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COPTOTERMES FORMOSANUS (ISOPTERA: RHINOTERMITIDAE)

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The Formosan subterranean termite (FST), *Coptotermes formosanus* Shiraki (Isoptera: Rhino-
termitidae), was first introduced to New Orleans after World War II inside infested cargo returning
from the Orient (La Fage 1987). For the past 60
years, they have spread throughout the New Or-
leans metro area, displaced native subterranean
termite species, and significantly damaged build-
ings, trees, boats, and railroad ties in the process.

To help combat the problem, the U.S. Department
of Agriculture-Agricultural Research Service
(USDA-ARS) provided funding for treating build-
ings in a 50-block area of the French Quarter in
New Orleans to determine if an area-wide subter-
ranean termite control program is capable of re-
ducing overall populations. Since 1998, populations
have been reduced based on structural inspec-
tions, termite activity inside independent moni-
toring stations installed throughout the French
Quarter, and the overall number of alates (winged reproductives) recovered from insect glue boards
attached to streetlights throughout the French
Quarter (Lax & Osbrink 2003). However, alates
are still being captured in significant numbers in-
side selective areas of the French Quarter and
along the borders of this treatment zone.

Each year during May and June, untold num-
bers of male and female alates disperse through-
out the area in the early evening and tend to
congregate around light sources when present. In-
formation on how far they are capable of flying
from a dispersal point was virtually unknown, es-
pecially in a large urban area. During field obser-
vations in early 2004, it appeared that FST alates
were flying across the Mississippi River with the
aid of prevailing winds and into the French Qua-
ter. To establish if alates were dispersing into the
treatment zone from bordering areas, alates were
marked with fluorescent visible powders (Shan-
non Luminous Materials, Inc., Santa Ana, CA)
during two dispersal flights on different evenings
at a selected site of known termite activity across
the Mississippi River, located directly to the south-
east of the French Quarter. In cooperation with
USDA-ARS, 445 rectangular (20.7 cm × 10.2 cm)

![Fig. 1. Flight distances of three Formosan subterra-
nean termite alates during dispersal flights across the
Mississippi River in early June 2004 (Source of color-in-
frared photograph: National Aerial Photography Pro-
gram, Jan. and Feb. 1998; courtesy of 3001-The Spatial
Data Company).](image-url)
Historically, the only documented standard for maximum FST dispersal was a horizontal flight distance of 460 m at 2.2 m/sec (Ikehara 1966). These alates were visually observed in a large courtyard-type area located in Japan. Other studies have shown that the FST is capable of infesting high-rise buildings (>40 m high) with the aid of ocean current winds (Su et al. 1989). However, the accepted horizontal dispersal distance for the FST has always been approximately 100 m (Higa & Tamashiro 1983). Our results show that the FST is capable of flying almost twice the standard maximum (460 m) distance. At the same time, alates were able to fly across the Mississippi River with the aid of low wind speeds (<1 m/sec). These data have shown how re-colonization is possible in a treatment zone, such as the French Quarter in New Orleans, particularly during FST dispersal flight activity. In addition, these data represent an important factor to consider when evaluating an area-wide termite treatment project.

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**SUMMARY**

Results from two separate mark-recapture trials revealed that Formosan subterranean termite, *Coptotermes formosanus* Shiraki (Isoptera: Rhinotermitidae), alates are capable of flying nearly one kilometer across the Mississippi River and into the historic French Quarter. This is the first documented mark-recapture study with alates on this scale, and our results represent a new *C. formosanus* flight distance record.

**REFERENCES CITED**


