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Letters

Keeping track of ticks

"At the Drop of a Tick" (SN: 3/25/89, p.184) is very timely, since there seems to be a likelihood of increased rates of infection and suffering. As the father of a Lyme-disease victim, I can attest to its effects.

As your article points out, state departments of public health are unlikely to be able to advise one of where the high-risk areas are. Even if they could, what if you live in such an area? Schulze suggests that "people walk the site and look for ticks." Let me understand this — I am to walk my two-acre lot and scan for adult ticks the size of a sesame seed, or notice such insects when I go for a hike? Of course, I must keep my eyes peeled for the odd nymph, pinhead-size, as well.

No one is going to walk around all summer dressed head to toe in light-colored clothing, with socks pulled up outside their pants, drenched from the waist down in insect repellent of dubious effectiveness and possi-

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Cover: Researchers are debating the nature of today's hunter-gatherer groups, here represented by an Agta boy in the Philippines. Some contend hunter-gatherers have interacted with outsiders for centuries and have little to reveal about prehistoric lifestyles; others argue that the groups' key cultural practices have survived and can help illuminate the evolution of human culture. (Photo: Thomas N. Headland)

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bly hazardous to health. Nor will biological or chemical programs have much effect on tick distribution, except to help evolve control-resistant ticks through natural selection. I predict the decline of this disease only when the medical community has developed an effective vaccine.

Robert N. Wivagg
Bethany, Conn.

When I worked in Louisiana as a forester, I learned of a very effective way to escape tick bites. I fastened a cat flea-and-tick collar around each ankle outside my workboot. With the legs of my jeans covering the flea collars, I had created a tick death chamber on each leg. I still found ticks on my legs, but they were not attached, were dead, and never made it past my knees. I used this method every day for a year.

This trick could be a lifesaver for people who have to work outdoors in Lyme-disease areas. I'm not aware of any harmful side

effects, although long-term use or close contact with the skin might cause problems.

Nancy Sturhan
Humptulips, Wash.

"Not a bad idea," comments entomologist Durland Fish of New York Medical College in Valhalla. Thanks for passing it along.

— I. Wickelgren

As a victim of Lyme disease, I found "Tick-tock: Still no shot" interesting and informative. However, I believe there was an error in the description of Needham's research. *Borrelia burgdorferi* is a spirochete bacterium; therefore, *Amblyomma americanum*, the Lone Star tick, cannot possibly be a relative. *Ixodes dammini* (and also *I. pacificus*) is the relative.

Cornelia P. Hunt
San Francisco, Calif.

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Science on the Air

Check your local listings for exact times and dates.
(R) indicates a repeat broadcast.

May 1 (PBS) Survival Special – “The Parenthood Game” (R) Reveals 10 years' collected material on parenthood in the animal kingdom and tells how humans might learn from it.

May 2 (PBS) The Ring of Truth – “Looking” (R) Explores how the evolution of scientific tools has shaped our world.

May 2 (PBS) Frontline – “Extraordinary People” Profiles the struggle of three thalidomide children who overcame their handicaps despite government neglect and inadequate rehabilitative solutions.

May 3 (PBS) Atlantic Realm – “Island Arks” Shows ocean life from above and below the waterline and illustrates the formation of the Atlantic seas.

May 4 (PBS) Science Journal Provides timely news on the week's events in science, medicine and technology. Thursdays.

May 5 (CNN) A Conversation With Carl Sagan Ted Turner and Carl Sagan discuss topics ranging from education to time travel in this hour-long special.

May 6 (PBS) Bodywatch – “Treading Lightly” (R) Sorts through the growing variety of foot products and looks at the practice of foot massage.

May 6 (CNN) Healthweek/Science and Technology Week Both programs cover the latest medical, health, science and technology news. Saturdays.

May 6 (CNN) Update on AIDS Reports on the different ways the AIDS epidemic has affected people throughout the United States.

May 7 (PBS) Innovation – “Crimebusters” Reports on what's new in crimebusting, from DNA fingerprinting to infrared closed-circuit television.

May 9 (PBS) The Ring of Truth – “Change” (R) Explores the scientific law that matter is equivalent to energy and the experiments that show it to be true.

May 9 (PBS) Frontline – “Yellowstone Under Fire” Examines the impact of eight years of accelerated mineral, timber and tourism development on America's most famous wilderness.

May 10 (PBS) Atlantic Realm – “Ocean of Light” Shows how ocean currents link the sea and atmosphere in a global weather machine.

May 14 (PBS) Nature – “Kariba: The Lake That Made a Dent” Explores this human-made lake in southern Africa and the endangered animals it supports.

May 16 (PBS) The Ring of Truth – “Mapping” (R) Traces the history of mapmaking and the innovations that have changed it.

May 17 (PBS) Atlantic Realm – “Into the Abyss” Observes deep-sea creatures and seafloor terrain using remotely operated cameras, submersibles and diving bells.

May 18 (PBS) Pelican Rescue Tells of the people who save Florida's pelicans from the dangers of the modern world.

May 20 (PBS) Bodywatch – “Having Babies After 30” (R) Looks at the risks, including infertility, miscarriages and chromosomal abnormalities.

May 21 (PBS) Innovation – “On Trial For Your Life” Looks at alternatives to current AIDS testing techniques.

May 21 (PBS) Nature – “Amazonia: A Burning Question” (R) Looks at the World Wildlife Fund project determining the minimum critical forest area needed to protect the various forms of wildlife.

May 23 (PBS) The Ring of Truth – “Clues” (R) Follows the process scientists use to restructure the past with evidence from the present.

May 24 (PBS) Survival Special – “The Winged Messenger” Looks at the migration of the European crane and conservation efforts to preserve the wetlands where the birds rest and refuel.

May 27 (PBS) Bodywatch – “Breast Cancer” (R) Reports on diagnostic and preventive techniques and treatments.

May 28 (PBS) Innovation – “Only a Memory?” Examines research questioning the validity of memory.

May 28 (PBS) Nature – “The Flowing Oasis” (R) Explores the Nevada desert, where a narrow ribbon of water supports 70 percent of the wildlife.

May 30 (PBS) The Ring of Truth – “Atoms” (R) Traces the search for proof of the atom's existence from chemists' early experiments to electron microscopes.

May 30 (PBS) Frontline – “Babies at Risk” Investigates the allegations of political and bureaucratic neglect fueling the crisis of infant mortality and examines how health and social workers combat the conditions that imperil the lives of infants born into poverty.

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Back to basics

I hope the engineers and scientists who designed the clay liners described in “Unexpected Leakage Through Landfill Liners” (SN: 3/18/89, p.164) were embarrassed to recognize that the diffusion mode of leakage from landfills bears a striking resemblance to an experiment they probably performed during a freshman undergraduate introductory lab course – paper chromatography!

*Belinda J. Wagner
Malden, Mass.*

Dioxin dangers debated

“Dioxin: Paper's Trace” (SN: 2/18/89, p.104) reports yet another source of dioxin and presents an “on the one hand, on the other hand” description of dioxin's health risk. Without doubt we are all exposed to tiny amounts of dioxin. Nevertheless, decades of study of humans exposed to much greater amounts than we could ever get through paper have failed to demonstrate any definitive link between dioxin exposure and human cancers, reproductive health problems, immune system effects or other chronic disease. Left out of discussions about the risks based on animal studies is EPA's caveat that the lower limit on all such estimates is unknown and may approach zero.

You mention that an EPA committee concluded that epidemiologic data about dioxin are conflicting. Conflicting data mean that one set of data or the other is wrong. The significant thing about the dioxin data is that there has been no confirmation of early studies that drew associations between dioxin and human health.

If reducing human exposures to dioxin were costless, it would make sense to do so. Since it is not, in light of the existing health evidence it appears that scarce resources might better be directed at health problems other than dioxin in paper.

*Michael Gough
Senior Fellow, Center for Risk Management
Resources for the Future
Washington, D.C.*

Split-level spider

One issue concerns me in “Education by Exaggeration” (SN: 3/4/89, p.136). Entomologist May Berenbaum implies that an insect would remain physiologically and functionally the same or at least similar, even if it were to mutate into a house-sized man-eater. If an insect were to be bombarded by gamma rays, neutrons and all those other wonderful radiation products, and survive the mutation to a Colonial Cricket or Split-Level Spider, would it not be safe to assume that the insect's physiology would also change to support more efficient oxygen supplies, external skeleton support, etc.?

*Greg Smith
Chevy Chase, Md.*

Address communications to:

Editor, **SCIENCE NEWS**

1719 N St., NW

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