Aedes (Stegomyia) albopictus (Skuse), a Potential New Dengue Vector in Southern Cameroon

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Aedes albopictus, a mosquito vector of Dengue virus, has been recorded for the first time in Cameroon. Entomologic surveys in 2000 demonstrated that it is widespread in southern Cameroon, colonizing a wide variety of breeding sites and biting humans in every district surveyed. The presence of this vector increases the risk for emergence of dengue in Cameroon.

Materials and Methods

Study Sites

Surveys were conducted in the two main cities of Cameroon: Douala, pop. 1,400,000 (4°00'N, 9°45'E), commercial harbor and largest city in Cameroon, and Yaoundé, pop. 1,300,000 (3°45'N, 11°30'E) the capital city, located at an altitude of 800 m. Entomologic studies were also conducted in Campo (2°30'N, 9°50'E; pop. 4,000), Edea (3°45'N, 10°10'E; pop. 100,000), and Bafia (4°45'N, 11°15'E; pop. 50,000).

Larvae and Adult Mosquito Collections

Larval development sites of mosquitoes were investigated in four districts in Yaoundé (Gare, Cité Verte, Brasseries, and Biyemassai), four districts in Douala (Dibom, New Bell, Bonaberi, and Makepe), and three districts in Edea and Bafia. Approximately 20 potential breeding sites containing water were sampled in each district in Yaoundé and Douala; an average of seven breeding sites were sampled in each district in Edea and Bafia. A breeding site was recorded as positive when it contained mosquito larvae or pupae, whatever the species.

Biting behavior of mosquitoes was checked by five adult volunteers in the districts of Yaoundé, Douala, and Campo. These volunteers collected mosquitoes landing on their arms or legs from 5:00 to 6:30 p.m. All surveys were conducted in October and November 2000, at the end of the long rainy season.

Larvae and adults were identified by the morphologic identification keys and morphologic descriptions of African Aedes species (11-13). Male genitalia were dissected and examined under a microscope.

Results

Ae. albopictus was present in all five towns and in every district sampled. Species identification was confirmed on larvae and adult males and females. Of the positive larval development sites sampled, 75% of 36 in Yaoundé and 45% of 53 in Douala contained Ae. albopictus larvae. Ae. albopictus was found in five breeding sites in Edea and seven in Bafia (Table). The volume of water in Ae. albopictus-positive breeding sites ranged from 50 mL to 100 L. Species found together in...
Aedes albopictus is a competent vector for DV. Because this disease is expanding in the world (17), data are needed on the actual distribution of Aedes albopictus throughout Cameroon and the potential risk for transmission of arbovirus. Surveillance of used tires, which seem to be its preferred breeding sites, can provide maximum information on species distribution at the lowest cost-effective rate. The presence of this vector, in association with Aedes aegypti, increases the risk for emergence of dengue in Cameroon.

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References


<table>
<thead>
<tr>
<th>Types of breeding sites containing water</th>
<th>Number of positive sites sampled of each type</th>
<th>Percent Positive (%)</th>
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<tbody>
<tr>
<td>Used tire</td>
<td>36/77</td>
<td>47</td>
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<tr>
<td>Plastic container</td>
<td>7/27</td>
<td>26</td>
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<td>Can and broken bottle</td>
<td>9/30</td>
<td>30</td>
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<td>Plastic cup</td>
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<td>200-L barrel</td>
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