

FACE-OFF OF THE CENTURY



AMERICAN VS. GERMAN

**COCKROACH CHAMPIONSHIP:
TOUGHEST TO KNOCK OUT**



**AMERICAN COCKROACH TRAINER:
DR. AUSTIN "THE SCORPION" FRISHMAN**

**GERMAN COCKROACH TRAINER:
PAUL "RUNG MY" BELLO**



13-ROUND BATTLE ROYALE • PMP FACE-OFF ARENA • MAY 2014

COCKROACH CHAMPIONSHIP

Welcome to your ringside seat at the Cockroach Championship. Which cockroach species is the toughest to knock out (KO) American or German?

In the blue corner, we have the American cockroach — bigger and harder hitting. Many expect the American to take advantage of its superior size and strength by going for an early knockout.

In the red corner, we have the wily German cockroach — quick and elusive. The German will try to leverage its evasiveness to wear down its adversary. If this championship bout goes the distance, it will be

an advantage for the German.

The corner men facing off in this battle royale co-authored *The Cockroach Combat Manual II*, available at the PMP Bookstore at mypmp.net/shop. The American's corner man is Dr. Austin "The Scorpion" Frishman, a PMP Hall of Famer. In the German's corner is Paul "Rung My" Bello, a longtime pest management professional (PMP) and retired boxer.

PMP's readers will decide the cockroach champ (see sidebar on page 28), after these two combatants go tarsi to tarsi in a 13-round battle royale.

As ring announcer Michael Buffer says: *Let's get ready to ruuuuumble!*

TALE OF THE TAPE

American Cockroach *Periplaneta americana*

NICKNAMES: Water bug, Palmetto bug and Bombay canary

SIZE: Typically 1.5 in. or longer

COLOR: Reddish-brown to tan

MARKINGS: None

EGG CAPSULES: Reddish-brown to black, deposited in various locations; might cover egg cases in debris

NUMBER OF EGGS IN EACH CAPSULE: Typically 12 to 16 eggs; about 60 capsules per lifetime

TIME TO MATURITY: About 400 days to 2 years from hatch to reproductive adult

ANNUAL DESCENDANTS: As many as 800 from one female. Most egg capsules are deposited in early spring and hatch within six to eight weeks. The greatest numbers of adults are observed in summer and fall.

PREFERRED HABITATS: Generally, they're found in damp areas such as basements, crawlspaces and service ducts. They also live in sewers and sometimes enter structures through sewage pipes and drains. They're often found in toilets, bathroom sinks and cabinets in the vicinity of sewer drains.

Source: Cockroach Combat Manual II, coauthored by Dr. Austin M. Frishman and Paul J. Bello. It's available at the PMP Bookstore at mypmp.net/shop.



TALE OF THE TAPE

German Cockroach *Blattella germanica*

NICKNAMES: Steam fly and Croton bug (Large numbers appeared shortly after the 1842 completion of the 41-mile Old Croton Aqueduct, which supplied water to New York City.)

SIZE: Typically 0.5 in. to 0.63 in.

COLOR: Light brown, tan or tawny

MARKINGS: Two dark or black longitudinal stripes extending from the pronotum rearward on the back

EGG CAPSULES: Yellowish to reddish-brown; carried by the female until ready to hatch

NUMBER OF EGGS IN EACH CAPSULE: Typically 30 to 48 eggs; about four to eight capsules per lifetime

TIME TO MATURITY: About 36 days from hatch to reproductive adult

ANNUAL DESCENDANTS: As many as 400,000 from a single female

PREFERRED HABITATS: Cooking areas close to food and moisture sources; any warm, moist location. They tend to aggregate near warm water pipes; under sinks; in base cabinets, stoves, and hot plates; and behind refrigerators

Source: Cockroach Combat Manual II, coauthored by Dr. Austin M. Frishman and Paul J. Bello. It's available at the PMP Bookstore at mypmp.net/shop.





AMERICAN COCKROACH: (aka Joe Lewis)



These public health pests are so die-hard they seem to mock PMPs and their customers.

Dr. Austin M. Frishman Contributor

It's not that I don't understand or respect the mighty German cockroach. I'm well aware, for example, that when it comes to reproductive capacity and number of reported infestations, the German cockroach handily beats the American — but numbers alone do not make one *the toughest to completely knock out*.

We aren't judging this face-off by how many cockroaches of each species pest management professionals (PMPs) can kill. This Cockroach Championship bout is about how many cockroaches of each species PMPs leave behind that can rebound. And when it comes to measuring the degree of difficulty to achieve annihilation, the American cockroach wins gloves down versus the German — based on my 55 years of experience in every state in the U.S., as well as Bermuda, the Caribbean, Australia and more than 40 countries.

I recall many German cockroach fights that required countless man hours, day and night. Vacuuming, drilling wall voids and dusting, as well as using insect growth regulators, baits and ultra-low-volume spraying. Sometimes we had to throw every punch we had. But in the end, we always won, eliminating every German cockroach.

The American cockroach, however, seems to mock PMPs and their customers with its undying persistence. Sometimes, 15 years after initiating a consistent effort to eliminate American cockroaches, they remain hidden, mercilessly taunting us.

FOLLOWING ARE 13 REASONS WHY THE AMERICAN COCKROACH IS KING OF THE RING:



UNMATCHED REACH. When PMPs see one or two American cockroaches in a bathroom or kitchen, they must search 100 yards in all directions to

find and eliminate the rest. In most cases, the American cockroach invades from the exterior versus the German, which usually is carried indoors by human activity. PMPs can establish an inspect-and-quarantine program to prevent many German cockroach infestations. American cockroaches, however, spread out into sewers, trees and mulch piles, and move in and out at will.



DIVIDE AND CONQUER. American cockroaches deposit egg capsules in small, hidden areas far from where PMPs are treating problem locations where adults and large nymphs live. Whereas, if you kill a German cockroach with an egg capsule, you've killed the next generation.



WEATHER WARRIOR. Sub-zero temperatures alone usually are a KO punch to German cockroaches, but the stout Americans often survive.



SAVVY SURVIVOR. Typically, with cockroaches, the bigger their belly, the longer they can survive without food and water. PMPs can try to starve

American cockroaches for longer than a month, but still fail. The German cockroaches, on the other hand, will die of starvation and dehydration within a week or two.



ESCAPE ARTISTS. If you heat or fumigate a large structure, American cockroaches often will leave via sewer lines, escaping to return again.



DUCKING EXPERT. The American cockroach is adept at avoiding treatment. Millions of American cockroaches thrive in sewers,

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GERMAN COCKROACH: (aka Max Schmeling)

In the 1970s, pest management professionals (PMPs) were 10 times more likely to battle nasty German cockroach infestations than American cockroaches.

In many cases, the German cockroaches were taking over commercial and residential accounts. Sure, we'd run into the Americans from time to time, but not nearly as often or as great numbers as the Germans we battled far more frequently. Forty years later, not much has changed.

A quick look at typical glue-board catches demonstrates the head-spinning difference in population dynamics between German and American cockroaches. The accompanying Photo 1 shows a sticky trap laden with German cockroaches less than 24 hours after being placed in a kitchen cabinet. Photo 2 shows a typical, mostly empty, sticky trap at an American cockroach-infested account.

Even though a picture is worth 1,000 words, I'll continue to explain because Photos 1 and 2 drive home just one of my 13 face-off supporting points (No. 13 — unmatched reproductive capacity).



Photo 1



Photo 2

Photos courtesy of Paul J. Bello

These speedy buggers are evasive, and can outnumber any opponent overnight.

Paul J. Bello Contributor

FOLLOWING ARE 13 REASONS THE GERMAN COCKROACH IS KING OF THE RING:



DIMINUTIVE SIZE. The American cockroach is bigger and stronger, but this is more of a liability than an asset. Weighing in at a fraction of its

opponent, the German cockroach is more nimble. The German's smaller size also allows it to hide in the smallest places and take advantage of harborage where the American won't fit.



EASILY TRANSPORTED. Once again, the German cockroach's smaller size is an advantage. The German is transported more easily as an unseen hitchhiker

from infested locations.



EASILY HIDDEN. Because of its small size and enviable mobility, the German cockroach can hide easily in areas that are difficult to find and treat.

These areas harbor reservoirs of Germans, leading to long-term infestations.



CRYPTO-BIOTIC. The German cockroach tends to remain hidden as it conducts regular activities. By the time a PMP sees one German, he might find he's already late to the party.



VERSATILE EATER. The German cockroach is capable of feeding on almost any food it finds. In the absence of food, the German also can survive on nonfood items, such as glue and other materials in infested locations.



BAIT ACCEPTANCE AND AVERSION.

The German cockroach has two sets of palpi to taste food prior to

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Photo 1 shows countless German cockroaches stuck to a trap. Photo 2 shows just a few American cockroaches caught in a sticky trap.



AMERICAN COCKROACH

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landfills, under slabs of large buildings and in tree holes. American cockroaches often live where PMPs have difficulty seeing and treating them.



DODGING EXPERT. Sticky traps placed indoors are not nearly as effective as early-warning monitoring systems for American cockroaches as they are for Germans. My first failed

attempt at knocking out Americans using sticky traps involved a facility where large processing drums were covered with hundreds of adult American cockroaches. I placed two dozen sticky traps and after five days didn't catch one American.



HIGHLY ADAPTABLE. Genetic diversification is a survival advantage. As any animal becomes more specialized, it's more vulnerable to elimination. German cockroaches lost their

ability to fly as they evolved to live with humans. American cockroaches can live just as well with or without humans, and have retained the ability to fly. Evolution favors the American cockroach.



VERSATILE TRAVELER. The American cockroach can fly through open windows, crawl into structures via the ground, or come up and in through sewer lines. How do you pest-proof

against the American, which can float like a butterfly one moment and go underground the next?



LONE WOLF. The German cockroach is much more dependent on humans and their cozy structures to survive than the American.



CHEWING CHAMPS. If you cap a sewer pipe with a piece of Styrofoam, American cockroaches will chew their way through it. German cockroaches, however, don't

have large enough mouthparts.



SMART & SKILLED. When the temperature drops, American cockroaches burrow deeper into open landfill garbage to survive. When the sewer levels are at their highest, the Americans return indoors.



MONEY MATTERS. The cost — time, labor and materials — to even *attempt* to KO completely American cockroaches often is beyond reason. In many cases, PMPs and their clients develop so-called acceptable thresholds, which quickly become unacceptable. **PMP**

You can reach Dr. Frishman, a PMP Hall of Famer, at pmp@northcoastmedia.net

GERMAN COCKROACH

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ingestion. These palpi must be fooled before the German will accept the bait and ingest it. Germans also commonly duck away from some bait matrices.



WITNESS PROTECTION PROGRAM. Gravid German cockroach females tend to move around structures less and usually remain hidden in harborage areas, which reduces their chance of being discovered and prevents exposure to control technologies and techniques.



MOBILE MOMS. A German cockroach mom is much more caring of its developing young than an American cockroach mom. Rather than simply deposit or glue egg

cases to a surface, abandoning her young as an American cockroach does, the more-nurturing German cockroach carries her ootheca, which protrudes from the tip of her abdomen. Each egg case protects the German's developing young, keeping them safe from contact with treated surfaces and predators.



STICKY PADS. The German cockroach has sticky pads that allow it to climb smooth and slick surfaces. The German easily navigates food preparation surfaces,

including stainless steel and glass.



STRENGTH IN NUMBERS. Aggregation pheromones, deposited and sensed with rare skill by German cockroaches, allow newly introduced cockroaches to locate harborage and family quickly, providing shelter and the strength of numbers.



HIGH-CAPACITY EGG CASES. Some German cockroach egg cases contain 50 or more developing nymphs.



TIME FLIES. Rapid development from egg to reproductive adult doubles the already-unmatched punch of the German cockroach.



CHAMPION REPRODUCTIVE CAPACITY. Finally, for the KO, one female German cockroach can have 400,000 descendants in one year. That's about 500 times the number of descendants a female American cockroach typically spawns in the same time. **PMP**

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