, each involving both government representatives and participants from the national Equestrian Federation and national Horse Racing Authority. The government groups were asked to establish a priority list of diseases that could be agreed upon and harmonised for the horse movement certification process, while each of the industry groups separately discussed biosecurity measures for HHP horses and ways of improving cooperation between the public veterinarians working for the industry and government authorities.

All those taking part, but in particular government representatives, recognised the need to harmonise health certification based on scientific considerations, to introduce temporary importation certificates and to consider the HHP concept as a useful tool. There was a general appreciation of the need for government officials to improve their knowledge of equine health and of the clear leadership role that the OIE has to play in this regard.

A social programme that included a visit to a Happy Valley race meeting and a trip to the quarantine and equine hospital facilities of the Hong Kong Jockey Club put many of the presentations into a more practical perspective.

A number of recommendations were agreed upon and these should be helpful to all those continuing to work on the HHP initiative at the regional and country level.

A full report on the survey, the presentations, the outcomes of the working-group sessions and the recommendations are available on the OIE Regional Representation for Asia and the Pacific website at: www.rr-asia.oie.int/activities/regional-programme/other-activities/international-horse-movement/

20th Meeting of the OIE Sub-Commission for FMD Control in South-East Asia and China

Nay Pyi Taw, Myanmar, 11–14 March 2014

The OIE Sub-Commission for Foot and Mouth Disease (FMD) Control in South-East Asia and China met from 11 to 14 March 2014 in Nay Pyi Taw, Myanmar. This meeting brought together the Director General of the OIE, other OIE officials, OIE Delegates and National FMD Coordinators from 11 Member Countries, as well as representatives from partner organisations and observers.

Participants reviewed the performance of the South-East Asia and China Foot-and-Mouth Disease Control Campaign (SEACFMD) and proposed recommendations on issues of governance and administration. These included not only the necessary minor amendments to the second edition of the *SEACFMD 2020 Roadmap*¹, to ensure its accuracy, but also the initial constructive findings of the Australian Government; namely, the independent, commissioned mid-term review of the ‘Stop Transboundary Animal Diseases and Zoonoses’ Programme (STANDZ), being managed by the OIE Sub Regional Representation for South-East Asia (OIE SRR-SEA).

The meeting also discussed developments in the SEACFMD Action Plan for the coming year, particularly sample submission and characterisation, vaccination, outbreak investigation and animal movement.

Those at the meeting reviewed the status of FMD in the region over the past year, noting with concern the spread of

serotype A. In consequence, Member Countries agreed to continue monitoring the circulation of viruses in the region, particularly serotype A, so that vaccine-matching plans can be developed, using the expertise of the OIE Reference Laboratories for FMD. Member Countries were also requested to submit FMD samples in a timely manner to OIE Reference Laboratories for characterisation and so that epidemiological studies on FMD outbreaks can be carried out to identify risks and potential control points.

An expert group was convened to discuss scientific recommendations in response to the current FMD situation in the region, in areas such as identifying suitable serotype A vaccine strains, deciding on FMD strains for inclusion in the OIE Vaccine Bank, and detailing FMD research needs.

The major FMD initiative in northern Laos (2014–2016), carried out under the OIE SRR-SEA, Australian-funded STANDZ Programme, received support from Member Countries and is expected to have a positive effect on other activities supported by the SEACFMD Campaign, which last year received additional funding from the People’s Republic of China (USD 83,000) and New Zealand (EUR 35,616). The New Zealand Government has offered additional funding of NZD 4.5 million for SEACFMD over the next five years. For their part, Member Countries agreed to share the responsibility for the delivery of FMD programmes, as



20th Meeting of the OIE Sub-Commission for FMD Control in South-East Asia and China

¹ The second edition of the SEACFMD 2020 Roadmap is available at: www.rr-asia.oie.int/fileadmin/SRR_Activities/SEACFMD_2020_for_print_5_June_2012.pdf



well as the costs of their coordination, while ensuring political support and the provision of funding and resources to their counterparts.

Member Countries also agreed that, pending the finalisation of the third edition of the *SEACFMD 2020* Roadmap, covering the period 2016–2020, an addendum to the second edition (2011–2015) will be prepared with minor amendments, such as the membership of the SEACFMD Steering Committee and clarification of some of its functional elements. This will ensure its consistency with overall OIE policy and approaches, as well as with the Global Strategy for FMD Control.

Given the significant risk posed by animal movement in the spread of FMD, it was suggested that a high-level meeting of

OIE Delegates from the Greater Mekong Sub-Region be held to harmonise approaches towards cross-border movement. Member Countries also agreed that an animal movement study should be designed and carried out in the countries of the Greater Mekong. Member Countries were encouraged to actively involve the private sector in FMD-control-related activities through public–private partnerships.

On the last day, a special session on ‘One Health’ and rabies was held for the OIE Delegates and attended by the Director General, which aimed to arm Delegates with a better understanding of overall policy approaches and national activities, as well as to identify issues of importance.



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4th meeting of OIE Delegates for South-East Asia

11th meeting of the Upper Mekong Working Group on FMD Zoning and Animal Movement Management

Bokeo, Laos, 12–14 February 2014

The Upper Mekong Working Group (UMWG) was formed in 2002 under the South-East Asia and China Foot and Mouth Disease Campaign (SEACFMD) to focus on FMD zoning and animal movement management. It consists of the Yunnan Province of the People's Republic of China (P.R. China) and

the northern parts of Laos, Myanmar, Thailand and Vietnam.

The 11th Meeting of UMWG was held in Bokeo, Laos, from 12 to 14 February 2014. Participants from OIE Member Countries and partner organisations reviewed zoning strategies and agreed on how they should be

refined, in light of the economic developments, changing risk patterns and livestock movements in the Upper Mekong region.

The meeting recognised the significant challenge posed by increased movements of animals to the Upper Mekong's FMD buffer and control



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zones. The risk of FMD incursion linked to animal movement has been comprehensively acknowledged. The re-emergence of FMD serotype A in a number of countries in the region is considered a major concern.

Population growth, infrastructure developments and changes in trade patterns, caused by the growing demand for livestock and livestock products in P.R. China, have all played a role in increasing animal movements. Socio-economic studies have highlighted the need to constantly monitor fast-changing trade patterns and value chains, alongside economic development in the region.

Participants agreed that more cooperation is needed among Member Countries to address the risk of FMD incursions resulting from the growing cross-border trade in live animals. The SEACFMD Programme should continue to monitor animal movement patterns and coordinate with other partners and existing projects to examine measures to reduce the risks of FMD along the pathway.

Member Countries also presented their national FMD situations and any activities conducted within the Upper Mekong control and buffer zones. A number of initiatives

have been implemented, including strategic vaccination, slaughter at pre-determined points and activities to manage animal movements. The OIE Sub-Regional Representation for South-East Asia presented a three-year FMD control project in northern Laos — supported by the Australian-funded ‘Stop Transboundary Animal Diseases and Zoonoses’ Programme (STANDZ) — which will soon be launched.

Dr Gardner Murray, OIE Special Adviser, noted the complementarity and close coordination of SEACFMD activities with those of the FAO and the OIE regional representations in Asia and the Pacific, and commented that such cooperation and leveraging of funds are heading in the right direction, as these groups continue to work more closely together.

UMWG Member Countries, particularly P.R. China, Thailand and Vietnam, were encouraged to submit their official FMD control programmes for OIE endorsement, as stipulated in Article 8.6.48. of the *Terrestrial Animal Health Code*. The OIE Vaccine Bank and vaccination and post-vaccination monitoring activities in P.R. China, Laos, Myanmar, Thailand and Vietnam were also discussed. OIE staff introduced the SEACFMD vaccination

monitoring guidelines and noted the development of the FAO/OIE Global Post-Vaccination Monitoring (PVM) Guidelines for FMD.

Member Countries drafted an action plan to be undertaken in the next 12 months.

With regard to vaccination, several priority actions were identified:

- a) continued vigilance in characterising the circulating FMD virus strains in the Upper Mekong Zone, and monitoring the appropriateness of vaccines through vaccine matching
- b) strengthening capacity in vaccine-handling, vaccination and vaccination campaign implementation
- c) establishing and/or further refining the PVM plans for FMD vaccination campaigns, and
- d) including advocacy and public awareness when planning vaccination campaigns to ensure that the national and local government, farmers, and other key stakeholders are all fully involved.



Country perspectives on IHR¹/PVS² assessments and roadmap for better intersectoral collaboration among animal and human health sectors

National workshop

Baku, Azerbaijan, 13–14 March 2014

The World Health Organization (WHO) and the World Organisation for Animal Health (OIE) are active promoters and implementers of the 'One Health' approach, which addresses risks at the animal–human interface. As a result, the OIE and WHO have begun to identify, explore and map areas of common interest in the OIE and WHO capacity-building frameworks to develop methods for strengthening the governance of national health and animal health systems worldwide. This project is being undertaken under the framework of the World Bank project on National Human and Animal Health Systems Assessment Tools and Bridging Opportunities.

The national WHO tools for monitoring the International Health Regulations (IHR) and the OIE Performance of Veterinary Services (PVS) Pathway are crucial in assisting national strategic planning for zoonosis prevention and control, and food safety measures. The collaborative desk-work conducted so far by the OIE and WHO must be tempered by the real experiences gained by the actual use of these tools in various countries. A series of workshops was therefore planned to 'test' preliminary results in real conditions — with the Baku workshop being the first of these.

The aims of this national workshop were to:

- a) advance Azerbaijan's One Health agenda, by identifying weaknesses and strengths in the inter-sectoral collaboration between its Veterinary Services and its Human Health Services, and defining a common national roadmap to comply with international standards
- b) better aligning OIE and WHO capacity-building approaches and tools for the benefit of WHO and OIE Member Countries.

More than 50 participants, from both the human health and veterinary sectors of Azerbaijan, took part in the seminar. Guests of honour included Dr H. Asadov, Minister of Agriculture of the Republic of Azerbaijan, and his Deputy, Dr I. Guliyev, as well as Dr M. Eloit, Deputy Director General of the OIE. There was also an opportunity for Dr Eloit and Dr Lukauskas, OIE Regional Representative in Moscow, to meet with Dr A. Amiraslanov, Head of the Agrarian Policy Issues Department, from the Administration of the President, to present the principles advocated by the OIE for the improvement of the national Veterinary Services.

Over two days, the participants reviewed the outputs of the WHO/IHR core-capacity assessment (2008 and 2012) and the OIE PVS Pathway assessments conducted in Azerbaijan (OIE PVS evaluation in 2008 and PVS Gap Analysis in 2011), in areas of common interest to the human health and veterinary sectors. Through plenary lectures and working-group sessions dedicated to very concrete examples (rabies, brucellosis, anthrax and highly pathogenic avian influenza or HPAI), participants were able to identify ways of using the assessment outputs, gain a better understanding of the respective roles and mandates of both sectors and define areas of synergy to be considered in the national roadmap, based on their shared responsibilities under the One Health agenda.

The participants noted the existing good collaboration between the Veterinary and Human Health Services, gained from the HPAI/H5N1 episode a few years ago, in the fields of early detection, joint investigation, rapid response to zoonoses and, more generally, in exchanging information. Several joint contingency plans have already been developed (for HPAI, rabies, etc.) and a joint Operational Procedure is currently being devised to address all zoonoses. While this inter-sectoral collaboration is very effective in the case of emergencies, it also needs to be well established and sustainable for routine work and, in particular, for the key operational elements presented in the box below. The results of the WHO/IHR and OIE/PVS Pathways assessments are providing guidance in this task and the OIE/WHO collaboration will increase the benefits they offer.

The outcomes of all the seminars will be made into case studies for each country, to illustrate the unique environment created by the WHO IHR monitoring tools and OIE PVS Pathway and develop best practices on good governance for reference across the animal and human health sectors.

Key operational elements for effective cross-sectoral collaboration

(from a high-level technical meeting, Mexico, November 2011)

- cross-sectoral coordination mechanisms
- routine communication
- joint simulation exercises
- data-sharing
- joint risk assessment
- active cooperation on disease control programmes.

¹ IHR: International Health Regulations

² PVS: Performance of Veterinary Services



Inter-regional consultative meeting on progress in the FMD and PPR situation

Amman, Jordan, 2–4 March 2014

A meeting to discuss the progress made in controlling foot and mouth disease (FMD) and peste des petits ruminants (PPR) within the Middle East region, labelled as a GF-TADs event, was held in Amman from 2 to 4 March 2014.

Hosted by the Ministry of Agriculture of the Hashemite Kingdom of Jordan and the Jordan University of Science and Technology, the meeting was attended by more than 50 participants, including 17 Chief Veterinary Officers (CVOs), representatives of international and regional agencies and national Jordanian observers.

The aim of the meeting was to assist the region's national Veterinary Services to better prepare and implement national control programmes and project proposals, to update and define their FMD and PPR action plans for 2014–2015, and to identify potential international support in the coming years, as well as to assist countries in preparing mid- or long-term action plans, including their possible submission to the OIE for endorsement and official disease-status recognition. It was also an opportunity to help additional donors and partners to coordinate and plan their activities in line with the global and regional FMD control strategy.

Participants were able to share information on the circulation of the FMD and PPR viruses within the Middle East and North Africa, and to review the progress of each country along the (previously defined) FMD Regional Roadmaps. It was also a chance to review the results of the continuing control efforts against FMD and PPR.

The meeting highlighted the importance of using the OIE Performance of Veterinary Services (PVS) Pathway tools and the relevant articles of the *Terrestrial Animal Health Code* to create and maintain the foundations for sound animal health systems that will help to prevent, control and eradicate animal diseases and zoonoses, and ensure safe international trade in animals and animal products.

In addition, the meeting discussed the importance of effective surveillance and competent diagnostic laboratories and regional networks, supported by the Reference Laboratories; the availability of vaccines matching the FMD virus strains circulating in the region; emergency response and preparedness; capacity-building for Veterinary Services; and regular and effective communication to help build public–private partnerships.

Participants recognised the importance of effective relations and collaboration among the countries of the Middle East and North Africa, and the robust coordination achieved by the Member Countries of the Mediterranean Network for Animal Health for North Africa (REMESA).

The meeting also established a Regional Advisory Group for the Middle East to carry out peer reviews of the FMD Progressive Control Pathway stage assessments. This group is composed of three nominated CVOs from the region as well as leading regional experts on laboratory and epidemiology matters (and possible future leaders of regional laboratory and epidemiology networks). Such assessments, based on specific questionnaires, are made available before the meeting to be reviewed by experts and then presented to the Regional Advisory Group.

Countries have also requested support to improve their capacity, particularly in terms of epidemiology, diagnosis and socio-economic approaches. Major gaps and challenges include the lack of epidemiological and laboratory networks, the absence of an FMD reference centre, and the limited capacity to conduct socio-economic impact analyses.

In terms of PPR, participants were briefed about the Global Control Strategy and the Monitoring & Evaluation tool, as well as on the new articles of the PPR chapter in the *Terrestrial Animal Health Code*. An international conference on PPR control was also announced, to be organised by the end of 2014. Participants at the meeting also presented their national reports.

Recommendations on PPR that were adopted concerned the development of national and regional control programmes, including vaccination, the strengthening of national Veterinary Services, capacity-building for epidemiology and risk analysis, movement controls for small ruminants, and the establishment of regional laboratory and epidemiology networks.

Finally, the meeting recommended that countries submit their national control plans to the OIE for official endorsement, as well as their dossiers for official recognition of freedom for zones and countries.

official acts

Appointment of permanent Delegates

17 February 2014

Honduras

Dr José Lizardo Reyes Puerto

Director General, Servicio Nacional de Sanidad Agropecuaria (SENASA), Ministerio de Agricultura y Ganadería



12 March 2014

Mali

Dr Halimatou Kone Traore

Directrice nationale, Services vétérinaires, Ministère du développement rural chargé de l'élevage, de la pêche et de la sécurité alimentaire

26 February 2014

Kyrgyzstan

Dr Ashirbai Zhusupov

Deputy Director, Chief State Veterinary Inspector, State Inspection on Veterinary and Phytosanitary Security, Ministry of Agriculture and Food



17 March 2014

Gambia

Dr Abdou Ceesay

Acting Director General, Gambia Veterinary Services, Department of Livestock Services, Ministry of Agriculture

5 March 2014

Uzbekistan

Dr Baxromjon T. Norqobilov

Head, Main State Veterinary Department, Ministry of Agriculture and Water Resources

26 March 2014

Chile

Dr Juan Enrique Moya Suárez

Jefe de la División de Protección Pecuaria, Servicio Agrícola y Ganadero (SAG), Ministerio de Agricultura



6 March 2014

Benin

Dr Byll Orou Kperou Gado

Directeur de l'élevage, Ministère de l'agriculture, de l'élevage et de la pêche

4 May 2014

Bangladesh

Dr Mozammel Haque Siddique

Director General, Department of Livestock Services, Ministry of Fisheries and Livestock

13 May 2014

Somalia

Dr Habiba Sheikh Hassan Hamud

Director of Veterinary Services, Ministry of Livestock, Forestry and Range



strengthening of Veterinary Services

OIE PVS Pathway for efficient
Veterinary Services

PVS Evaluation missions

State of Play – as at 16 May 2014

OIE Region	OIE Members	Requests received	Missions completed	Reports available for distribution to donors and partners
Africa	52	53	50	39
Americas	29	25	22	18
Asia and the Pacific	32	21	18	11
Europe	53	16	16	12
Middle East	12	13	11	5
Total	178	128	117	85

PVS Evaluation mission requests

• Africa (53)

Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Rep., Chad, Comoros, Rep. of the Congo, Dem. Rep. of the Congo, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia (not an OIE Member), Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe.

• Americas (25)

Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Rep., Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay, Venezuela.

• Asia-Pacific (21)

Bangladesh, Bhutan, Brunei, Cambodia, Fiji, Indonesia, Iran, Dem. People's Rep. of Korea, Laos, Maldives, Mongolia, Myanmar, Nepal, New Caledonia, Pakistan, Philippines, Sri Lanka, Thailand, Timor Leste, Vanuatu, Vietnam.

• Europe (16)

Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Georgia, Israel, Kazakhstan, Kyrgyzstan, Romania, Serbia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan.

• Middle East (13)

Afghanistan, Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Palestinian N.A. (not an OIE Member), Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen.

In red: completed missions

Legislation missions

State of Play – as at 16 May 2014

OIE Region	OIE Members	Requests received	Missions completed
Africa	52	33	19
Americas	29	7	5
Asia and the Pacific	32	5	5
Europe	53	4	2
Middle East	12	4	4
Total	178	53	35

Legislation mission requests

• **Africa (33)**

Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African (Rep.), Comoros, Dem. Rep. of the Congo, Côte d'Ivoire, Djibouti, Eritrea, Ethiopia, Gabon, Gambia, Guinea, Guinea-Bissau, Lesotho, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Niger, Nigeria, Ruanda, Seychelles, Sudan, Togo, Tunisia, Uganda, Zambia, Zimbabwe.

• **Americas (7)**

Barbados, Bolivia, Dominican Rep., Guatemala, Haiti, Honduras, Paraguay.

• **Asia/Pacific (5)**

Bhutan, Cambodia, Laos, Mongolia, Vietnam.

• **Europe 4)**

Armenia, Georgia, Kazakhstan, Kyrgyzstan.

• **Middle East (4)**

Afghanistan, Kuwait, Lebanon, United Arab Emirates.

In red: completed missions

PVS Gap Analysis missions

State of Play – as at 16 May 2014

OIE Region	OIE Members	Requests received	Missions completed	Reports available for distribution to donors and partners
Africa	52	45	38	22
Americas	29	15	11	10
Asia and the Pacific	32	18	12	7
Europe	53	8	7	2
Middle East	12	8	4	0
Total	178	94	72	41

PVS Gap Analysis mission requests

• **Africa (45)**

Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African (Rep.), Chad, Comoros, Dem. Rep. of the Congo, Côte d'Ivoire, Djibouti, Egypt, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Libya, Madagascar, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe.

• **Americas (15)**

Barbados, Belize, Bolivia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Suriname.

• **Asia-Pacific (18)**

Bangladesh, Bhutan, Brunei, Cambodia, Fiji, Indonesia, Iran, Dem. People's Rep. of Korea, Laos, Mongolia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, Timor Leste, Vanuatu, Vietnam.

• **Europe (8)**

Armenia, Azerbaijan, Bosnia and Herzegovina, Israel, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey.

• **Middle East (8)**

Afghanistan, Kuwait, Lebanon, Oman, Palestinian N.A. (not an OIE Member), Syria, United Arab Emirates, Yemen.

In red: completed missions

PVS Pathway Laboratory Mission and Tools Expert Training Workshop

OIE Headquarters, Paris, 18–20 March 2014

Members of the PVS Pathway Laboratory Technical Consultation Group joined other international laboratory and management experts invited to attend the first PVS Pathway Laboratory Mission and Tools Training Workshop, which took place at OIE Headquarters from 18 to 20 March 2014.

Through the PVS Pathway, the OIE responds to the requests of Member Countries for assistance in sustainably improving their compliance with OIE standards on the quality of Veterinary Services.

By addressing needs identified through PVS Pathway Evaluation and PVS Gap Analysis, the PVS Laboratory Mission determines the resources required for a national veterinary laboratory network to appropriately strengthen the capacity and structure of its Veterinary Services. This may help the country to adapt the level of investment for local, regional (sub-national) and national laboratories and inform political decisions on the possible creation of national reference laboratories.

Welcoming the participants, Dr Bernard Vallat, Director General of the OIE, noted that all OIE Member Countries have the opportunity, on a voluntary basis, to request an independent evaluation of their compliance with the OIE standards on quality, through the PVS Pathway. The improvement of the capacity of the national veterinary laboratory network is particularly important, not only to comply with these international standards and to meet national priorities, but also because it is critical to the control of major emerging issues at the human–animal interface.

As part of a European Union-funded cooperative effort (through a trust fund administered by the World Bank) to synergise operational strategies between the governance of national human health systems and of national animal health systems, WHO laboratory and management experts joined their animal health colleagues in improving their information about the PVS Pathway Manual and Tools, and of their implementation at the country level. The workshop, which was led by experienced PVS experts, provided participants with the opportunity to gain an in-depth understanding of



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Dr Bernard Vallat welcomes participants to the first OIE PVS Pathway Laboratory Mission Expert Training Workshop



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Laboratory expert consultants engaging in case studies using the PVS Laboratory Manual and Tools

the PVS Pathway Laboratory approach and methodology, and to engage in discussions and practical case studies using PVS Laboratory Tools.

As a result of this intensive training, PVS Laboratory Experts are well equipped to provide information that will enable a Member Country's key decision-makers to determine a viable strategy to strengthen the structure and quality of the 'laboratory' component of its Veterinary Services.

More information about the OIE PVS Pathway:
www.oie.int/en/support-to-oie-members/pvs-pathway/

OIE Regional Workshops for focal points and Information Seminars for new Delegates



Training workshop on WAHIS at OIE Headquarters

Paris, 18–20 February 2014

A training workshop on the OIE World Animal Health Information System (WAHIS) was held at the OIE Headquarters in Paris from 18 to 20 February 2014. The workshop was organised by the Animal Health Information Department, with the help of the OIE Regional Activities Department, and was specifically aimed at recently appointed National Focal Points for Animal Disease Notification to the OIE.

There were 24 participants at the workshop, representing 20 countries (Austria, Azerbaijan, Benin, Croatia, Cuba, France, Germany, Hungary, Kazakhstan, Kyrgyzstan, Laos, the People's Republic of China, Peru, the Republic of Korea, Russia, Spain, Sweden, Tajikistan, Trinidad and Tobago, and Venezuela). In view of the geographical range of the participants, the training given by staff of the Animal Health Information Department was relayed in four languages (English, French, Spanish and Russian), with the help of a team of interpreters.

The aim of the three-day workshop was to train Focal Points in the use of WAHIS and its web interface. It was based on PowerPoint presentations

interspersed with practical, hands-on exercises, such as: identifying errors in reports, to give participants a better grasp of how to fill out the various animal health information reports to be submitted to the OIE; searching for information in the web interface; and uploading comma-separated values (CSV) files for the large number of disease outbreaks that countries may have to include in their monthly or six-monthly reports. Some of the Focal Points who attended had only recently been nominated and had never used WAHIS, whereas others were already relatively experienced in using the system.

One participant, at the request of the Delegate of the country in question, had already benefited from a short, one-day training session on WAHIS provided by a member of staff at the OIE Sub-Regional Representation in Brussels. In fact, nine staff members at the various OIE Regional and Sub-Regional Representations have received training (in October 2013) to enable them to help WAHIS users in their region and familiarise them with the system (see *Bulletin*, No. 2014 1, p. 34). The OIE

therefore strongly encourages Focal Points for Animal Disease Notification to the OIE to contact the staff of their local OIE Representation if they would like assistance with preparing reports on the animal health situation in their country.

At the end of training, 94% of participants declared they were entirely satisfied with the workshop (its organisation, structure, and especially the content of the training). Ninety-nine percent of them found the training module on identifying errors in reports submitted to the OIE particularly useful and 95% appreciated the 'real life' scenarios with WAHIS and its web interface. When asked if they considered themselves capable of completing the various types of notification reports, they unanimously replied 'yes'. They were also appreciative of the exchanges they had had, both with other participants and with OIE staff. Given the geographical diversity of the participants, these discussions were considered useful, both at the personal level and in the interests of epidemiological and animal health. Lastly, all the participants praised the professionalism of the facilitators.



Regional workshop for OIE National Focal Points for Wildlife

N'Djamena, Chad, 14–16 January 2014



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Chadian senior officials at the opening ceremony. From left to right: acting Head of the OIE Scientific and Technical Department; Minister for the Environment; Minister for Water Resources; Minister for Pastoral Development and Animal Production; Minister for Agriculture; and OIE Regional Representative for Africa

A regional workshop for OIE National Focal Points for wildlife from French-speaking countries of Africa was held in N'Djamena from 14 to 16 January 2014. The workshop was attended by focal points from 20 of the 26 African countries invited.

This third round of training for OIE National Focal Points for wildlife was organised by the OIE Regional Representation for Africa, assisted by the OIE Animal Health Information Department and Scientific and Technical Department. The focal points benefited from the expertise of speakers from the Canadian Cooperative Wildlife Health Centre (CCWHC) and VetAgro Sup (France), together with that of the Director of the Boucle du Baoulé National Park and biosphere reserve (Mali).

The seminar addressed such important issues as: risk assessment; impact of poaching and international trade on wildlife in West and Central Africa; validation of diagnostic assays; and disease reporting.

Risk assessment is a useful contribution to multi-criteria analysis to aid decision-making and adopt a risk-reduction approach.

The presentation on the impact of poaching and international trade on wildlife in West and Central Africa



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aroused a great deal of interest and led to an exchange of experiences.

There was further clarification of the guidelines on principles and methods for future validation of diagnostic assays, which will be submitted to the World Assembly of OIE Delegates for adoption in 2014.

Interesting work was done on wildlife disease reporting using the WAHIS-Wild online system, and focal points found the exercises useful. At a future date, it would be worthwhile assessing how well the lessons have been learned.

There was also a review of: the role and terms of reference of National Focal Points for wildlife; networking; participation in other OIE activities; and the role of the OIE Working Group on Wildlife.

The Chadian authorities showed great interest in this event, with no fewer than four ministers attending the opening ceremony.

Europe

Regional information seminar for newly appointed OIE Delegates

Brussels, Belgium, 18–20 February 2014

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As part of its global programme to build the capacity of Veterinary Services, the OIE holds training seminars every two years in each region for newly appointed Delegates to the OIE, to provide them with all the information and tools they need to carry out their new duties fully and to help to improve good veterinary governance worldwide.

A totally new format was used for the OIE seminar for newly appointed Delegates in Europe, held in Brussels, in that it was extended to cover three full days (18–20 February 2014) to enable a number of topics of interest

to be addressed in depth; in particular, the OIE standard-setting and adoption process, which is the Delegates' core responsibility. Priority was given to the sharing of national experiences, to provide concrete examples to illustrate the OIE's lecture presentations, with experts from various countries presenting their success stories with the OIE PVS Pathway and OIE standard-setting. In addition, detailed presentations were given of some of the OIE tools available to Delegates: the 'A Z' vademecum; the Delegates' website; and the web interface of the

Participating countries

1. Albania*
2. Belgium
3. Cyprus*
4. Czech Republic
5. Estonia
6. Germany
7. Iceland*
8. Israel*
9. Italy
10. Kazakhstan*
11. Norway*
12. Poland
13. Portugal*
14. Romania*
15. Serbia*
16. Turkey*

* Newly appointed Delegate (or his/her representative)



OIE Regional Workshops for focal points and Information Seminars for new Delegates



praised by both the newly appointed and more experienced Delegates. The latter suggested that seminars for newly appointed Delegates should be opened up to all Delegates in the region as a matter of course, or else that annual refresher training sessions should be held for serving Delegates. These proposals will be explored in the light of the funding available.

The OIE wishes to extend its thanks to Belgium's Federal Agency for Food Safety (AFSCA) for helping to finance the seminar and facilitating its excellent organisation.

World Animal Health Information System (WAHIS).

While this seminar's extended format was targeted primarily at newly appointed Delegates, it was also opened up, on a voluntary and self-funded basis, to all OIE Delegates in Europe wishing to update their knowledge. A total of 16 countries

participated in the seminar (see Box).

OIE Deputy Director General, Dr Monique Eloit, also attended.

The participants' final evaluation underlined the usefulness of the seminar, in terms of both knowledge acquisition and networking between Delegates in the region, an aspect which was

All seminar documents (the agenda, list of participants and PowerPoint presentations) are available on the OIE regional website for Europe: www.rr-europe.oie.int.

Middle East

Regional Seminar for OIE National Focal Points for Animal Production Food Safety

Abu Dhabi, United Arab Emirates, 14–16 January 2014



© OIE/G. Yehia

A Regional Seminar for OIE National Focal Points for Animal Production Food Safety for countries in the Middle East was held in Abu Dhabi, the United Arab Emirates (UAE), from 14 to 16 January 2014. The seminar was funded by the OIE and the Abu Dhabi Food Control Agency.

Seven countries attended the seminar: Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia and UAE. A delegation from the UAE, mostly from a supporting institution, the Abu Dhabi Food Control Agency, also attended the meeting.



The seminar aimed at providing participants with knowledge on the rights, commitments and responsibilities of National Focal Points for Animal Production Food Safety in the standard-setting process and in compliance with the OIE international standards. It also included sessions focusing on the specific tasks of National Focal Points for Animal Production Food Safety.

During the seminar, several case studies related to the management of zoonotic food safety issues in the region were presented and discussed. These studies included verotoxigenic *Escherichia coli*, *Mycobacterium bovis*, brucellosis and toxoplasmosis, as well as salmonellosis and campylobacteriosis in poultry.

The work of WHO and the Codex Alimentarius in food safety, as well as their areas of collaboration with the OIE, were also presented. During a working-group session, participants discussed ways in which they are carrying out their responsibilities as Focal Points and also how they are cooperating with the Codex in their respective countries.

The seminar offered the opportunity to share experiences and begin discussions with representatives from other countries in the region. The participants seemed to very much appreciate the various topics presented and undertook to keep working for their countries to become more involved in the development and implementation of the OIE standards on animal production food safety.

Middle East

/ Africa

Inter-Regional Seminar for OIE National Focal Points for Animal Welfare

Amman, Jordan, 17–18 March 2014

OIE Improved Animal Welfare Programme (IAWP) Stakeholders' Workshop

Amman, Jordan, 19–20 March 2014

An Inter-Regional Seminar for OIE National Focal Points for Animal Welfare from the Middle East and North Africa was held in Amman on 17–18 March 2014, under the patronage of HRH Princess Alia bint Al Hussein and HRH Princess Iman bint Al Hussein.

The meeting discussed the progress of, and challenges and constraints to, the implementation of OIE animal welfare standards, the remaining steps to be taken for adoption of the regional animal welfare strategy (RAWS), and potential resources and support for improving animal welfare in the region.

Thirteen countries from both regions participated in the seminar: Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon,



HRH Princess Alia bint Al Hussein chairing the sessions of the Seminar for OIE National Focal Points for Animal Welfare

OIE Regional Workshops for focal points and Information Seminars for new Delegates

Morocco, Oman, Saudi Arabia, Syria, Tunisia, the United Arab Emirates and Yemen. Representatives from non-governmental organisations (NGOs) and other supporting foundations also took part.

The objectives of the seminar were:

- a) to achieve sustainable improvement in animal welfare
- b) to develop sustainable mechanisms for the coordination and promotion of animal welfare programmes, in accordance with regional priorities, and
- c) to establish alliances among key parties to facilitate the implementation of OIE standards.

Experts from the OIE and NGOs highlighted the need for Member Countries to adopt a national strategy that was regionally harmonised within a common plan. It was agreed that national strategies should include legislation, education and awareness programmes that enable effective implementation of the OIE animal welfare standards.

The current OIE standards on animal welfare and the future working programme for standard-setting were described during the seminar, alongside Member Country reports on standard implementation, lessons learned and future priorities.

Case studies on the implementation of animal welfare standards in a broiler chicken production system and on a camel dairy farm, as well as the application of the International Equestrian Federation (FEI) code of conduct in sporting competitions, were presented as examples of good welfare and sustainable farming practices

in the region. On the final day, the remaining steps required to adopt the Middle East regional animal welfare strategy were identified.

In reviewing progress on improving animal welfare in the region, the participants noted that:

- a) there has been a noticeable improvement in the national legislation of the majority of Member Countries to enable compliance with international standards, especially those that deal with transport and handling, stray-dog control and humane killing for slaughter
- b) stakeholders, including farmers, private sector, NGOs, academics and the veterinary profession, are actively involved in Member Countries' animal welfare programmes
- c) the social and commercial benefits of improving animal welfare in the region are well accepted

d) effective and professional coordination and communication between countries in the region are being developed, via a sub-regional committee and working groups

e) the implementation plan for the regional strategy has been endorsed by the OIE Regional Commission for the Middle East, as well as the OIE World Assembly of Delegates.

After the seminar, there were two days of presentations by participants of the Egypt and Jordan Stakeholders' Workshop on the OIE Improved Animal Welfare Programme (IAWP)¹, to demonstrate what they had learned.



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Dr Hassan Aidaros (Egypt) chairing the sessions of the IAWP Stakeholders' Workshop with the trainees from Egypt and Jordan

¹ See details of the programme in *Bulletin* No. 2014–1, p. 31

meetings and visits

Names and positions of OIE permanent staff who participated in meetings or visits from January to March 2014

OIE Headquarters

General Directorate

Bernard Vallat Director General
 Alex Thiermann Adviser of the Director General and President of the OIE Terrestrial Animal Health Standards Commission

Catherine Bertrand-Ferrandis Head of the Communication Unit
 Marina Domingo Monsonis Chargée de mission
 Yael Farhi Chargée de mission
 Monique Eloit Deputy Director General (Administration, Management, Human Resources and Regional Activities)

Alain Dehove Coordinator of the World Animal Health and Welfare Fund

Jean-Paul Pradère Chargé de mission – Animal Health Economics

Julie Macé Project Officer (World Fund)

Emily Tagliaro Project Officer (World Fund)

Victoria Wong Project Officer (World Fund)

Alix Weng Head of the Budget and Financial Unit

Jean-Pierre Croiziers Head of the Human Resources Unit

Gilles Seigneurin Head of the Accounts Unit

Administration, Logistics and Publications Department

Daniel Chaisemartin Head of Department

Bertrand Flahault 1st Deputy Head of Department and Head of the Systems Management and Events Unit

Ingrid Contreras Arias Trilingual Conference Coordinator

Irène Jeutner Bilingual Assistant Travel Manager

Annie Souyri 2nd Deputy Head of Department and Head of the Publications Unit

Tamara Benicasa Marketing and Sales Manager

Animal Health Information Department

Karim Ben Jebara Head of Department (until 31 January 2014)

Paula Cáceres Soto Deputy Head of Department (until 31 January 2014) and Acting Head of Department (from 1 February 2014)

Marija Popovic Chargée de mission

Natalja Lambergeon Animal Health Information Technician

Lina Awada Veterinary Epidemiologist
 Daria Di Sabatino Chargée de mission
 Aziza Yassin Mustafa Chargée de mission
 Margarita Alonso Translation/Editing Assistant

International Trade Department

Derek Belton Head of Department
 Gillian Mylrea Deputy Head of Department
 Rastislav Kolesar Animal Welfare Coordinator
 Tomasz Grudnik Chargé de mission
 Maria Elaine Joy Villareal Chargée de mission
 Masatsugu Okita Chargé de mission
 Leopoldo Humberto Stuardo Escobar Chargé de mission
 Claudia Campos Bilingual Secretary

Scientific and Technical Department

Elisabeth Erlacher-Vindel Acting Head of Department
 Joseph Domenech Adviser
 Susanne Münstermann Project Officer
 Kiok Hong Chargé de mission
 François Diaz Chargé de mission
 Keith Hamilton Officer in charge of the Reduction of Biological Threats

Laure Weber-Vintzel Officer in charge of the Recognition of Countries' Animal Disease Status
 Jennifer Lasley Project Coordinator

Gounalan Pavade OFFLU Technical Assistant

Dietrich Rassow Veterinarian Adviser

Min Kyung Park Chargée de mission

Dawid Visser Biosecurity Officer

Barbara Freischem Chargée de mission

Simona Forcella Chargée de mission

Gregorio José Torres Peñalver Chargé de mission

Regional Activities Department

François Caya Head of Department

Mara Elma González Ortiz Deputy Head of Department

Maud Carron Chargée de mission

Marie Edan Chargée de mission

Valentyna Sharandak Chargée de mission

David Sherman Chargé de mission

Martial Petitclerc Chargé de mission

OIE Regional and Sub-Regional Representations

Africa

Yacouba Samaké	Regional Representative for Africa (Bamako, Mali)	Tikiri Wijayathilaka	Regional Project Coordinator (Tokyo, Japan)
Daniel Bourzat	Adviser to the Regional Representative for Africa (Bamako, Mali)	Hnin Thidar Myint	Regional Veterinary Officer (Tokyo, Japan)
Youma N'Diaye	Accountant (Bamako, Mali)	Kanako Koike	Accountant (Tokyo, Japan)
Mariam Minta	Secretary (Bamako, Mali)	Takako Hasegawa	Secretary (Tokyo, Japan)
Aïssata Bagayoko	Secretary (Bamako, Mali)	Chiharu Izumi	Secretary (Tokyo, Japan)
Alou Sangaré	Administrative Assistant (Bamako, Mali)	Ronello Abila	Sub-Regional Representative for South-East Asia (Bangkok, Thailand)
Neo Mapitse	Sub-Regional Representative for Southern Africa (Gaborone, Botswana)	Dirk Van Aken	Deputy Sub-Regional Representative for South-East Asia (Bangkok, Thailand)
Mpho Mantsho	Administrative and Financial Assistant (Gaborone, Botswana)	Agnès Poirier	Programme Coordinator (HPED) (Bangkok, Thailand)
Nomsa Thekiso	Secretary (Gaborone, Botswana)	Jaruwan Kampa	Programme Coordinator (IDENTIFY) (Bangkok, Thailand)
Rachid Bouguedour	Sub-Regional Representative for North Africa (Tunis, Tunisia)	Mary Joy Gordoncillo	Science and One Health Coordinator (Bangkok, Thailand)
Vincent Brioudes	Programme Officer (Tunis, Tunisia)	Cecilia Dy	'M&E' Coordinator and Communication Officer (Bangkok, Thailand)
Alessandro Ripani	Programme Officer (Tunis, Tunisia) (from 17 February 2014)	Karanvir Kukreja	Project Officer (Bangkok, Thailand)
Ines Guitouni	Administrative and Financial Assistant (Tunis, Tunisia)	Barbara Tornimbene	Project Officer-Epidemiologist (Bangkok, Thailand)
Walter Masiga	Sub-Regional Representative for Eastern Africa and the Horn of Africa (Nairobi, Kenya)	Phungpit Kuruchittham	Operations Manager (Bangkok, Thailand)
Patrick Bastiaensen	Programme Officer (Nairobi, Kenya)	Melada Ruengjumroonath	Financial Officer (Bangkok, Thailand)
Grace Omwega	Administrative and Financial Assistant (Nairobi, Kenya)	Preechaya Srithep	Administrative Officer (Bangkok, Thailand)
Loise Ndungu	Secretary (Nairobi, Kenya)		

Americas

Luis Osvaldo Barcos	Regional Representative for the Americas (Buenos Aires, Argentina)	Nikola T. Belev	Regional Representative for Eastern Europe (Sofia, Bulgaria)
Martín Minassian	Technical Assistant (Buenos Aires, Argentina)	Rina Kostova	Secretary (Sofia, Bulgaria)
Alicia Palmas	Secretary (Buenos Aires, Argentina) (until 31 March 2014)	Aleksandra Miteva	Technical Assistant (Sofia, Bulgaria)
Alina Gutiérrez Camacho	Secretary (Buenos Aires, Argentina) (from 1 March 2014)	Kazimieras Lukauskas	Regional Representative in Moscow (Russia)
Leandro Barcos	Administrative Assistant (Buenos Aires, Argentina)	Ekaterina Panina	Technical and Administrative Assistant (Moscow, Russia)
Montserrat Arroyo Kuribreña	Sub-Regional Representative for Central America (Panama City, Panama)	Askar Kozhayev	Technical Assistant (Astana, Kazakhstan)
Alina Gutiérrez Camacho	Secretary (Panama City, Panama) (until 28 February 2014)	Nadège Leboucq	Sub-Regional Representative in Brussels (Belgium)
Lexy Castro de Ceballos	Secretary (Panama City, Panama) (from 1 February 2014)	Stéphane de La Rocque	Animal Health Specialist (Brussels, Belgium)
		Stanislav Ralchev	Technical Assistant (Brussels, Belgium)

Asia and the Pacific

Hirofumi Kugita	Regional Representative for Asia and the Pacific (Tokyo, Japan)	Middle East	
Tomoko Ishibashi	Deputy Regional Representative for Asia and the Pacific (Tokyo, Japan)	Ghazi Yehia	Regional Representative for the Middle East (Beirut, Lebanon)
Chantane Buranathai	Regional Project Coordinator (Tokyo, Japan)	Mustapha Mestom	Consultant (Beirut, Lebanon)
		Ali El Romeh	Consultant (Beirut, Lebanon)
		Rita Rizk	Trilingual Secretary (Beirut, Lebanon)
		Mahmoud Ghaddaf	Assistant (Beirut, Lebanon)
		Khodr Rejeili	Assistant (Beirut, Lebanon)
		Tony Atallah	Assistant (Beirut, Lebanon)

Names and positions of experts who represented the OIE in meetings or visits from January to March 2014

Jacques Acar	OIE Senior Expert	Botlhe Michael Modisane	Member of the OIE Council and Delegate of South Africa to the OIE
Ali Abdullah Al-Sahmi	Member of the OIE Council and Delegate of Oman to the OIE	Gérard Moulin	OIE Expert, OIE Collaborating Centre for Veterinary Medicinal Products (Fougères, France)
Etienne Bonbon	Vice-President of the OIE Terrestrial Animal Health Standards Commission	Gardner Murray	OIE Special Adviser
John Clifford	Member of the OIE Council and Delegate of the United States of America to the OIE	Evgeny Nepoklonov	Member of the OIE Council and Delegate of Russia to the OIE
Susan Corning	OIE Consultant	Mark Schipp	Member of the OIE Council and Delegate of Australia to the OIE
Carlos A. Correa Messuti	Past President of the World Assembly of OIE Delegates and Delegate of Uruguay to the OIE	Karin Schwabenbauer	President of the World Assembly of OIE Delegates and Delegate of Germany to the OIE
Toshiro Kawashima	Member of the OIE Council and Delegate of Japan to the OIE	Michel Thibier	OIE Expert

List of abbreviations

AAVMC Association of American Veterinary Medical Colleges	BBSRC Biotechnology and Biological Sciences Research Council	CVA Commonwealth Veterinary Association	EDFZ Equine Disease Free Zone
ACP African, Caribbean and Pacific	BTSF Better Training for Safer Food (programme)	DFZ Disease Free Zoning	EFSA European Food Safety Authority
ADB Asian Development Bank	BWC Biological Weapons Convention	DG DEVC0 Directorate General for Development and Cooperation of the European Commission	EIO Engaging Intergovernmental Organizations
AfriVIP African Veterinary Information Portal	CALLISTO Companion Animals multisectorial interprofessional and Interdisciplinary Strategic Think tank On zoonoses	DG SANCO Directorate General for Health and Consumers of the European Commission	EMA European Medicines Agency
ANAW Africa Network for Animal Welfare	CBPP Contagious bovine pleuropneumonia	DLD Department of Livestock Development (Thailand)	ESVAC European Surveillance of Veterinary Antimicrobial Consumption
APHCA Animal Production and Health Commission for Asia and the Pacific	CCFICS Codex Committee on Food Import and Export Inspection and Certification Systems	EAG Expert Advisory Group	EU European Union
AREB Asian Rabies Expert Bureau	CIRAD French Agricultural Research Centre for International Development	EBL Enzootic bovine leucosis	FAO Food and Agriculture Organization of the United Nations
ASF African swine fever	CMC-AH Crisis Management Centre-Animal Health	EC European Commission	FAZD National Center for Foreign Animal and Zoonotic Disease Defense (United States)
AU-IBAR African Union-Interafrican Bureau for Animal Resources	COLEACP Europe-Africa-Caribbean-Pacific Liaison Committee	ECOWAS Economic Community of West African States	FEEVA Federation of European Equine Veterinary Associations
AWARE Animal Welfare Research in an Enlarged Europe (European Commission funded project)		EDES EU-ACP Development of SPS Systems	FEI International Equestrian Federation

List of abbreviations (contd)

FMD Foot and mouth disease	IHR International Health Regulations	RAWAPEA Regional Animal Welfare Action Plan for Eastern Africa	UMA Arab Maghreb Union
GALVMed Global Alliance for Livestock Veterinary Medicines	IICA Inter-American Institute for Cooperation on Agriculture	RAWS Regional Animal Welfare Strategy	US United States
GF-TADs FAO/OIE Global Framework for the Progressive Control of Transboundary Animal Diseases	ILRI International Livestock Research Institute	REIS SADC Regional Economic Integration Support	USAID United States Agency for International Development
GHI Global Health Initiative	JTF Japan Trust Fund	REMESA Mediterranean Animal Health Network	USDA United States Department of Agriculture
GLEWS Global Early Warning System	LiDeSA Livestock Development Strategy for Africa	RESEPI Regional Network of National Epidemiological Surveillance Systems for Highly Pathogenic Avian Influenza and Other Priority Diseases	VETGOV 'Reinforcing Veterinary Governance in Africa' (EU-funded project implemented by AU-IBAR in partnership with OIE and FAO)
GREASE Management of Emerging Risks in South-East Asia	M&E Monitoring & Evaluation	RESOLAB Western and Central Africa Veterinary Laboratory Network for Avian Influenza and Other Transboundary Diseases	VMERGE Risk of emerging viral vector-borne diseases (CIRAD research project)
HHP High-Health High-Performance (FEI concept for horses)	MERS-CoV Middle East Respiratory Syndrome Coronavirus	SADC Southern African Development Community	WAEMU West African Economic and Monetary Union
HPED European Union-funded cooperation programme on highly pathogenic and emerging and re-emerging diseases in Asia	NRCPC National Rabies Committee of the Philippines	SEACFMD South-East Asia and China Foot and Mouth Disease Campaign	WAHIS OIE World Animal Health Information System
IAWP OIE Improved Animal Welfare Programme	OFFLU Joint OIE/FAO worldwide scientific network for the control of animal influenzas	SMP-AH Standard Methods and Procedures in Animal Health (AU-IBAR/USAID Project)	WB World Bank
ICIPE International Centre for Insect Pathology and Ecology	OIE World Organisation for Animal Health	SPS Sanitary and phytosanitary measures	WCO World Customs Organization
IDENTIFY Laboratory Capacity Building and Networking Project	PAAWA Pan-African Animal Welfare Alliance	STDF Standards and Trade Development Facility	WFO World Farmers' Organisation
IETS International Embryo Transfer Society	PAN-SPSO Participation of African Nations in Sanitary and Phytosanitary Standard-setting Organisations	TADs Transboundary animal diseases	WSPA World Society for the Protection of Animals
IFHA International Federation of Horseracing Authorities	PPR Peste des petits ruminants	TAIEX Technical Assistance and Information Exchange Instrument	WTO World Trade Organization
IGAD Intergovernmental Authority on Development	PRP Partners for Rabies Prevention	ZELS Zoonoses and Emerging Livestock Systems	



meetings and visits

January 2014

Title of the event	Place	Date	Participants
Workshop on Veterinary Curricula Harmonisation for Integration of 'One Health' Concepts	Hanoi, Vietnam	6–7 January	Dr D. Van Aken
Advisory mission to the Directorate General of Veterinary Services and the Ministry of Livestock	Niamey, Niger	6–10 January	Dr D. Bourzat
40th IETS Annual Conference	Reno, United States	9–15 January	Prof. M. Thibier
Meeting with DG DEVCO (European Commission)	Brussels, Belgium	10 January	Dr E. Bonbon & Dr A. Dehove
Veterinary Diagnostic Laboratory Strategic Planning Meeting	Yangon, Myanmar	12–18 January	Dr J. Kampa & Ms M. Ruengjumroonath
Meetings on HHP Health Certification and HHP Specific Diseases	OIE Headquarters, Paris, France	13 and 17 January	Dr S. Münstermann
1st Training Session of Improved Animal Welfare Programme in Philippines	Angeles, Philippines	13–16 January	Dr T. Grudnik & Dr M.E.J. Villareal
1st Training Session of Improved Animal Welfare Programme in Jordan and Egypt	Amman, Jordan	13–17 January	Dr R. Kolesar
5th Inter-Agency Liaison Group Meeting on Invasive Alien Species	Nairobi, Kenya	14 January	Dr M. Okita
Meeting of the 2nd Expert Advisory Group (EAG II) of the CALLISTO Project	Brussels, Belgium	14 January	Dr S. Ralchev
Regional Training Workshop for OIE National Focal Points for Wildlife for French-speaking African countries (3rd cycle)	N'Djamena, Chad	14–16 January	Dr K. Ben Jebara, Dr M. Popovic, Dr E. Erlacher-Vindel, Dr Y. Samaké, Dr D. Bourzat, Ms A. Bagayoko & Dr R. Bouguedour
Regional Seminar for OIE National Focal Points for Animal Production Food Safety	Abu Dhabi, United Arab Emirates	14–16 January	Dr G. Mylrea, Dr G. Yehia, Dr A. El Romeh & Ms R. Rizk
FMD vaccination and public awareness campaign and efficiency study, under the OIE/JTF Project on FMD Control in Asia	Naypyidaw, Myanmar	14–18 January	Dr C. Buranathai
Meeting with the OIE Reference Laboratory staff for highly pathogenic avian influenza and low pathogenic avian influenza	Sapporo, Japan	15 January	Dr H. Kugita & Dr H. Thidar Myint
Meeting with the Minister of Agriculture of Russia	Berlin, Germany	17 January	Dr B. Vallat & Prof. K. Lukauskas
Meeting with the Minister of Agriculture of Estonia	Berlin, Germany	17 January	Prof. K. Lukauskas
International Green Week 2014	Berlin, Germany	17–26 January	Dr K. Schwabenbauer, Dr B. Vallat, Dr E. Bonbon, Dr C. Bertrand-Ferrandis, Dr Y. Farhi, Ms I. Jeutner, Dr S. Münstermann, Dr D. Rassow, Dr B. Freischem & Prof. K. Lukauskas
Meeting with the State Secretary and the Director of Foreign Affairs of the Ministry of Agriculture of Latvia – Meeting with the Minister of Agriculture of Lithuania	Berlin, Germany	18 January	Prof. K. Lukauskas
Quality Management System Meeting in the Veterinary Diagnostic Laboratories	Yangon, Myanmar	18–24 January	Dr J. Kampa



meetings and visits

January 2014 (contd)

Title of the event	Place	Date	Participants
Diamond Jubilee Celebration (1938–2014) of the Faculty of Veterinary Medicine of the University of Khartoum	Khartoum, Sudan	19–22 January	Dr W. Masiga
2nd consultation for Cambodia National FMD Plan and provincial veterinarian meeting	Siem Riep, Cambodia	19–23 January	Dr K. Kukreja & Dr B. Tornimbene
10th meeting of the Asian Rabies Expert Bureau (AREB)	Manila, Philippines	20–23 January	Dr R. Abila
Hand-over Ceremony for FMD vaccine and materials and Medal Awarding Ceremony	Xiangkhouang, Laos	21 January	Dr C. Buranathai
BWC Symposium on 'The Biological Weapons Disarmament', organised by the Qatar National Committee for the Prohibition of Weapons, and informal meeting about MERS-CoV	Doha, Qatar	21–22 January	Dr K. Hamilton
Inception workshop of the AU-IBAR/FAO Technical Cooperation Programme project on 'Emergency assistance for surveillance of influenza A(H7N9) virus in poultry and other animal populations in low to moderate risk countries in Africa' (TCP/RAF/3408 E)	Nairobi, Kenya	21–22 January	Dr P. Bastiaensen
Preparatory mission for the organisation of the OIE Global Conference on Aquatic Animal Health, to be held in Ho Chi Minh City, Vietnam, from 20 to 22 January 2015	Ho Chi Minh City and Hanoi, Vietnam	21–23 January	Dr D. Chaisemartin, Ms I. Contreras Arias & Dr H. Kugita
Training course on animal welfare in pig production, in the framework of the BTSF initiative	Teramo, Italy	21–24 January	Dr T. Grudnik
Following the invitation of the official authorities of India, meeting with the Minister for Agriculture, and visit to the chain values of vaccines and competition horses	New Delhi and Mumbai, India	21–25 January	Dr B. Vallat
SADC Livestock Coordination Meeting and Regional Technical Partners	Gaborone, Botswana	22 January	Dr N. Mapitse
EFSA Expert Workshop on ASF Risks	Parma, Italy	22–23 January	Dr D. Rassow
FMD vaccination and public awareness campaign and efficiency study, under the OIE/JTF Project on FMD Control in Asia	Xiangkhouang, Laos	22–24 January	Dr C. Buranathai
Meeting on rabies with the Bureau of Animal Industry (BAI) and Regional Officers	Manila, Philippines	23 January	Dr R. Abila & Dr M.J. Gordoncillo
STDF Policy Committee Meeting	WTO Headquarters, Geneva, Switzerland	24 January	Dr A. Thiermann
Meeting of National Rabies Committee of the Philippines (NRCP)	Manila, Philippines	24 January	Dr R. Abila & Dr M.J. Gordoncillo
Animal Health Training Workshop, organised by the SADC REIS Programme	Gaborone, Botswana	28–31 January	Dr N. Mapitse
Meeting with the high authorities of the FAO to discuss the common objectives and the evolution of collaboration between FAO and OIE	FAO Headquarters, Rome, Italy	29 January	Dr B. Vallat, Dr A. Dehove & Dr J. Domenech



meetings and visits

January 2014 (contd)

Title of the event	Place	Date	Participants
Coordination meeting with the Disease Free Zoning (DFZ) Task Force	Directorate of Veterinary Services, Nairobi, Kenya	29 January	Dr P. Bastiaensen
Meeting between the FAO, IICA and the Ministry of Agricultural Development of Panama regarding the strategy for the control and eradication of bovine brucellosis in Central America	Panama City, Panama	29 January	Dr M. Arroyo Kuribreña
SADC Sanitary and Phytosanitary Coordinating Committee Meeting and Livestock Technical Committee Meeting	Gaborone, Botswana	29–30 January	Dr N. Mapitse
1st Regional Task Force Meeting on Pastoralism (World Bank Project)	Ouagadougou, Burkina Faso	30–31 January	Dr M. Eloit, Dr Y. Samaké & Dr D. Bourzat

meetings and visits

February 2014

Title of the event	Place	Date	Participants
1st International conference and annual meeting of the Myanmar Veterinary Association	Yangon, Myanmar	2–3 February	Dr R. Abila
GF-TADs Working Group Meeting on PPR	Rome, Italy	3 February	Dr J. Domenech & Dr S. Münstermann
CCFICS Workshop on 'Burden of Multiple Questionnaires Directed at Exporting Countries for Initiating Market Access'	Brussels, Belgium	3 February	Dr S. Ralchev
Annual IDENTIFY Tripartite Technical Meeting	OIE Headquarters, Paris, France	3 and 5 February	Dr J. Lasley & Dr S. Corning
GF-TADs Working Group Meeting on FMD	Rome, Italy	4 February	Dr J. Domenech
ESVAC Annual Network Meeting 2014	London, United Kingdom	4–5 February	Dr F. Diaz & Dr G. Moulin
CCFICS Workshop on 'Monitoring Regulatory Performance of National Food Control Systems'	Brussels, Belgium	4–5 February	Dr S. Ralchev
ESVAC Annual Stakeholders Meeting 2014	London, United Kingdom	5 February	Dr F. Diaz & Dr G. Moulin
Implementing Partners Technical Coordination Meeting of the PAN-SPSO Project Consolidation Phase	Nairobi, Kenya	5 February	Dr P. Bastiaensen
Consultative Meeting for Technical Seminar on PPR/FMD for SADC Region	Gaborone, Botswana	5 February	Dr N. Mapitse



meetings and visits

February 2014 (contd)

Title of the event	Place	Date	Participants
20th FAO/OIE/WHO Executive Tripartite Annual Meeting and GLEWS Steering Committee Meeting	WHO Headquarters, Geneva, Switzerland	5–6 February	Dr B. Vallat, Dr A. Dehove, Dr D. Chaisemartin, Dr M. Popovic, Dr E. Erlacher-Vindel, Dr J. Domenech & Dr S. de La Rocque
Validation workshop of a study for drafting a regional strategy as well as coordinated regional programmes for the control of CBPP in WAEMU	Ouagadougou, Burkina Faso	5–7 February	Dr Y. Samaké
4th Steering Committee Meeting of the PAN-SPSO Project Consolidation Phase (Phase 2)	Nairobi, Kenya	6 February	Dr P. Bastiaensen
1st Steering Group Meeting for the formulation of the Livestock Development Strategy for Africa (LiDeSA), convened by AU-IBAR	Nairobi, Kenya	7 February	Dr W. Masiga & Dr P. Bastiaensen
Verification mission of livestock quarantine practices in Ethiopia and 2nd Quarantine Technical Working Group Meeting, in the framework of the SMP-AH Project	Addis Ababa and Mille, Ethiopia	9–14 February	Dr W. Masiga
Working Group Meeting for the preparation of a Regional Animal Welfare Action Plan for Eastern Africa (RAWAPEA), convened by PAAWA-ANAW	Nairobi, Kenya	10 February	Dr P. Bastiaensen
Final meeting of the AWARE Project	Zagreb, Croatia	10 February	Dr S. Ralchev
International scientific and technical conference on 'Problems in the prevention and diagnosis of brucellosis in farm animals', under the auspices of the Committee for Veterinary Control and Surveillance of the Ministry of Agriculture of Kazakhstan	Almaty, Kazakhstan	11–12 February	Dr A. Kozhayev
Preparatory mission for the organisation of the Global Conference of OIE Reference Laboratories and Collaborating Centres, to be held in Incheon–Seoul, Republic of Korea, from 14 to 16 October 2014	Incheon, Rep. of Korea	11–13 February	Dr D. Chaisemartin, Ms I. Contreras Arias & Dr T. Ishibashi
Conference on the achievements of the EU strategy for the welfare of animals 2012–2015: Mid-term review, organised by DG SANCO	Brussels, Belgium	12 February	Dr M. Eloit, Dr R. Kolesar & Dr S. Ralchev
Chatham House Meeting: 'Global Health Security – Disease Surveillance Data Sharing'	London, United Kingdom	12–13 February	Dr A. Dehove
Inception and Methodological Workshop of the initiative on 'Promoting regional trade in livestock and meat within ECOWAS area', organised by the World Bank	Abidjan, Côte d'Ivoire	12–14 February	Dr V. Brioude
11th Meeting of the Upper Mekong Working Group on FMD Zoning and Animal Movement Management	Bokeo, Laos	12–14 February	Dr C. Buranathai, Dr R. Abila, Dr M.J. Gordoncillo, Dr K. Kukreja, Dr B. Tornimbene, Ms P. Kuruchittham & Dr G. Murray
Official speech to the meeting on the launch of a Global Health Security Agenda	Geneva, Switzerland	13 February	Dr B. Vallat



meetings and visits

February 2014 (contd)

Title of the event	Place	Date	Participants
GHI Workshop on 'One Health' Action for Addressing Complex Challenges	Chiang Mai, Thailand	13 February	Dr A. Poirier
Teaching workshop for the Veterinary Faculty of Chiang Mai University as a part of the veterinary education twinning project	Chiang Mai, Thailand	14 February	Dr A. Poirier
Visit at the invitation of the official authorities of Hong Kong and meeting with the State Secretary for Food and Health	Hong Kong, Special Administrative Region of P.R. China	17 February	Dr B. Vallat
Conference on 'Practical Solutions for Humane and Comprehensive Canine Rabies Control and Elimination', organised by the Asia Canine Protection Alliance	Bangkok, Thailand	17 February	Dr A. Poirier & Dr M.J. Gordoncillo
Steering Group Meeting of the Georgia's National Animal Health Programme (NAHP)	Tbilisi, Georgia	17 February	Prof. K. Lukauskas
3rd OIE Annual Regional Deans Meeting on 'Evolving Veterinary Education in Southern and Eastern Africa for the benefit of the region and for a safer world'	Pretoria, South Africa	17–18 February	Dr N. Mapitse & Dr W. Masiga
Inception of the first veterinary online open educational resources platform in Africa: 'African Veterinary Information Portal (AfriVIP)'	Pretoria, South Africa	18 February	Dr N. Mapitse & Dr W. Masiga
Conference on 'Averting Farmageddon: Sustainable food for all', hosted by the Greek Presidency of the Council of the EU and Compassion in World Farming	Brussels, Belgium	18 February	Dr S. Ralchev
Regional Workshop for Asia, the Far East and Oceania: 'Facilitation of International Competition Horse Movement', co-organised by OIE, FEI and IFHA	Hong Kong, Special Administrative Region of P.R. China	18–20 February	Dr B. Vallat, Dr S. Münstermann, Dr H. Kugita, Dr T. Ishibashi & Dr G. Murray
OIE Regional (Europe) Information Seminar for Recently Appointed OIE Delegates	Brussels, Belgium	18–20 February	Dr M. Eloit, Dr G. Mylrea, Dr M.E. González Ortiz, Prof. Dr N.T. Belev, Prof. K. Lukauskas, Dr A. Kozhayev, Dr N. Leboucq & Dr S. Ralchev
VMERGE Kick-off meeting	Rabat, Morocco	18–20 February	Dr J. Domenech
OIE Training Workshop on WAHIS for Recently Appointed National Focal Points for Animal Disease Notification to the OIE	OIE Headquarters, Paris, France	18–20 February	Dr P. Cáceres Soto, Dr M. Popovic, Ms N. Lambergeon, Dr L. Awada, Dr D. Di Sabatino, Dr A. Yassin Mustafa, Ms M. Alonso & Dr F. Caya
Inception workshop of the 'Improving Animal Disease Surveillance in Support of Trade in IGAD Member States' Project	Djibouti, Djibouti	18–20 February	Dr P. Bastiaensen
Training course on animal welfare at the time of killing in slaughterhouses, in the framework of the BTSF initiative	Teramo, Italy	18–21 February	Dr R. Kolesar

meetings and visits

February 2014 (contd)

Title of the event	Place	Date	Participants
81st Philippine Veterinary Medical Association Conference and Annual Convention	Puerto Princesa, Philippines	18–22 February	Dr D. Van Aken
Joint workshop on West Nile virus and other related mosquito-borne viruses in Europe	Madrid, Spain	19 February	Dr S. Forcella
18th Asian Regional Meeting of the CVA and International Animal Health and Welfare Conference including Satellite Conferences on 'Progress in Animal Welfare' and 'Canine Rabies Control'	Bangalore, India	21–24 February	Dr H. Kugita
FEEVA General Assembly	Roissy-en-France, France	22 February	Dr N. Leboucq
International Exhibition of Agriculture 2014	Paris, France	22 February – 2 March	Dr A. Thiermann, Dr C. Bertrand-Ferrandis, Dr Y. Farhi, Ms I. Jeutner, Ms A. Souyri, Ms T. Benicasa, Dr L.H. Stuardo Escobar, Ms C. Campos, Dr F. Diaz, Dr S. Forcella, Dr M. Carron & Dr N. Leboucq
Coordination mission for the 'Training workshop on Laboratory Quality Assurance: Internal Quality Control and Standardisation of Diagnostic Tests' of the Australian Animal Health Laboratory	Melbourne, Australia	23–27 February	Dr J. Kampa
2nd Training Session of Improved Animal Welfare Programme in Jordan	Aqaba, Jordan	23–28 February	Dr R. Kolesar
Joint FAO/ILRI Conference: new initiatives on food safety in Africa	Kabete, Nairobi, Kenya	24 February	Dr W. Masiga & Dr P. Bastiaensen
FEI Veterinary Committee Meeting	Lausanne, Switzerland	24–25 February	Dr S. Münstermann
2nd Training Session of Improved Animal Welfare Programme in Philippines	Baras, Philippines	24–28 February	Dr T. Grudnik & Dr M.E.J. Villareal
5th Joint FAO/OIE Rinderpest Advisory Committee Meeting	FAO Headquarters, Rome, Italy	25–26 February	Dr D. Visser
G8 Global Partnership against the Spread of Weapons and Materials of Mass Destruction	Saint Petersburg, Russia	25–28 February	Dr K. Hamilton
AU-IBAR Write Shop for a Continental Programme to Establish an Integrated Coordination Mechanisms for the Control of TADs and Zoonoses	Naivasha, Kenya	25–28 February	Dr W. Masiga & Dr P. Bastiaensen
OIE Council's Meeting	OIE Headquarters, Paris, France	26–28 February	Dr K. Schwabenbauer, Dr C.A. Correa Messuti, Dr B. Vallat, Dr M. Eloit, Dr A.A. Al-Sahmi, Dr J. Clifford, Dr T. Kawashima, Dr B.M. Modisane, Dr E. Nepoklonov & Dr M. Schipp
Mission of the EC Community Veterinary Emergency Team on ASF	Warsaw, Poland	26–28 February	Prof. K. Lukauskas
USDA: Interdepartmental round table with US government agencies	Washington, DC, United States	27 February	Dr A. Dehove



meetings and visits

February 2014 (contd)

Title of the event	Place	Date	Participants
Scientific Network for Zoonoses Monitoring Data – Antimicrobial Resistance 3rd Meeting	Parma, Italy	27–28 February	Dr D. Chaisemartin
Western Balkan regional meeting of animal welfare experts	Terme Tuhelj, Croatia	27–28 February	Dr S. Ralchev
Workshop on PVS Pathway outputs for WB experts	World Bank Headquarters, Washington, DC, United States	28 February	Dr A. Dehove
EMA consultative meeting with stakeholders – Request from the EC for advice on the impact on public and animal health of the use of antibiotics in animals	London, United Kingdom	28 February	Dr F. Diaz, Dr N. Leboucq & Dr G. Moulin
EU Animal Health and Welfare Research Collaborative Working Group (CGW): CGW Sub-Group Meeting on 'Foresight and Programming Unit' and CGW Consortium	Brussels, Belgium	28 February	Dr B. Freischem

meetings and visits

March 2014

Title of the event	Place	Date	Participants
Meeting of the Technical Working Group on regional case control study of MERS-CoV	Riyadh, Saudi Arabia	2–3 March	Dr G. Pavade
GF-TADs inter-regional consultative meeting on progress in the FMD and PPR situation	Amman, Jordan	2–4 March	Dr J. Domenech, Dr S. Münstermann, Dr R. Bouguedour, Dr G. Yehia, Dr A. El Romeh & Ms R. Rizk
Meeting with Members of the WSPA Board of Directors	London, United Kingdom	3 March	Dr B. Vallat
Discussion on projects with FAZD Center staff, visit to the College of Veterinary Medicine and Biomedical Sciences of the Texas A&M University and participation to the seminar: 'An Overview of OIE and World Bank Livestock Activities'	College Station, United States	3 March	Dr A. Dehove
9th EFSA Bovine Tuberculosis Working Group Meeting with hearing experts	EFSA Headquarters, Parma, Italy	3–4 March	Dr S. Forcella
OIE Equine Influenza Vaccine Composition Expert Surveillance Panel Meeting	OIE Headquarters, Paris, France	4 March	Dr S. Münstermann & Dr G. Pavade
Technical consultation meeting on influenza, in the framework of the OIE/JTF Project for Controlling Zoonoses in Asia under 'One Health' Concept	Tokyo, Japan	4 March	Dr H. Kugita, Dr T. Ishibashi, Dr C. Buranathai, Dr T. Wijayathilaka & Dr H. Thidar Myint

meetings and visits

March 2014 (contd)

Title of the event	Place	Date	Participants
CMC-AH Mission on FMD in Mongolia	Ulan Bator, Mongolia	4–13 March	Dr G.J. Torres Peñalver
<i>Ad hoc</i> Technical Workshop on Rift Valley Fever Vaccine and Companion Diagnostics	FAO Headquarters, Rome, Italy	5–7 March	Dr J. Domenech & Dr S. Münstermann
3rd Informal coordination meeting of the VETGOV project implementation partners: AU-IBAR, FAO and OIE	AU-IBAR Headquarters, Nairobi, Kenya	6 March	Dr P. Bastiaensen
Brainstorming meeting for the ComAcross ('Companion Approach for Cross-Sectoral Collaboration in Health Risks Management in South-East Asia') Project	Bangkok, Thailand	6 March	Dr A. Poirier & Dr M.J. Gordoncillo
BBSRC Zoonoses and Emerging Livestock Systems (ZELS) 2013 Full Stage Review of Proposals	London, United Kingdom	10–11 March	Dr K. Hamilton
TAIEX National Workshop on EU legal framework on animal protection	Baku, Azerbaijan	10–11 March	Dr N. Leboucq
EFSA Technical Hearing on EBL	Parma, Italy	10–12 March	Dr A. Thiermann
1st meeting of the WCO Working Group on the WTO Agreement on Trade Facilitation	Brussels, Belgium	11–12 March	Dr D. Belton
Official country visit to the veterinary authority of the Union of the Comoros	Moroni, Comoros	11–13 March	Dr P. Bastiaensen
20th meeting of the OIE Sub-Commission for FMD Control in South-East Asia and China, back to back with the 4th meeting of OIE Delegates for South-East Asia	Naypyidaw, Myanmar	11–14 March	Dr B. Vallat, Dr J. Domenech, Dr F. Caya, Dr H. Kugita, Dr C. Buranathai, Dr R. Abila, Dr A. Poirier, Dr M.J. Gordoncillo, Dr K. Kukreja, Dr B. Tornimbene, Ms P. Srihep, Prof. K. Lukauskas & Dr G. Murray
Training course on animal welfare in poultry production (laying hens and broiler chickens for meat production), in the framework of the BTSF initiative	Brescia, Italy	11–14 March	Dr L.H. Stuardo Escobar
8th meeting of the Maghreb Permanent Veterinary Committee (UMA's Secretariat General)	Rabat, Morocco	12–13 March	Dr R. Bouguedour
Mission of the EC Community Veterinary Emergency Team on ASF	Vilnius, Lithuania	12–14 March	Dr S. Ralchev
National workshop: 'Country perspectives on IHR/PVS assessments and roadmap for better intersectoral collaboration among animal and human health sectors'	Baku, Azerbaijan	13–14 March	Dr M. Eloit, Dr V. Sharandak, Prof. K. Lukauskas, Dr N. Leboucq, Dr S. de La Rocque & Dr S. Corning
59th International Fair of David	David, Panama	13–15 March	Dr M. Arroyo Kuribreña
Animal Health Advisory Committee of the European Commission	Brussels, Belgium	14 March	Dr E. Bonbon



meetings and visits

March 2014 (contd)

Title of the event	Place	Date	Participants
2014 AAVMC Annual Conference: 'One Health in Veterinary Medical Education'	Alexandria, United States	15 March	Dr A. Dehove
GREASE Network Annual Scientific Seminar	Hanoi, Vietnam	16–20 March	Dr A. Poirier
OIE/FEI Joint mission to assess the feasibility of establishing an Equine Disease Free Zone (EDFZ) in Absheron Peninsula	Baku, Azerbaijan	17–20 March	Dr S. Münstermann & Dr G. Murray
Inter-Regional Seminar for OIE National Focal Points for Animal Welfare from the Middle East and North Africa, back to back with IAWP Stakeholders' Workshop	Amman, Jordan	17–20 March	Dr R. Kolesar, Dr L.H. Stuardo Escobar, Dr V. Brioude, Dr G. Yehia, Dr A. El Romeh & Ms R. Rizk
Regional Workshop on Ticks in West Africa	Grand-Bassam, Côte d'Ivoire	17–21 March	Dr Y. Samaké
Public Workshop: 'Emerging Viral Diseases: The 'One Health' Connection'	Washington, DC, United States	18–19 March	Dr A. Thiermann
2nd WHO Technical Consultation on Global Surveillance of Antimicrobial Resistance in Humans	WHO Headquarters, Geneva, Switzerland	18–19 March	Dr E. Erlacher-Vindel
PVS Pathway Laboratory Mission and Tools Expert Training Workshop	OIE Headquarters, Paris, France	18–20 March	Dr J. Lasley & Dr S. Corning
OFFLU Swine Influenza Virus Meeting	Minneapolis, United States	18–20 March	Dr K. Hamilton & Dr G. Pavade
ADB SPS National Workshop	Phnom Penh, Cambodia	18–20 March	Dr R. Abila
4th FAO-APHC/OIE/DLD Regional Workshop on Brucellosis Diagnosis and Control in Asia and the Pacific Region: 'Proficiency Test and Ways Forward for the Region'	Chiang Mai, Thailand	19–21 March	Dr T. Ishibashi
Public seminar on 'Antimicrobial resistance: an urgent global concern' and round table, organised by the Global Health Programme	Geneva, Switzerland	21–22 March	Prof. J. Acar
Seminar for the specialists of the Central Laboratory on compliance with OIE standards	Ashgabat, Turkmenistan	23–28 March	Prof. K. Lukauskas
6th edition of the EIO yearly study tour: 'Creating productive collaborations and strategic partnerships'	OIE Headquarters, Paris, France	24 March	Dr B. Vallat, Dr A. Thiermann, Ms J. Macé, Dr P. Cáceres Soto, Dr L. Awada & Dr M. Okita
Training course of the EDES Programme (managed by COLEACP) for Kenyan veterinary officials on aquatic animal health	Nairobi, Kenya	24 March	Dr P. Bastiaensen
7th RAWs Coordination Group Meeting	Bangkok, Thailand	24 March	Dr T. Ishibashi, Dr R. Abila, Dr K. Kukreja, Ms P. Kuruchittham & Dr G. Murray

meetings and visits

March 2014 (contd)

Title of the event	Place	Date	Participants
Global Agribusiness Forum 2014	Sao Paulo, Brazil	24–25 March	Dr L.O. Barcos
59th meeting of the WTO SPS Committee and two informal meetings	Geneva, Switzerland	24–26 March	Dr D. Belton
Ad hoc external consultation on disease surveillance in live bird markets	FAO Headquarters, Rome, Italy	24–26 March	Dr G. Pavade
GALVMed Board Meeting	Dakar, Senegal	24–26 March	Dr K. Hamilton
1st Coordination Meeting of RESEPI, RESOLAB and Chief Veterinary Officers of Central Africa	N'Djamena, Chad	24–28 March	Dr Y. Samaké
2nd (Virtual) Steering Committee Meeting of the project led by ICIPE on Bee Health in Africa (EU-funded project)	Nairobi, Kenya	25 March	Dr P. Bastiaensen
21st Public Health Grand Round at the University of Nairobi	Nairobi, Kenya	25 March	Dr W. Masiga
OIE Regional Training Workshop (Americas) for OIE National Focal Points for Wildlife	Guelph, Canada	25–27 March	Dr M. Popovic, Dr D. Di Sabatino, Dr E. Erlacher-Vindel, Dr M. Minassian & Dr M. Arroyo Kuribreña
DG SANCO Training Programme on Animal Welfare, funded by the European Commission under the BTSF initiative	Bangkok, Thailand	25–28 March	Dr R. Abila
WFO General Assembly	Buenos Aires, Argentina	25–29 March	Dr L.O. Barcos
6th edition of the EIO yearly study tour: 'Creating productive collaborations and strategic partnerships'	WHO Headquarters, Geneva, Switzerland	26 March	Ms J. Macé
National workshop: 'Country perspectives on IHR/PVS assessments and roadmap for better intersectoral collaboration among animal and human health sectors'	Bangkok, Thailand	26–27 March	Dr F. Caya, Dr V. Sharandak, Dr T. Ishibashi, Dr R. Abila, Dr A. Poirier, Dr J. Kampa, Dr M.J. Gordoncillo, Dr S. de La Rocque & Dr S. Corning
WTO-STDF Working Group Meeting	Geneva, Switzerland	26–28 March	Dr M. Okita
8th meeting of the REMESA Joint Permanent Committee	Valletta, Malta	27–28 March	Dr M. Eloit, Dr J. Domenech, Dr R. Bouguedour, Dr V. Brioudes & Dr A. Ripani
Visit by Dr Joe Anzuino, Veterinary Liaison Manager at the WSPA	OIE Headquarters, Paris, France	27–28 March	Dr L. Awada
6th edition of the EIO yearly study tour: 'Creating productive collaborations and strategic partnerships'	FAO Headquarters, Rome, Italy	28 March	Ms J. Macé
Workshop on FMD	Tripoli, Libya	30 March	Dr A. Ripani
Partners for Rabies Prevention (PRP): 7th Annual Meeting: 'Global Rabies Elimination – Making the Case'	Wolfsberg, Switzerland	31 March – 3 April	Dr A. Dehove & Dr G.J. Torres Peñalver



the OIE and its partners

epidemiology & animal disease control programmes

Management and surveillance of honey-bee pests and diseases in Southern Africa

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Keywords: *Apis florea* – *Apis mellifera* – honey-bee disease – honey-bee pest – Southern Africa – wild honey bee.

Honey bee health is governed globally by the OIE, specifically by the *Terrestrial Animal Health Code* chapter 4.14. and section 9, which set out the guidelines for the official health control of bee diseases [1]. The purpose of such guidelines is to control honey-bee pests and diseases, and to ensure the safe international trade of bees and bee products.

In general, such official honey bee health control requires the following:

- the registration of all beekeepers and all apiaries by some competent authority
- some permanent surveillance of bee health, including the collection of samples and analysis of these samples by certified laboratories, and the imposition of appropriate measures should diseases be detected
- some competent organisation to regulate this surveillance
- procedures for issuing international veterinary certificates

- breeding apiaries for trade
- measures to disinfect diseased hive material.

These OIE standards and norms for the management and surveillance of honey-bee pests and diseases are, to a lesser or greater extent, what is found in most European countries, as well as in North America and Australasia. Indeed, in many instances, far more extensive disease management and surveillance programmes are practised, such as by the National Bee Unit in the United Kingdom [2] and in Germany [3]. These honey bee health measures notwithstanding, substantial losses of honey-bee colonies have occurred in recent years, both in Europe [4] and in the United States [5]. As yet, no honey-bee pest or disease has been successfully eradicated in any country or region, and disease management and surveillance remains a constant requirement.

The situation is, however, quite different in Southern Africa, where none of the bee health requirements is in operation [6]. In general, there is limited control of



the importation of honey bees or bee products into sub-Saharan Africa; ineffective or no registration of beekeepers or apiaries; and little or no surveillance or management of honey-bee pests or diseases. Furthermore, there is no legislation requiring the compulsory management of honey-bee pests and diseases; little or no breeding or selection of bees; and little regulated quality control of honey-bee products. In essence, there is practically no strategic management of or surveillance for honeybee pests and diseases in Southern Africa and honey-bee regulations in the region are minimal in comparison to those of most other parts of the globe. Most countries have ‘notifiable’ honey-bee pests or diseases, guided by the OIE list of notifiable honey-bee pests and diseases, but this has not been enacted through legislation, and thus is not in operation. For example, the OIE has largely not been notified of the spread of the *Varroa* mite through Africa in the past decade [7, 8, 9]. OIE rules and regulations relating to honey bees, while recognised, are seldom applied in the region. Evidence of this lack of strategic management is shown by the fact that honey-bee disease and pest distribution is largely unknown and unrecorded in Southern Africa [10], even though numerous exotics have managed to penetrate the region [11, 12]. Most noticeable, however, is that none of these pests or diseases has caused any significant losses in the honey-bee populations of the region. The honey-bee population of Southern Africa is essentially healthy [8, 9, 13, 14], and no veterinary applications are used throughout the region.

There are numerous reasons that may be advanced for the relative lack of honey-bee disease management in Southern Africa. Foremost among these is that Southern Africa has never witnessed large-scale collapse of its honey-bee populations, and has therefore probably never considered the intensive management of honey-bee diseases as necessary. Other factors include the relatively minor use of commercial honey bees in agriculture, which limits the strategic importance of honey bees in the region; the difficulty of inspection and management in the non-movable-frame log and bark hives that are common through much of Southern Africa; and the difficulty and danger inherent in monitoring often highly defensive bees (Fig. 1). Add to this the obvious reality that, in a region where the vast majority of honey-bee colonies are wild, and where there is often a great



Fig. 1
African honey bees are often highly defensive, making the surveillance of colonies for pests and diseases difficult and dangerous, particularly when honey-bee colonies are housed near human habitation



Fig. 2
Wild honey-bee colonies are abundant in many parts of Southern Africa, both in urban and natural environments, and make up the vast majority of the honey-bee population of the region

abundance of wild honey bees (Fig. 2) [15, 16], there is little sense in trying to ‘manage’ pests and diseases in the hived population.

A comparison between the situation in Southern Africa and other parts of the world, such as Europe and North America, reveals that those countries with intensive management and surveillance of honey-bee diseases, in accordance with OIE guidelines, have significant honey bee health problems and concerns, while those countries operating largely without these guidelines have fewer honey bee health concerns. This is perhaps to be expected, as only countries with bee health

problems might be expected to adopt costly and difficult honey bee disease management strategies. Nonetheless, it does pose the question — why are there regions of the world where the honey bee populations seem not to have the serious health concerns that would necessitate active management. There is little doubt that certain inherent genetic and behavioural factors in African honey bees are important in their seeming general tolerance to pests and diseases, with factors such as swarming, absconding and hygienic behaviour likely to be significant [8, 17]. Additionally, honey-bee populations in Southern Africa, like those in Latin America [18], are not as exposed to agricultural stresses as those found in more developed parts of the world, and have access to a more varied and natural diet, both of which are likely to be crucial in maintaining honey-bee vigour. Also important are: maintaining honey-bee populations below carrying capacity, by not incorporating large-scale supplementary feeding of colonies; the absence of long-distance commercial movement of bee populations or the mixing of bee populations; and the absence of any large-scale recycling of bee-keeping equipment.

In addition to the above, though, it is also extremely likely that the unselected nature of African bees [13] – i.e. the fact that there has not been a continuous attempt to breed super-bees but rather that local populations are used [19] – has been vitally important in delivering the healthy status of African honey-bee populations. Similarly, eschewing veterinary applications in an attempt to ‘manage’ honey-bee pests and diseases and, rather, adopting a continent-wide ‘live-and-let-die’ breeding programme [20], and operating honey-bee populations in an extensive, below economic-injury-level manner [21], without attempting to eradicate pests and diseases, has undoubtedly been crucial in the survival of a healthy, vigorous honey-bee population in Southern Africa.

This leads to the question – is this hands-off approach sustainable for Southern Africa, and what should be done about the management and surveillance of honey-bee pests and diseases in coming years? It is suggested that, as Africa develops economically, this strategy will have to be adapted, and will eventually adopt many of the OIE guidelines operating in other parts of the world. Globalisation and the increase in trade will continue to promote the global spread of honey-bee pests and diseases [10], and the development

of agriculture in Africa will bring both increased exposure to agrochemicals and a change in the natural diet presently available to honey bees in much of Southern Africa. Honey bee management will inevitably become more intensive, and all these factors will result in an increase in honey-bee stressors, requiring active management. These stressors are already evident in the heavily managed honey-bee populations of South Africa [22].

Southern Africa, therefore, will need to adapt and progress if it is to protect and sustain its currently vigorous honey-bee population, and this includes the development of OIE-guided disease management and surveillance strategies and capacity.

Additional measures must also be developed and adopted as a matter of urgency, as follows:

- a common and harmonised strategy and protocol throughout the region is necessary to coordinate disease management, as honey-bee populations in Africa are extremely migratory [23]
- better import and border controls are needed, both to limit the introduction of exotic species (Fig. 3) and to control the entry of dangerous diseases through the uncontrolled importation of honey-bee products
- an intensive expansion of research, development and monitoring is required throughout the region [9].



Fig. 3
Incursions of foreign honey-bee species have occurred on numerous occasions in Southern Africa, such as this *Apis florea* colony found in imported heavy machinery in Durban, South Africa. On at least one occasion these non-native species have become established, potentially threatening native honey bees through competition for resources and the introduction of exotic pests and diseases

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The National Bee Unit The surveillance programme for honey bees in England and Wales

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Keywords: apiculture – *Apis mellifera* – BeeBase – bee-keeping – England – National Bee Unit – Wales.

There is a wide range of insect pollinators across the world but, of these, honey bees are the most important managed species. In the United Kingdom (UK), on a national scale, the value of insect-pollinated crops runs into many hundreds of millions of pounds every year. Honey bees also play an important role in respect of wild species of flora, contributing to the pollination of many plants of significant ecological value, including major plants of woodland, heath and meadow. This contributes to maintaining the sustainability of bee-keeping, the farming industry and, in particular, a vibrant horticulture industry and rural economy. It is therefore vital to maintain healthy populations of bees and to assist beekeepers in achieving this task.

The first formal statutory control of bee diseases in the UK dates back to the 1940s (the Foul Brood Disease of Bees Order 1942), introduced to combat, in particular, the widespread incidence of American foulbrood disease [1]. Our inspections programme and its legislative basis have been evolving ever since then, as new risks have emerged in the intervening 70 years. Nowadays, there are *Tropilaelaps* spp. mites; *Varroa destructor* (varroosis); the small hive beetle (*Aethina tumida*); the Asian hornet, *Vespa velutina*; and a range of potentially damaging honey-bee viruses to consider, to name just a few threats that were not on our horizons in the 1940s.

Today, the Food and Environment Research Agency's (FERA's) National Bee Unit (NBU) is responsible for the delivery of an integrated bee health programme in England and Wales, under both UK and EU honey-bee legislation. The NBU's dual roles are to protect honey



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Fig. 1
The NBU home apiary. The NBU runs between 150 and 300 colonies



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Fig. 2
Training beekeepers in good husbandry and recognising pests and diseases

bees and to support the bee-keeping industry, primarily through the implementation of the Healthy Bees Plan, a flagship ten year policy delivered in partnership with bee-keeping stakeholders and the industry [2].



The Healthy Bees Plan has the following five main objectives:

- to keep pests, diseases and other hazards to the lowest levels achievable
- to promote good standards of husbandry to minimise pest and disease risks
- to encourage effective biosecurity
- to ensure that sound science underpins bee health policy
- to get relevant stakeholders to work together on bee health.

The NBU also provides advice and support for the Scottish Government bee health programme [3]. Across the rest of the UK, Scotland and Northern Ireland have their own inspection programmes that run along similar lines.

The bee health programme is designed to protect honey-bee health overall, by producing evidence to

improve the biosecurity of the honey-bee population through an integrated schedule of apiary inspections, enforcement and pest/disease diagnostics (through the use of modern molecular methods), all underpinned by research, training and extension. These field-, office- and laboratory-based activities are provided by a team of 60 bee inspectors working in eight regions across England and Wales, and 15 highly skilled scientists, apiary managers and administrative staff located at FERA (in North Yorkshire). The NBU is thus charged with controlling serious notifiable diseases, providing advice to the bee-keeping sector, minimising the risk of importing exotic pests and providing support to the various Policy departments. The unit operates an evidence-based prioritised inspection programme which is constantly informed by the research and development



Fig. 3
General colony inspections: assessing a brood frame



Fig. 4
Honey bees pollinating a pear orchard



Fig. 5
A healthy frame of capped brood: wall-to-wall brood; the colony is headed by a productive queen

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programme. Inspectors are each assigned an ‘inspection list’, generated by a sophisticated database called BeeBase [4]. BeeBase is linked to each inspector’s computer, and uses a ‘traffic light’ system to indicate the order in which apiary visits should be made. Apiaries are allocated a red, amber or green designation depending on risk (high, medium, or low, respectively). On this basis, in a typical year, the annual risk-based apiary inspections programme deals with 30,000 to 35,000 colonies in 6,500 to 7,000 apiaries. This includes surveillance of sentinel apiaries and exotic pest surveys at risk points. Recent innovations to improve the risk-based management of the inspections programme include the development of handheld devices for remote recording and E-learning systems.

Within the NBU research arm there is a rolling programme of PhD studentships (12 in the last six years), and the NBU collaborates with approximately 10 to 15 different universities in the UK, on various bee health



© Pate Haynes



Fig. 6
Spring colony checks



© Mike Brown, NBU

Fig. 7
Honey bee foraging for pollen on a willow

projects. The NBU keep from 150 to 300 colonies of honey bees (depending on demand), which are important not only for their use in the NBU research programme, but also for commercial work (for example, developing new medicines for bees).

Members of the NBU are active educators, providing training and lectures to 20,000 attendees across England and Wales each year. The NBU publishes grey literature articles (i.e. outside commercial publishing) in the bee press for beekeepers, advisory leaflets and peer-reviewed journal publications. Although BeeBase principally serves as the management tool for planning and executing the inspection programme, it also doubles as an Internet-based information service for beekeepers, providing the information they need to successfully keep bees.

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EPILOBEE

When epidemiology meets apidology

A pan-European surveillance programme on honey-bee colony mortalities

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Keywords: *Aethina tumida* – American foulbrood – *Apis mellifera* – chronic bee paralysis – EPILOBEE – European foulbrood – honey bee – *Melissococcus plutonius* – *Nosema* – nosemosis – *Paenibacillus larvae* – *Tropilaelaps* – *Varroa* – varroosis.

The European Commission has designated the ANSES laboratory in Sophia Antipolis, France, as the European Union (EU) Reference Laboratory for honey bee health. The laboratory is also an OIE Reference Laboratory for bee diseases.

For the first time, an active epidemiological surveillance programme on honey bee colony mortality (EPILOBEE) has been implemented in Europe in 17 EU Member States: Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Portugal, Slovakia, Spain, Sweden and the United Kingdom. Each EU Member State has developed a surveillance protocol based on guidelines produced by the Reference Laboratory to harmonise surveillance procedures. The EPILOBEE project was financed by the European Commission and those Member States taking part in the project.

To estimate the mortality of bee colonies (*Apis mellifera* L.) over the winter and during the bee-keeping season, bee inspectors made three visits: before winter 2012 (autumn), after winter (spring 2013) and during the bee-keeping season (summer 2013). Farming practices and clinical manifestations of the main infectious and parasitic diseases were recorded through a detailed questionnaire, resulting in the collection of a tremendous

amount of data. Many samples were collected as well. In cases where disease was suspected, appropriate samples were taken from the affected colonies.

The major honey bee diseases surveyed were varroosis, American foulbrood, European foulbrood, noseamosis and chronic paralysis. The *Varroa destructor* infestation rate of living bees was assessed before winter. Finally, EPILOBEE improved, through training, the early detection of both *Aethina tumida* and *Tropilaelaps* spp., two arthropods exotic to Europe.

Between autumn 2012 and summer 2013, 31,832 colonies located in 3,284 apiaries were visited three times by 1,354 bee inspectors in 17 Member States. Over all, 8,572 visits were made to apiaries during EPILOBEE.

Although 15 suspect arthropods were collected in seven Member States during the first year of EPILOBEE, the presence of *A. tumida* or *Tropilaelaps* spp. was not confirmed in any of the suspected cases. These results show that EPILOBEE was a robust system which achieved the collection of numerous and substantial data. The first results, described in a scientific report provided by the Reference Laboratory to the European Commission, were released during the Conference for Better Bee Health, held in Brussels on 7 April 2014.

Each Member State organised the training of the bee inspectors and was in charge of implementing regular and consistent visits for comparison purposes (Fig. 1). It should be acknowledged that this key step generated a remarkable amount of work, involving many stakeholders at all different levels, from those in the Ministry to those in the field. The participating Member States did an excellent job in collecting data, recording them in the database and correcting these data. The Reference Laboratory for bee health wishes to thank all those who took part, for their substantial contribution.

The EPILOBEE project has resulted in the compilation of an enormous amount of data that will be further analysed. These data have enabled the establishment of a significant web-based database.

In March 2014, 103,930 laboratory analyses were recorded in the database. Statistical treatments required various data-cleaning steps to include as much information as possible in the analysis. Future data analyses will undoubtedly explore the statistical

links between colony mortality and various risk factors, including disease prevalence, use of veterinary treatments, the bee-keeping context and other parameters. It should be remembered that the 2012 to 2013 winter was particularly long and cold in Europe and several biological and environmental factors, acting alone or in combination, have the potential to have caused premature colony mortality.

Indeed, EPILOBEE is a solid foundation for a harmonised and tested methodology for future surveillance and for veterinary policy development.



Fig. 1
Bee inspectors visiting a honey-bee colony

© M.-P. Chauzat





A US national survey of honey-bee pests and diseases

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The views expressed in this article are solely the responsibility of the author(s). The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by the OIE in preference to others of a similar nature that are not mentioned.

Keywords: ABPV – acute bee paralysis – *Apis cerana* – *Apis mellifera* – black queen cell virus – BQCV – deformed wing virus – DWV – honey bee – honey bee disease – honey bee pest – IAPV – *Nosema* – nosemosis – *Tropilaelaps* – United States – *Varroa* – varroosis.

Introduction

A decline in honey-bee health has been documented for years. Honey-bee health challenges are attributable to parasites, diseases, poor nutrition and environmental toxins. In the United States (USA), a national survey of honey-bee pests and diseases has been funded annually since 2009 by the United States Department of Agriculture (USDA) Animal Plant Health Inspection Service (APHIS) and coordinated in collaboration with the USDA Agricultural Research Service (ARS) Bee Research Laboratory and the University of Maryland.

This survey continues to document the prevalence and load of various honey-bee diseases, parasites and/or pests. Of particular emphasis is an attempt to document the likely absence of certain honey-bee parasites and diseases in the USA; specifically, the absence of the parasitic mite *Tropilaelaps* and other exotic threats, such as *Apis cerana* and slow bee paralysis virus (SBPV). To maximize the information gained from this survey effort, collected samples are also analyzed for honey-bee diseases and parasites known to be present in the USA. This information will help to place current and future epidemiological studies in context and thus may indirectly help investigations of emerging conditions such as colony collapse disorder (CCD).

A pilot survey in three states was initiated in 2009 to test the survey methodology. In 2010, a limited national survey was conducted in 13 states to expand and augment the baseline pest and pathogen data collected from the pilot study. From 2011 to 2013, full-scale national surveys were conducted in 30 to 34 states. We anticipate continuing this effort in 2014 to 2015.

This cross-country survey is the most comprehensive honey-bee pest and health survey to date, and provides essential disease and pest-load baseline information.

Methods

A composite sample of adult bees was collected from eight colonies in a selected apiary from 25 different beekeeper operations from 2009 to 2012 and from 24 apiaries, representing 24 beekeepers, in 2013, for each participating state or territory (except for California where sampling was doubled).

Samples were usually collected by state department of agriculture employees, who were instructed to sample colonies in apiaries that had at least ten colonies. When feasible, samplers were asked to select apiaries managed by up to 10 queen producers within their state. Of the remaining operations sampled, samplers were asked to select one of two from migratory operations (which

moved out of state and returned prior to sampling) and one of two from stationary operations (which do not move out of the state but may move within the state). When selecting migratory and stationary operations to sample, samplers were asked to section their state into four quadrants and choose an equal number of operations randomly from each quadrant. The selection criteria were meant to prioritize sampling of high-risk or high-impact operations (e.g. migratory or queen operations) while still attempting to provide data that were representative of the state.

In the apiary from a selected operation, three different composite samples were collected from eight colonies:

- a) a sample of brood-frame debris to detect *Tropilaelaps* [1]
- b) adult worker bees collected in alcohol (Fig. 1) to detect and quantify *Varroa* mites, *Nosema* spores and *Apis cerana*
- c) adult worker bees collected in a live-bee-shipping box (Fig. 2) for the analysis of viruses, e.g.:
 - acute bee paralysis virus (ABPV)
 - black queen cell virus (BQCV)
 - chronic bee paralysis virus (CBPV)
 - deformed wing virus (DWV)
 - Israeli acute paralysis virus (IAPV)
 - Kashmir bee virus (KBV)
 - slow bee paralysis virus (SBPV).

Details of the protocol for the survey can be found on the APHIS website at: www.aphis.usda.gov/plant_health/plant_pest_info/honey_bees/downloads/sampling_protocol.pdf

Results

There have been no detections of slow bee paralysis virus, the only exotic virus sampled in the survey. No diseases or parasites of bees not already known to exist in the country were discovered. Over the four-year sampling period, there was no evidence of exotic *Tropilaelaps* mites (Fig. 3) or *Apis cerana*.

As 2009 only involved the collection of samples from three states, results from this year are not necessarily comparable to those of other years, and for that reason are not given in this report.



Fig. 1
Bees are shipped in alcohol for *Nosema* and *Varroa* analysis

Varroa mites have been observed in all sampled regions, with the exception of the Hawaiian Islands of Maui, Kauai and Molokai. Mites were detected in approximately 90% of all sampled apiaries from 2010 to 2012. While the prevalence of apiaries with detectable levels of *Varroa* did not change, the overall mite load in infested apiaries increased in 2011 and 2012 from 2010 levels (Fig. 4). While the economic threshold for *Varroa* mites is seasonally and regionally specific, generally an average load of over 3 mites per 100 bees is of concern. An alarming result shows that, in 2012, 52.8% of the samples that tested positive for *Varroa* exceeded the lower threshold for possible damage to a colony from the mite.

Nosema spores were found in 47% to 57% of all sampled apiaries from 2010 to 2012 (Fig. 5). *N. cerana* was the predominant species detected, with fewer than 1.5% of all sampled apiaries testing positive for *N. apis* in 2011 and 2012.

Israeli acute paralysis virus (IAPV), acute bee paralysis virus (ABPV) and black queen cell virus (BQCV) were





Fig. 2
Bees are shipped live in a ventilated box for viral analysis



Fig. 3
Comparison of a *Varroa* mite (left) to a *Tropilaelaps* mite (right)

commonly found, with their prevalence apparently fluctuating between states and seasons. The most commonly identified viruses were DWV and BQCV, which were found in all states sampled.

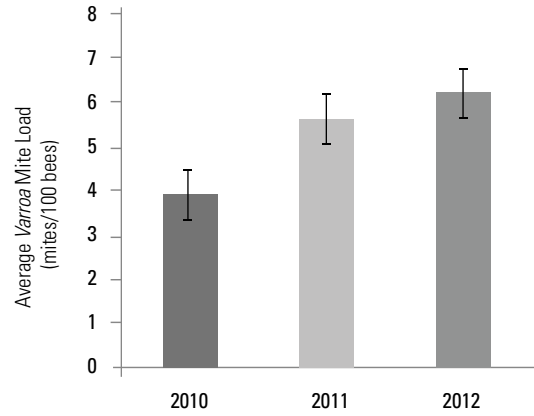


Fig. 4
Average *Varroa* mite load (95% confidence interval shown)

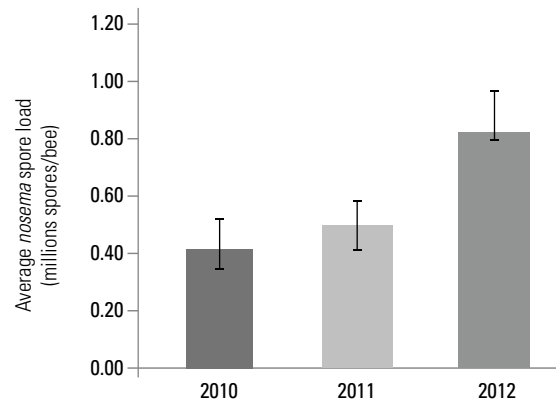


Fig. 5
Average *Nosema* spore load (95% confidence interval shown)

Discussion

Pollination is responsible for USD 15 billion in added crop value in the USA each year. Specialty crops such as nuts, berries, fruits and vegetables are particularly reliant on honey-bee pollination for fruit set. Of the 2.6 million colonies of bees in the USA, the almond crop in California alone requires 1.5 million colonies, and this need is projected to increase significantly in the future. There is growing concern that, if honey-bee health cannot be improved, beekeepers will be unable to meet the demand for this and other crops.

The USDA sponsored the National Survey of Honey Bee Pests and Diseases with the primary goal of validating the belief that the exotic parasitic mite *Tropilaelaps*, the problematic *Apis* species *A. cerana*, and the slow bee paralysis virus (SBPV) are not present in the country. This information is required to justify the continued blocking of honey-bee exports from countries that either have these species of concern, or do not have a survey protocol in place to ensure that these species are not present. Further, the survey provided an opportunity to establish baseline information on the prevalence of honey-bee diseases and parasites known to be present in the USA.

Tropilaelaps spp., an Asian parasitic mite (several species in the genus *Tropilaelaps* are recognised) of honey bees, feeds on honey-bee brood. Its parasitic feeding actions act as vectors for viruses, weaken or kill parasitized brood, and can cause infected colonies to abscond which then spread the mites to new areas (Fig 3). *Tropilaelaps* mites can complete their life cycle in one week, and thus this mite can out-compete the *Varroa* mite when both mites are present in a hive. Currently, there are no known *Tropilaelaps* mites in the USA.

This survey has also confirmed that the exotic *Apis cerana*, or Asian honey bee, and slow bee paralysis virus (SBPV) are not known to be in USA apiaries. *A. cerana* is now confirmed in northern Australia. It is smaller but very similar in appearance to *A. mellifera*, well adapted to warmer climates, builds smaller colonies, and is known to swarm many times during the year. In tropical areas (e.g. the Solomon Islands), *A. cerana* has been shown to out-compete *A. mellifera* in nectar and pollen gathering and exhibits a propensity for robbing European honey-bee stores. Its honey yield is far less than *A. mellifera*, making it a less valuable bee for commercial honey production.

Identifying exotic species was the primary objective of this survey; a secondary goal was to acquire baseline information on the levels of other honey-bee diseases and parasites known to be present in the USA. *Varroa* mite loads were seen to increase in each year of the survey. It is not known what the cause is but possible explanations include fewer beekeepers treating their hives for *Varroa*, mites becoming resistant to the available treatments or an improved snapshot of the actual mite infestation across the country.

The survey results are used to gauge the overall health of colonies, to create a baseline disease level, and to facilitate the interpretation of ongoing and future epidemiological studies. These baseline data, including historic data from research institutions such as the USDA ARS Bee Research Laboratory and other ongoing field sampling and management surveys, have been incorporated into a single database as part of the Bee Informed Partnership, which is funded by the USDA National Institute of Food and Agriculture.

More information about the Bee Informed Partnership:
www.beeinformed.org

More information about the national survey of honey bee pests and diseases, including annual reports:
www.aphis.usda.gov/planthealth/honeybees

Acknowledgements

We would like to acknowledge the beekeepers who voluntarily allowed their hives to be sampled and the state apiary specialists who collected samples. We also acknowledge the teams at the USDA ARS Bee Research Laboratory and University of Maryland who have contributed to this survey.

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activities of Reference Laboratories & Collaborating Centres

Annual reports on Reference Centre Activities for 2013

Annual reports have been received from 190 out of 199 Reference Laboratories and from 40 out of 41 Collaborating Centres for terrestrial animal diseases or topics.

The international activities relevant to the work of the OIE are summarised in the following graphics:

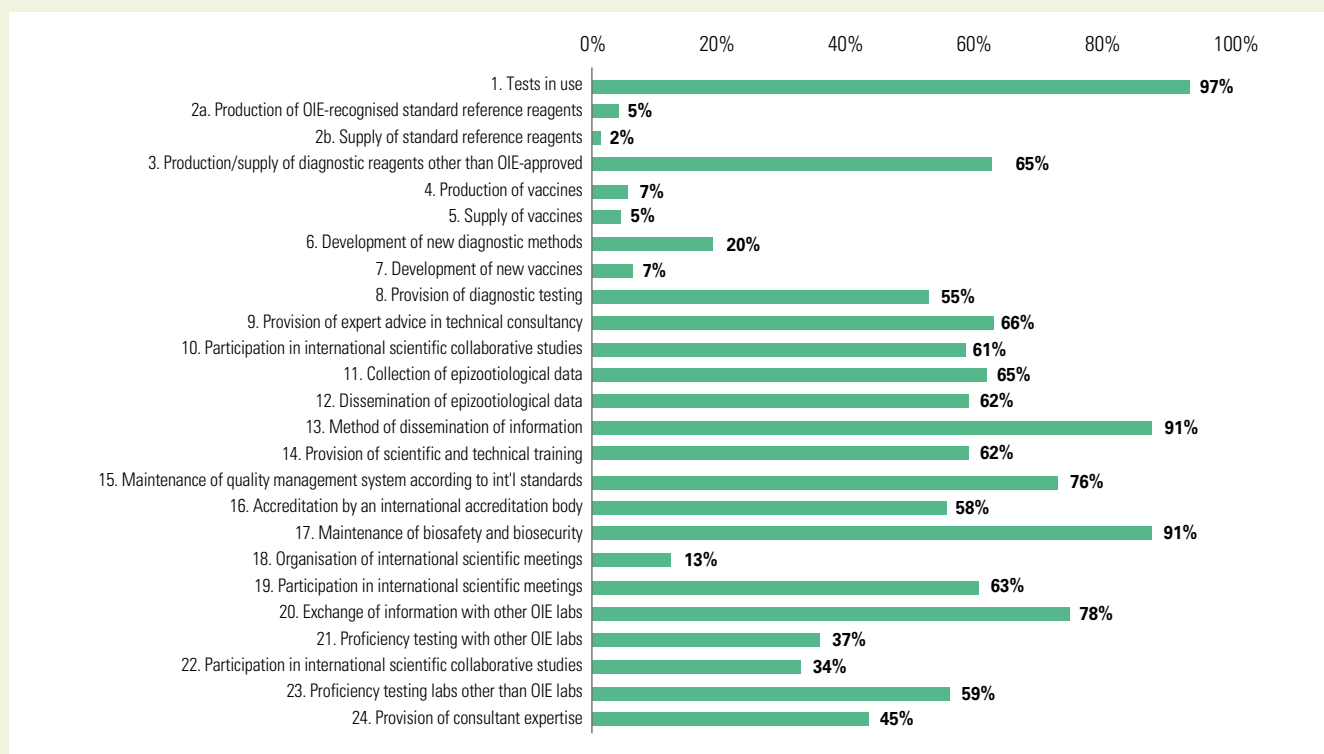


Fig. 1
2013 OIE Reference Laboratory activities

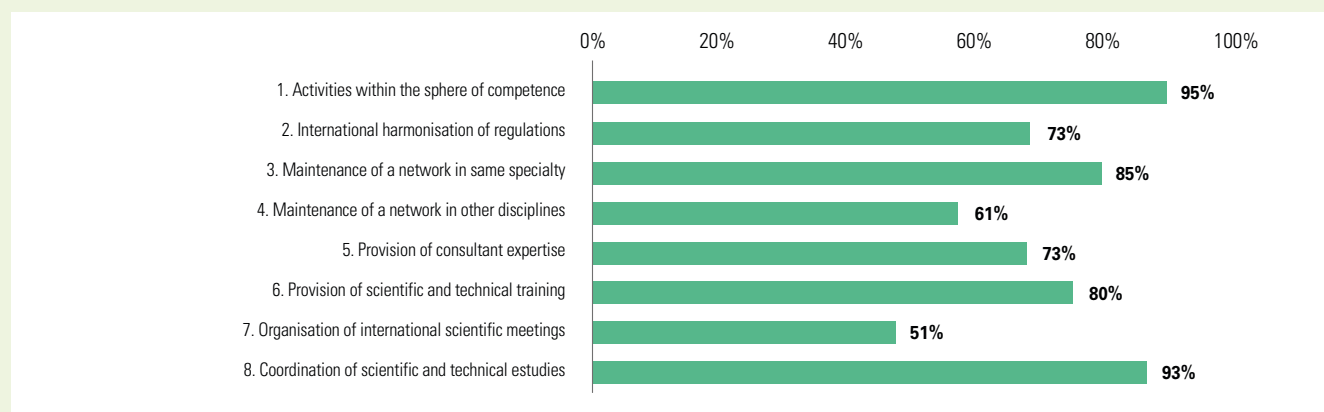


Fig. 2
2013 OIE Collaborating Centre activities



Activities of OIE Reference Laboratories on bee diseases

American foulbrood of honey bees

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American foulbrood (AFB) is considered one of the most contagious and destructive infectious diseases affecting the larval and pupal stages of honey bees.



Research in this OIE Reference Laboratory

is chiefly directed towards: investigating the degree of diversity of *Paenibacillus larvae* populations from different geographical areas through microbiological and molecular markers; characterising antagonistic compounds produced by different spore-forming bacteria isolated from honey and other apiarian sources that are biologically active against *P. larvae*; evaluating alternative non-contaminant natural biocides to prevent and control AFB in infected colonies; and investigating the tetracycline and oxytetracycline resistance determinants in populations of *P. larvae* and other spore-forming bacteria isolated from honey and honey bees.

The laboratory has a collection of specimens of *P. larvae* and other spore-forming bacteria isolated from honey and other apiarian sources, characterised by microbiological and molecular techniques. The laboratory also provides diagnostic testing facilities for AFB to OIE Member Countries on an individual basis (research institutes, universities, government agencies, etc.) and scientific and technical support to researchers and veterinarians.

Bee diseases

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As an OIE expert and head of the OIE Reference Laboratory, Dr Wolfgang Ritter has been advising politicians, veterinarians, bee experts and beekeepers from all over the world, on all kinds of questions about bee diseases, for more than 20 years. The



OIE Reference Laboratory has developed new methods for the diagnosis and control of bee diseases. Up to now, varroosis and connected viruses, as well as the *Tropilaelaps* mite, American foulbrood, and the small hive beetle, have been focal issues. Ring tests are currently being prepared to improve the quality of examination in individual countries.

Moreover, worldwide symposiums and congresses about bee health have been organised and implemented for many years.



Dr Ritter is the editor of *Bee health and veterinarians*, a new OIE publication providing a comprehensive overview of bee health challenges (see p. 18).



Bee diseases

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The ANSES Sophia Antipolis laboratory is an OIE Reference Laboratory for bee diseases. Since 2011, it has also been the European Reference Laboratory for honey bee health.

The laboratory develops, publishes and proposes to the OIE methods for diagnosing relevant bee diseases. The laboratory also types, stores and, where appropriate, supplies strains of the pathogenic agents to facilitate diagnostic services. For example, these services can be used for epidemiological follow-ups or for verifying diagnoses. The OIE Reference Laboratory can also supply standard material and other reference reagents to other laboratories to standardise the tests used in each country worldwide. The laboratory is particularly interested in providing expertise on the detection and identification of two exotic arthropods to Europe, *Tropilaelaps* mites and the small

hive beetle (*Aethina tumida*), to enable rapid differential diagnosis.

The OIE laboratory for honey bee health covers the main parasitic, bacterial and viral bee diseases, as well as the invasive species (insects and mites) threatening the honey bee

population in Europe. The laboratory addresses the issue of colony poisoning through research on the most dangerous pesticide residues for honey bees. The laboratory liaises with the European Food Safety Authority, other laboratories, scientist and networks, as appropriate, to ensure that the best possible science is available in this area.



Equine Influenza Vaccine Composition

Conclusions and recommendations of the OIE

Expert Surveillance Panel meeting held at OIE Headquarters, Paris, on 4 March 2014

Equine influenza activity in 2013

During 2013, individual animal cases and outbreaks of equine influenza were reported by Belgium, the People's Republic of China, Germany, Sweden, Turkey, the United Kingdom (UK) and the United States of America (USA).

Sources of equine influenza viruses characterised in 2013

Equine influenza A (H3N8) viruses were isolated and/or characterised from outbreaks in the People's Republic of China, Germany, Sweden, Turkey, the UK and USA.

Field data

Equine influenza virus infections were confirmed in both vaccinated and unvaccinated horses.

Several outbreaks in Germany, Sweden, the UK and USA were associated with the recent transportation of horses and/or the introduction of horses from sales or other countries.

Equine influenza was diagnosed in 24 states in the USA but, in the majority of cases, the vaccination history of the horses was unknown.

Seventy-six horses in a population of 1,143 housed at a racetrack in Turkey were clinically ill. The majority of the clinically affected horses were unvaccinated as they had not yet raced.

Characterisation of viruses isolated in 2013

Viruses isolated/identified from outbreaks in China, Germany, Sweden, Turkey, the UK and USA were genetically characterised by sequencing the haemagglutinin (HA) gene, in many cases the HA1-encoding region.

Whole genome sequences were determined for three Swedish isolates and for the sequences of the neuraminidase (NA) genes for several virus isolates from the UK and the USA.

Viruses isolated in Turkey, the UK and USA were also characterised antigenically by the haemagglutination inhibition (HI) assay, using post-infection ferret antisera and chicken red blood cells.

Genetic characterisation

All HA sequences obtained from the viruses were of the American lineage (Florida sublineage). The viruses detected in the USA were characterised as clade 1 viruses. The viruses detected in China, Germany, Sweden, Turkey and the UK were characterised as clade 2 viruses.

Two subpopulations of clade 2 viruses were identified with amino acid substitutions in HA1 at either position 144 or position 179. Viruses in this clade continue to diverge and a strain from China was readily distinguishable from those circulating in Europe. The NA gene sequences of viruses from clade 1 and clade 2 were clearly distinguishable.

Representative sequences for HA and NA are available on GenBank and the Global Initiative on Sharing All Influenza Data (GISAID).

Antigenic characteristics

Haemagglutination inhibition data available for viruses isolated in 2013, and antigenic cartography analyses of these same data, show that the two clades of the Florida sublineage continue to co-circulate and evolve but currently remain closely related antigenically to the recommended vaccine viruses of that lineage.

Conclusions

No Eurasian viruses were detected in 2013. Those viruses that were isolated and characterised came from clades 1 and 2 of the Florida sublineage.

Level of surveillance and updating vaccines

The OIE Expert Surveillance Panel continues to emphasise the importance of increased surveillance and further investigation of vaccination breakdown in different countries. Increased surveillance in Asia has been facilitated by the OIE twinning programme. The rapid submission of viruses to reference laboratories is essential if antigenic and genetic drift are to be monitored effectively on a global basis.

Although one vaccine available within the American market has been updated to include a virus from clade 2, in accordance with the recommendations of 2010 to 2013, the majority of the current vaccines contain outdated strains.

Updating vaccines with epidemiologically relevant viruses is necessary for optimum protection. The OIE Expert Surveillance Panel welcomes the revision of the EU Guideline on Data Requirements for Strain Updates to Equine Influenza Vaccines and any amendments to regulatory procedures that allow equine influenza vaccines to be updated as speedily as possible without compromising safety and efficacy.

Recommendations (March 2014)

These are unchanged from those made in March 2013.

It is not necessary to include an H7N7 virus or an H3N8 virus of the Eurasian lineage in vaccines as these viruses have not been detected in the course of the most recent surveillance and are therefore presumed not to be circulating.

Vaccines for the international market should contain both clade 1 and clade 2 viruses of the Florida sublineage:

- clade 1 is represented by **A/eq/South Africa/O4/2003-like or A/eq/Ohio/2003-like viruses**
- clade 2 is represented by **A/eq/Richmond/1/2007-like viruses.**

A panel of viruses covering both clades is available from the OIE Reference Laboratories (see box on next page).

Manufacturers producing vaccines for a strictly national market are encouraged to liaise with reference laboratories. The selected viruses should induce responses which are immunogenically relevant to the equine influenza viruses circulating nationally. A sequence determination of both HAs and NAs should be completed before use.



Reference reagents

Freeze-dried post-infection equine antisera to A/eq/Newmarket/1/93 (American lineage H3N8) and A/eq/South Africa/4/2003 (Florida clade 1, sublineage of the American lineage) are available from the European Directorate for the Quality of Medicines (EDQM). These sera have been assigned single radial haemolysis (SRH) values through an international collaborative study

and can be used as primary reference sera for the assay.

There is no SRH reference serum currently available for A/eq/Richmond/1/2007, representative of Florida clade 2.

There is currently a shortage of single radial diffusion (SRD) reagents and they will no longer be produced by the National Institute for Biological Standards and Control (NIBSC), the UK. There is a need for updated SRD reagents for both Florida clade 1 and clade 2.

Recent virus strains, including suitable vaccine candidates for clades 1 and 2, are available from the OIE Reference Laboratories. In the event that an OIE Reference Laboratory cannot supply suitable vaccine candidates for both clades, it will assist the vaccine company to source the viruses from an alternative OIE Reference Laboratory.

Small quantities of ferret antisera for antigenic characterisation are available from the OIE Reference Laboratory in the UK.

OIE Reference Laboratories for equine influenza

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Experts from WHO laboratories

Prof. Derek Smith and Dr Nicola Lewis, WHO Collaborating Centre for Modelling, Evolution, and Control of Emerging Diseases, University of Cambridge, UK.

Other experts

Prof. Vincenzo Caporale, President of the OIE Biological Standards Commission, Italy; Prof. Xiaojun Wang, Harbin Veterinary Research Institute, People's Republic of China; Dr Takashi Yamanaka, Equine Research Institute, Shiba, Japan; Dr María Barrandeguy, CICVyA INTA, Argentina; Dr Louise Treiberg Berndtsson, National Veterinary Institute, Uppsala, Sweden; Dr Adam Rash, Animal Health Trust, UK; Dr Loic Legrand, University of Caen Basse-Normandie, France; and Dr Nitin Virmani, National Research Centre on Equines, India.

special events

The OIE celebrates the first World Wildlife Day



3 March 2014: for the very first time, a day of the year was devoted to raising public awareness of the importance of protecting biodiversity and maintaining the constant fight against the illegal trade in wild animals

The OIE lent its support to the organisation of the first World Wildlife Day. This new event was created by a United Nations Resolution, adopted in 2013 within the framework of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which declared 3 March 'World Wildlife Day'.

World Wildlife Day provides the perfect opportunity to celebrate the countless beautiful and varied forms of wild flora and fauna and to raise awareness of the multitudinous benefits of nature conservation for humankind. The event falls well within the mandate of the OIE, whose many concerns include wildlife and biodiversity protection.

Next World Wildlife Day: 3 March 2015!

Visit the World Wildlife
Day Facebook page.



agenda

2014

July

Regional Seminar for OIE National Focal Points for Communication
1–3 July
Tallinn, Estonia

Regional Seminar for OIE National Focal Points for Wildlife
1–4 July
Hokkaido, Japan

Meeting of the Committee on Sanitary and Phytosanitary Measures
7–11 July
Geneva, Switzerland

37th Session of the Codex Alimentarius Commission
14–18 July
Geneva, Switzerland

August

Regional Seminar for OIE National Focal Points for Veterinary Products
25–29 August
Ottawa, Ontario, Canada

September

39th World Small Animal Veterinary Association Congress (WSAVA 2014)
16–19 September
Cape Town, South Africa
www2.kenes.com/wsava/Pages/Home.aspx

26th Conference of the OIE Regional Commission for Europe
23–26 September
Bern, Switzerland

October

3rd International Conference on Antimicrobial Research – ICAR2014
1–3 October
Madrid, Spain
www.icar-2014.org

Meeting of the Committee on Sanitary and Phytosanitary Measures
13–17 October
Geneva, Switzerland

Global Conference of the OIE Reference Centres
14–16 October
Seoul, Republic of Korea

Meeting of OIE Regional and Sub-Regional Representatives
21–24 October
Paris, France



November

*4th International Conference on
Bluetongue and related Orbiviruses*
5–7 November
Rome, Italy
www.btconference2014.izs.it

*22nd Conference of the OIE
Regional Commission for the
Americas*
10–14 November
Guanajuato, Mexico

*Regional Seminar for OIE
National Focal Points on
Animal Welfare*
12–14 November
Canberra, Australia

*2nd International Congress of
Agriculture and Food*
26–30 November
Antalya, Turkey
www.tarimgidakongresi.org/homepage.html

December

*Regional Seminar for OIE
National Focal Points on
Veterinary Products*
2–5 December
Japan

2015

January

*OIE Global Conference
on Aquatic Animal Health:
Riding the wave to the future*
20–22 January
Ho Chi Minh City, Vietnam

*Regional Seminar for OIE
National Focal Points on
Aquatic Animals*
22–23 January
Ho Chi Minh City, Vietnam

*Regional Seminar (Europe)
for OIE National Focal Points for
Veterinary Laboratories*
26–30 January

February

*21st Conference of the OIE
Regional Commission for Africa*
16–20 February
Rabat, Morocco

March

*3rd International 'One
Health' Congress*
15–18 March
Amsterdam,
The Netherlands
www.iohc2015.com

June

*17th International
Symposium of the World
Association of Veterinary
Laboratory Diagnosticians
(WAVLD)*
15–18 June
Saskatoon, Saskatchewan,
Canada
www.wavld.org

*Conference on Biological
Threats Reduction*
30 June – 2 July
Paris, France

September

*29th Conference of the OIE
Regional Commission for Asia,
the Far East and Oceania*
Mongolia

November

*13th Conference of the OIE
Regional Commission for the
Middle East*
Oman

questions & answers

OIE's 90th anniversary quiz

**Need more information?
Go to pp. 15-17**

1. How many countries report to the OIE using WAHIS?

- a. 178
- b. 165
- c. 195

2. How many diseases are listed by the OIE?

- a. 116
- b. 108
- c. 178

3. Animal diseases on the OIE List must be notified by:

- a. All OIE Member Countries
- b. All OIE Member Countries, but it is also open to non-members
- c. Some OIE Member Countries

4. Disease alerts are disseminated to:

- a. The 178 Delegates of OIE Member Countries
- b. All subscribers to the online OIE-Info distribution list
- c. The 178 Delegates and all animal health professionals in OIE Member Countries
- d. The 178 Delegates of OIE Member Countries and all subscribers to the online OIE-Info distribution list

tribute

Werner Eckerskorn

The OIE was very saddened to learn of the death of Professor Werner Eckerskorn (October 1919 - May 2014).

Professor Eckerskorn was Delegate of Germany to the OIE from 1963 to 1981, during which time he served as Vice-President of the International Committee (1973-1976) and then as President from 1976 to 1979.

The OIE extends its condolences to his family and friends.



Answers:

1-c; 2-a; 3-b; 4-d

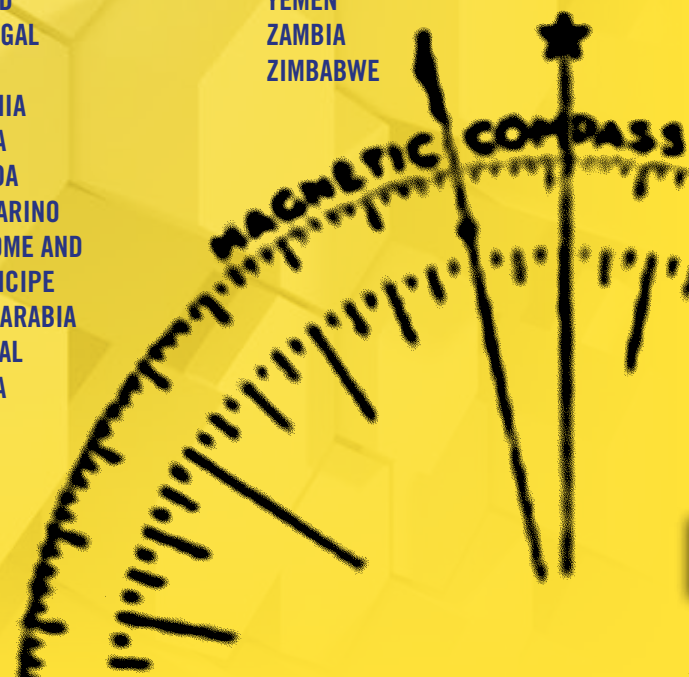
Oie members (180)

AFGHANISTAN
ALBANIA
ALGERIA
ANDORRA
ANGOLA
ARGENTINA
ARMENIA
AUSTRALIA
AUSTRIA
AZERBAIJAN
BAHAMAS
BAHRAIN
BANGLADESH
BARBADOS
BELARUS
BELGIUM
BELIZE
BENIN
BHUTAN
BOLIVIA
BOSNIA AND
HERZEGOVINA
BOTSWANA
BRAZIL
BRUNEI
BULGARIA
BURKINA FASO
BURUNDI
CAMBODIA
CAMEROON
CANADA
CAPE VERDE
CENTRAL AFRICAN REP.
CHAD
CHILE
CHINA (PEOPLE'S
REP. OF)
CHINESE TAIPEI
COLOMBIA
COMOROS
CONGO (REP. OF THE)
CONGO
(DEM. REP. OF THE)
COSTA RICA
CÔTE D'IVOIRE
CROATIA
CUBA
CYPRUS
CZECH REPUBLIC
DENMARK
DJIBOUTI

DOMINICAN REP.
ECUADOR
EGYPT
EL SALVADOR
EQUATORIAL GUINEA
ERITREA
ESTONIA
ETHIOPIA
FIJI ISLANDS
FINLAND
FORMER YUG. REP.
OF MACEDONIA
FRANCE
GABON
GAMBIA
GEORGIA
GERMANY
GHANA
GREECE
GUATEMALA
GUINEA
GUINEA BISSAU
GUYANA
HAITI
HONDURAS
HUNGARY
ICELAND
INDIA
INDONESIA
IRAN
IRAQ
IRELAND
ISRAEL
ITALY
JAMAICA
JAPAN
JORDAN
KAZAKHSTAN
KENYA
KOREA (DEM
PEOPLE'S REP. OF)
KOREA (REP. OF)
KUWAIT
KYRGYZSTAN
LAOS
LATVIA
LEBANON
LESOTHO
LIBERIA
LIBYA
LIECHTENSTEIN

LITHUANIA
LUXEMBOURG
MADAGASCAR
MALAWI
MALAYSIA
MALDIVES
MALI
MALTA
MAURITANIA
MAURITIUS
MEXICO
MICRONESIA
(FEDERATED
STATES OF)
MOLDOVA
MONGOLIA
MONTENEGRO
MOROCCO
MOZAMBIQUE
MYANMAR
NAMIBIA
NEPAL
NETHERLANDS
NEW CALEDONIA
NEW ZEALAND
NICARAGUA
NIGER
NIGERIA
NORWAY
OMAN
PAKISTAN
PANAMA
PAPUA NEW GUINEA
PARAGUAY
PERU
PHILIPPINES
POLAND
PORTUGAL
QATAR
ROMANIA
RUSSIA
RWANDA
SAN MARINO
SAO TOME AND
PRINCIPE
SAUDI ARABIA
SENEGAL
SERBIA

SEYCHELLES
SIERRA LEONE
SINGAPORE
SLOVAKIA
SLOVENIA
SOMALIA
SOUTH AFRICA
SOUTH SUDAN
SPAIN
SRI LANKA
SUDAN
SURINAME
SWAZILAND
SWEDEN
SWITZERLAND
SYRIA
TAJKISTAN
TANZANIA
THAILAND
TIMOR-LESTE
TOGO
TRINIDAD AND TOBAGO
TUNISIA
TURKEY
TURKMENISTAN
UGANDA
UKRAINE
UNITED ARAB EMIRATES
UNITED KINGDOM
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UZBEKISTAN
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YEMEN
ZAMBIA
ZIMBABWE



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New!

One Health

Scientific and Technical Review, Vol. 33 (2)



Coordinator and editor:
William B. Karesh

In recent years, the concept of 'One Health' has gained wide acceptance in the scientific community as well as the attention of the development community, policy-makers and politicians. International bodies such as the OIE, the United Nations agencies, and the World Bank have adopted a 'One Health' approach in their collaborative efforts to control avian and zoonotic influenza with pandemic potential and other diseases of animal origin on both a local and global scale. More people are acknowledging the links among wildlife, domestic animals, ecosystems and human health, and the resulting need to address threats across many sectors, as well as the importance of these relationships in global issues such as climate change and food security and safety.

In this special issue of the *Scientific and Technical Review*, governmental representatives, organisational heads and experts on these issues from around the world provide insights and experiences that lead readers through the progression of 'One Health' from concept to perspectives to practice.

Bee health and veterinarians



Coordinator and editor:
Wolfgang Ritter

Maintaining bee health is a central responsibility in beekeeping, for both professional and amateur beekeepers, because only healthy bees are able to pollinate successfully and achieve a good honey harvest. Bee losses have become an increasingly serious problem throughout the world. The reasons for the losses are manifold and range from environmental influences to pathogenic agents. Bee health has also been affected by harmful practices in worldwide trade. New parasites and pathogens have been spreading more quickly than ever before. Only if all the parties involved work together to tackle the problem will bee health be improved in the future. Government veterinarians must be knowledgeable about bees and bee diseases as they are responsible for dealing with notifiable bee diseases/pests and international trade controls. However, private veterinary practitioners must also be informed about the relationship between the physiology of bees and the pathology of honey-bee diseases, as they are responsible for prescribing and delivering the appropriate medicines required by beekeepers.

This publication provides a concise but comprehensive overview of this complex set of problems.

ORDER ONLINE NOW! www.oie.int/boutique



Read more about
the anniversary of
the OIE and test
your knowledge
on pages
15-17 and **81**



90 years of *Transparency*



WORLD ORGANISATION FOR ANIMAL HEALTH
Protecting animals, preserving our future

