Other H7 subtype viruses previously circulating in Italy were included in the analysis to rule out potential cross-reactivity with influenza A(H7N7) virus (5). HI titers ≥10 and MN titers ≥20 were considered positive; only HI-positive serum samples confirmed 3 times by MN assay were considered positive results for influenza A(H7N7) virus.

We detected antibodies against influenza A(H7N7) virus in convalescent-phase serum samples from the 3 H7 subtype-positive patients and 2 asymptomatic persons but found no seropositivity against other H7 subtype viruses (Table). Because of lack of acute-phase serum samples, we could not assess whether seropositivity for the 2 asymptomatic persons, 1 (RA32) of whom worked with poultry before the outbreak, was caused by infection acquired during the outbreak. All workers were trained and most participants, including the 2 asymptomatic influenza A(H7N7) virus–seropositive persons, reported that PPE was commonly used during culling on infected premises. Nevertheless, it is likely that worker compliance with PPE was not always 100% during the 3-week outbreak because of poor knowledge and real perception of biologic risks among workers.

Future efforts should ensure timely collection of paired serum samples from all workers involved in avian influenza outbreaks, especially when infections occur in humans. Strict compliance with recommended preventive control measures and serologic surveillance programs are crucial to avoid and eventually assess risk for infections with avian influenza viruses in persons exposed to infected poultry.

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Increase in Eyeworm Infections in Eastern Europe

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Table. HI and MN antibody titers for influenza A(H7N7) virus and other H7 subtype viruses in serum samples of 5 men, Italy, 2013*

| Person ID and phase type† | Age, y | Activity of person | Date of sample collection | Virus strain (subtype) and titer |
|--------------------------|--------|--------------------|---------------------------|---------------------------------|
|                          |        |                    | A/It/3/2013 (H7N7) | A/Tk/It/3889/1999 (H7N1) | A/Tk/It/214845/2002 (H7N3) | A/Ck/It/2837-54/2007 (H7N3) |
|                          |        |                    | HI | MN | HI | MN | HI | MN | HI | MN | HI | MN |
| 1                        | Acute  | PW, culling        | Sep 6 | 10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
|                          |        |                    | Dec 6 | 20 | 35 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| 2                        | Acute  | Culling            | Sep 6 | 10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
|                          |        |                    | Dec 11 | 20 | 62 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| 3                        | Acute  | Culling            | Sep 7 | 10 | <10 | <10 | <10 | NT | <10 | NT | <10 | NT |
|                          |        |                    | Dec 23 | 10 | 87 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| FO10‡                    |        |                    | Dec 23 | 20 | 72 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| RA32‡                    |        |                    | Dec 23 | 20 | 33 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |

*Bold indicates titers of seropositive persons (HI positive results confirmed 3 times by MN). Values for 1 of 3 MN assays that showed similar results are reported. Seropositive persons were selected from 93 persons who participated in the study among 140 persons involved in culling activities.
†Persons 1, 2, and 3 had laboratory-confirmed cases of conjunctivitis caused by infection with influenza A(H7N7) virus.
‡Asymptomatic person.
To the Editor: In the past 30 years, war in the Balkans, the fall of Communist regimes, and economic recession in Europe have undermined the economic stability of countries in eastern Europe and eventually favored occurrence of so-called neglected infections of poverty (1). Parasitic infections causing eye disease in persons living in areas with low socioeconomic standards might be caused by parasites not well known by healthcare providers.

A good example is *Thelazia callipaeda* (Spirurida, Thelaziidae) nematode infections in children and elderly persons living in rural and poor communities in countries in Europe and Asia (2). In Europe, vectors for this nematode are male *Phortica variegata* drosophilids, which feed on ocular secretions of hosts and transmit infective stage larvae to domestic and wild carnivores, lagomorphs, and humans (3). Possible outcomes of this infection include conjunctivitis, lacrimation, corneal ulcers, perforation, and blindness (3), but differentiating *T. callipaeda* infection from other ocular conditions, such as conjunctivitis-causing pathogens and allergies, can be difficult because signs and symptoms might be similar.

*T. callipaeda* was previously known as the oriental eyeworm because of its original description in countries in eastern Asia (e.g., China, Japan, and Thailand), where it has caused >1,000 cases of human infections in the past 2 decades (2). Since 1989, this nematode has also been detected in many countries in Europe, including Italy, France, Spain, Portugal, Switzerland, Germany, and Greece, as an agent of animal and human ocular infection (3). However, data on the occurrence of this parasite in countries in eastern Europe were not available until 2014.

Over the past 2 years, several autochthonous cases of ocular thelaziosis in dogs and cats (Romania, Croatia, Serbia, Bosnia and Herzegovina, Bulgaria) and foxes (Bosnia and Herzegovina) were reported (4–7) (Table). In 2016, the zoonotic potential of this parasite in those regions was further confirmed by 2 human cases of thelaziosis, one in a 36-year-old man living in Serbia (7) and one in an 82-year-old man living in Croatia (8) (Table).

We report 10 new cases of ocular infection by *T. callipaeda* in dogs living in Bulgaria (n = 9) and Hungary (n = 1). All animals had no history of travel outside their native countries and were brought to the Department of Parasitology (Stara Zagora, Bulgaria) and to a veterinary practitioner (Pécs, Hungary) with various ocular disorders (i.e., epiphora, conjunctivitis). Nematodes detected in the conjunctival sac were collected by flushing the sac with saline solution. These nematodes were then stored in 70% ethanol and morphologically identified according to the procedure of Otranto et al. (9).

Molecular characterization by using PCR amplification and sequencing of a partial region of the cytochrome oxidase subunit 1 gene were performed as described (10). Nucleotide sequences were identical to those of *T. callipaeda* nematode haplotype-1 (GenBank accession no. AM042549), which is the only haplotype circulating in animals and humans in Europe.

Our confirmed autochthonous cases of thelaziosis in Hungary and Bulgaria have extended the geographic distribution of *T. callipaeda* nematodes from neighboring countries (e.g., Bosnia and Herzegovina, Croatia, Romania and, Greece), where occurrence of the parasite in humans and animals was already documented. Cases of human thelaziosis are reported in areas where the infection is highly prevalent in animals (3). Although no large-scale prevalence study has been conducted in countries in eastern Europe, 51 (27.7%) of 184 foxes in Bosnia and Herzegovina were infected with *T. callipaeda* nematodes (5). Isolation of *T. callipaeda* eyeworms from dogs in Bulgaria and Hungary should increases awareness of medical and veterinary communities in countries in eastern Europe for this zoonotic parasitosis. Use of a One Health approach is imperative for preventing additional eyeworm infections in persons living in eastern Europe.

Table. Cases of thelaziosis reported in animals and humans in eastern Europe

| Country            | Host   | No. infected hosts | Reference |
|--------------------|--------|--------------------|-----------|
| Bosnia and Herzegovina | Fox    | 51 (5)             |           |
| Bosnia and Herzegovina | Dog    | 4 (5)              |           |
| Bosnia and Herzegovina | Cat    | 1 (5)              |           |
| Croatia            | Dog    | 2 (5)              |           |
| Croatia            | Human  | 1 (8)              |           |
| Romania            | Dog    | 1 (6)              |           |
| Serbia             | Dog    | 6 (4.7)            |           |
| Serbia             | Cat    | 2 (4)              |           |
| Serbia             | Human  | 1 (7)              |           |
| Hungary            | Dog    | 1                  | This study|
| Hungary            | Dog    | 9                  | This study|

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Febrile or Exanthematous Illness Associated with Zika, Dengue, and Chikungunya Viruses, Panama

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To the Editor: The earliest clinical cases of Zika virus infection were reported from continental South America in

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