are needed to determine the role of nasal carriage in *B. holmesii* bacte-
remia. That no *B. holmesii* infections occurred after rituximab was stopped suggests that rituximab played a role in the recurrent infections. In cases of recurrent infection or bacteremia, na-
sal carriage should be assessed, and the interruption of rituximab should be considered by physicians.

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References

1. Njamkepo E, Bonacorsi S, Debruyne M, Gibaud SA, Guillot S, Guiso N. Signifi-
org/10.1128/JCM.01272-11


3. Rodgers L, Martin SW, Cohn A, Budd J, Marcon M, Terranella A, et al. Epidemiologic and laboratory features of a large outbreak of pertussis-like illnesses associated with co-circulating *Bordetella holmesii* and *Borde-
org/10.1093/cid/cis888

org/10.1111/j.1574-695X.2011.00911.x

org/10.3201/eid1807.120130

setts patients with pertussis-like symp-

tella holmesii* bacteremia in a renal trans-
plant recipient: emergence of a new patho-


9. Fry NK, Duncan J, Pike R, Harrison TG. Emergence of *Bordetella holmesii* infec-
tions in the United Kingdom 2010. In: Abstracts of the 9th International *Borde-
tella* Symposium, Baltimore, Maryland, USA; 2010 Sep 30–Oct 3. Abstract 98.

ning cause of septic arthritis. J Clin Mi-
org/10.1128/JCM.06437-11

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Another Dimension

Thoughtful essays, short stories, or poems on philosophical issues related to science, medical practice, and human health. Topics may include science and the human condition, the unexpected side of epidemic investigations, or how people perceive and cope with infection and illness. This section is intended to evoke compassion for human suffering and to expand the science reader’s literary scope. Manuscripts are selected for publication as much for their content (the experiences they describe) as for their literary merit.

Rickettsia africae in Amblyomma variegatum Ticks, Uganda and Nigeria

To the Editor: *Rickettsia africae* is the most widespread spotted fever group (SFG) rickettsia in sub-Saharan Africa, where it causes African tick-bite fever (1), an acute, influenza-like syndrome. The number of cases in tourists returning from safari in sub-Saharan Africa is increasing (1). In western, central, and eastern sub-Sa-
haran Africa, *R. africae* is carried by *Amblyomma variegatum* (Fabricius, 1794) ticks (2); usually associated with cattle, this 3-host tick also can feed on a variety of hosts, including humans (2). *R. africae* has not been re-
ported in Uganda and rarely reported in Nigeria (3,4). Our objective was to determine the potential risk for human infection by screening for rickettsial DNA in *A. variegatum* ticks from cat-
tle in Uganda and Nigeria.

In February 2010, ticks were col-
lected from zebu cattle (*Bos indicus*) from 8 villages in the districts of Ka-
beramado (Adekta [1°81′N–33°22′E], Awimon [1°66′N–33°04′E], Kalobo [1°88′N–33°25′E], Odidip [1°90′N–33°30′E], Odikara [1°91′N–33°30′E], and Ollimo [1°75′N–33°38′E], and Dokolo (Alela [2°09′N–33°16′E], and Olilimo [1°75′N–33°30′E], and Angeta [1°87′N–33°10′E]) in Uganda and, in June 2010, in 3 villages (Manggan [9°14′N–8°93′E], Ruff [9°43′N–9°10′E], and Tambes [9°38′N–9°38′E]) in the Plateau State in Nigeria (Figure). This con-
venience sample was obtained as part of other ongoing research projects in both countries. Ticks were preserved in 70% ethanol and identified morpho-
logically to the species level by using taxonomic keys (5). Because the anatomic features do not enable an ob-
jective assessment of the feeding sta-
tus of adult male ticks, engorgement level was determined only in female tick specimens and nymphs.
After tick identification, DNA was extracted from ticks by using QIAamp DNAeasy kits (QIAGEN, Hilden, Germany). Two PCR targets were assessed within each sample; the primer pair Rp.CS.877p and RpCS.1258n was selective for a 396-bp fragment of a highly conserved gene encoding the citrate synthase (gltA) shared by all *Rickettsia* spp. ([6]); the Rr190–70p and Rr190–701n primer pair amplified a 629–632-bp fragment of the gene encoding the 190-kD antigenic outer membrane protein A (ompA), common to all SFG rickettsiae ([6, 7]). DNA extracted from 2 *A. variegatum* tick cell lines (AVL/CTVM13 and AVL/CTVM17), previously amplified and sequenced by using primers for *Rickettsia* 16S rRNA, ompB, and sca4 genes revealing >98% similarity with *R. africae* ([8]), was used as a positive control. Negative controls consisted of DNA from 2 male and female laboratory-reared *Rhipicephalus appendiculatus* ticks and distilled water. DNA of positive samples was recovered, and confirmation of amplicon authenticity was obtained through sequence analysis by using nucleotide BLAST (www.ncbi.nlm.nih.gov/BLAST).

A total of 39 ticks were collected in Uganda (32 adult males, 5 females, and 2 nymphs), and 141 were collected in Nigeria (80 males, 59 females, and 2 nymphs); all were identified as *A. variegatum* ([online Technical Appendix Table](wwwnc.cdc.gov/EID/articlepdfs/19/10/13-0389-Techapp1.pdf)). SFG rickettsiae DNA was amplified in 26 (67%) of 39 ticks from Uganda and 88 (62%) of 141 ticks from Nigeria by using the ompA gene primers; amplicons of the gltA genes were obtained in 16 (41%) of 39 ticks and 84 (60%) of 141 ticks, respectively ([online Technical Appendix Table]). Overall, 81 (45%) of 180 ticks were positive by gltA and ompA PCRs ([online Technical Appendix Table]). DNA sequences of the 22 gltA and ompA products from Uganda and the 22 from Nigeria showed 100% similarity with published sequences of *R. africae* ([GenBank accession nos. U59733 and RAU43790, respectively]). For both countries, ticks positive for *Rickettsia* spp. and SFG rickettsiae DNA were male and female specimens ([online Technical Appendix Table]). Among females, both unengorged and engorged specimens contained DNA from rickettsiae and SFG rickettsiae ([online Technical Appendix Table]).

These findings represent a novelty for Uganda. With reference to Nigeria, our results contrast with the prevalence of 8% recorded in a similarly sized sample (n = 153) of *A. variegatum* ticks collected from cattle in the same part of the country ([3]); this discrepancy might be the result of previous targeting of the rickettsial 16S rDNA gene. In the study reported here, the SFG-specific ompA PCR proved to be more sensitive than gltA for detecting rickettsiae DNA, as has also been reported in previous work ([9]). Although finding *R. africae* DNA in engorged female and nymphal tick specimens might be attributable to prolonged rickettsemia in cattle ([10]), the presence of *R. africae* in distinctly unengorged female ticks indicates the potential for *A. variegatum* ticks to act as a reservoir of this SFG rickettsia ([2]).
This study extends the known geographic range of *R. africae* in *A. variegatum* ticks in sub-Saharan Africa. The number of potentially infective ticks recorded in Uganda and Nigeria suggests that persons in rural areas of northern Uganda and central Nigeria might be at risk for African tick-bite fever. Awareness of this rickettsiosis should be raised, particularly among persons who handle cattle (e.g., herders and paraveterinary and veterinary personnel). Physicians in these areas as well as those who care for returning travelers, should consider African tick-bite fever in their differential diagnosis for patients with malaria and influenza-like illnesses.

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References


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## Ongoing Measles Outbreak in Orthodox Jewish Community, London, UK

To the Editor: Measles outbreaks have been reported in Orthodox and ultra-Orthodox Jewish communities across Europe and Israel (1–5). We describe an ongoing outbreak within the largest European Orthodox Jewish community (including a Charedi population of 17,587), based in London, focused in Hackney (6). Vaccination coverage within this community is lower than in the general population of London, causing low herd immunity and outbreaks of vaccine-preventable diseases. Vaccination coverage data within the communities cannot be extrapolated, because membership is not classified as an ethnicity and not collected within health electronic recording systems. However, general practice surgeries in Hackney known to have high proportions of Orthodox Jewish patients have considerably lower vaccination coverage (55%–75% of patients 24 months of age had received measles, mumps, rubella [MMR] vaccine in 7). Vaccination coverage data within the community cannot be extrapolated, because membership is not classified as an ethnicity and not collected within health electronic recording systems. However, general practice surgeries in Hackney known to have high proportions of Orthodox Jewish patients have considerably lower vaccination coverage (55%–75% of patients 24 months of age had received measles, mumps, rubella [MMR] vaccine in 3rd quarter of 2012) compared with the London average (87.3%) (7). Health beliefs, family size (the average Charedi household size is 6.3 persons), and underutilization of immunization services contribute to low coverage (8,9).

The outbreak clinical case definition was taken from Public Health England’s guidance (10). It also included membership in the Orthodox Jewish Community.
Rickettsia africae in Amblyomma variegatum Ticks, Uganda and Nigeria

Technical Appendix

Technical Appendix Table. Results of PCR screening of Amblyomma variegatum ticks, Uganda and Nigeria, 2010*

<table>
<thead>
<tr>
<th>Study area</th>
<th>No. ticks Identified</th>
<th>gltA</th>
<th>ompA</th>
<th>gltA and ompA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M  F  N</td>
<td>Total</td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Uganda, n = 39</td>
<td>32  5 (4)  2</td>
<td>16/39</td>
<td>12/32</td>
<td>4 (3)/5 (4)</td>
</tr>
<tr>
<td>Nigeria, n = 141</td>
<td>80  59 (28)  2 (1)</td>
<td>84/141</td>
<td>45/80</td>
<td>38 (19)/59 (28)</td>
</tr>
<tr>
<td>Total, n = 180</td>
<td>112  64 (32)  4 (1)</td>
<td>100/180</td>
<td>57/112</td>
<td>42 (22)/64 (32)</td>
</tr>
</tbody>
</table>

*M, male; F, female; N, nymph. Numbers in parentheses indicate engorged female ticks and nymphs.