

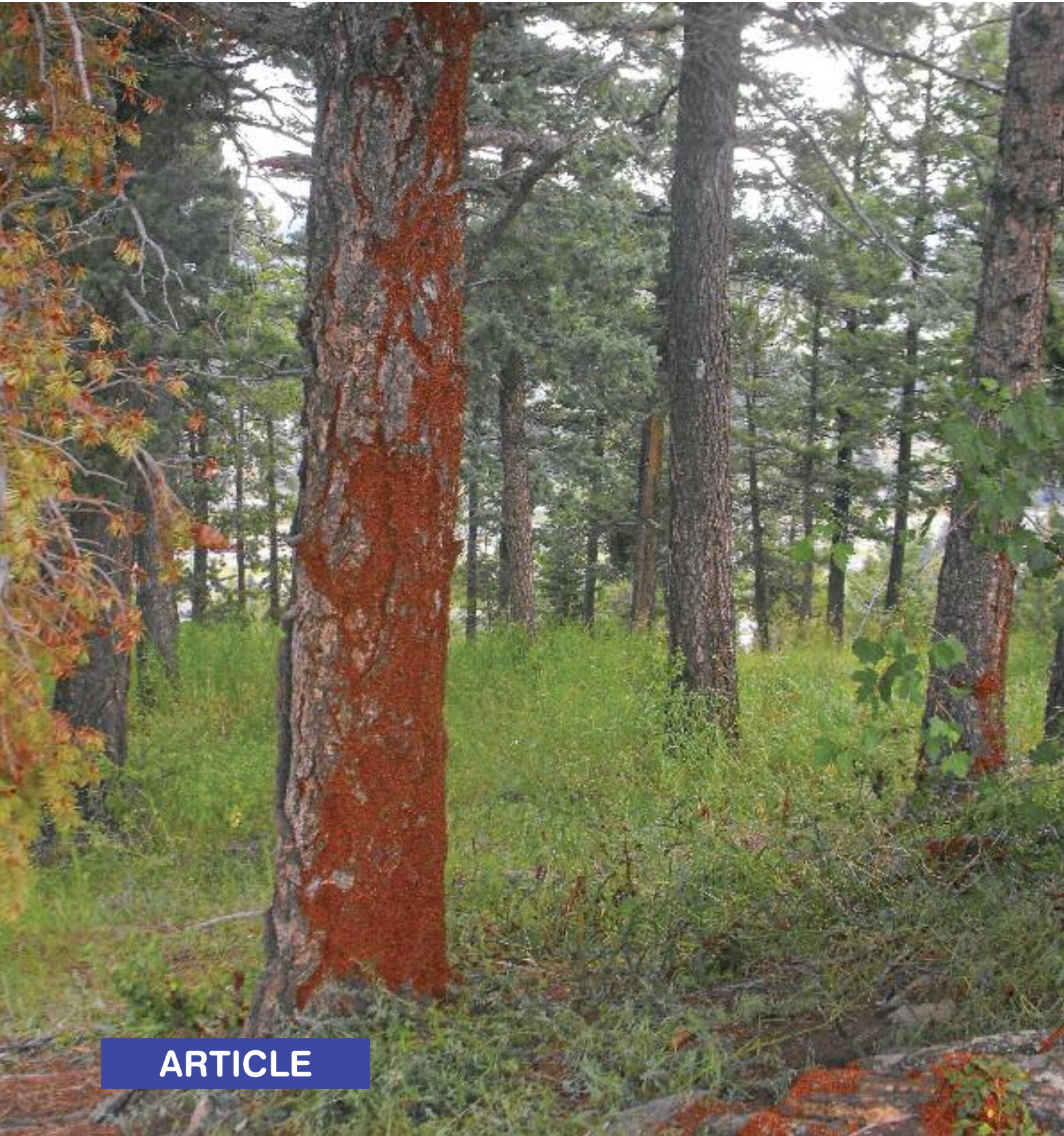
# artemina



**LADYBIRDS TAKE OVER  
WORLD FAMOUS COMPOSER...  
PASSIONATE ENTOMOLOGIST  
SWISS BANKS AREN'T ALL BAD!**

# Ladybirds take over

This year's mass occurrence of Coccinellidae in Colorado



ARTICLE



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Frank Krell has been collecting and studying beetles for over thirty years. Before Frank became Curator of Entomology at the Denver Museum of Nature & Science in Colorado in 2007, he had been working as a Research Entomologist with The Natural History Museum in London for seven years. He studied zoology, palaeontology, botany, and genetics in Tübingen, Germany, where he got his PhD with a thesis on the genitalia of cockchafers. He is an expert on the taxonomy and natural history of scarab beetles and was working for seven years on projects researching dung beetle ecology in West and East Africa. From 2003 to 2008 he was co-editor of Systematic Entomology. In 2006 he became Commissioner with the ICZN.

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“The experience of looking, is sometimes more exciting than the apparent findings. However, photographs may allow the opportunity to enjoy, observe and learn even more”  
 Ron Britton

Ronald Britton’s photographs have drawn the attention of numerous people in a variety of professions and positions, yet he says, “My greatest achievement in photography is for everyone to see something they have not seen before.” As one of the first combat artists in South Vietnam, he provided many paintings for the military museum there. The United States Library of Congress requested, and received several paintings as well; and many others were given to a new book by Ladd Publishing Company. This environment stimulated his interest to use photography to show a different view of the time and place. Today, as a professional photographer, he still enjoys this tool to share his fascination with observation.

Ladybirds are common and generally welcome guests in our world. When they are seen, they are considered by many to bring good luck. However, mass occurrences of any ‘bug’ tend to irritate people and occasionally attract attention of the press. In 2009 ladybirds made headlines in both Europe and North America. An abundant population of seven-spotted ladybeetles, *Coccinella septempunctata*, annoyed sun worshippers at the German Baltic Sea coast (Dambeck, 2009) in July and August. People occasionally get bitten by this species during mass occurrences (Eichler, 1971). In the summer of 1972, the first author experienced such himself in Albena at the Bulgarian Black Sea coast. Whereas the German ladybirds occurred in abundance over a large area, in Colorado, ladybugs formed spectacular aggregations, partially covering houses, cars, rocks and trees with a uniform red layer of beetles.

The Colorado TV station 9News has first reported on 10 July that a small community in Jefferson County in central Colorado has experienced a ‘ridiculous amount of ladybugs.’ (Vanderveen 2009). The red crust on houses and trees was formed by the native convergent ladybeetle, *Hippodamia convergens*. This is probably the most abundant and widespread of the about 480 North American coccinellids which occurs all over the United States, southern Canada, southward to Central and South America (Gordon, 1985). The broadcasted video is still online and worth watching (<http://www.9news.com/rss/article.aspx?storyid=119254>)



or <http://www.youtube.com/watch?v=wcxcXN2LPMA>) but does not reveal the name of the mountain community where it was filmed. Although we have been unable to trace the locality of the original report, co-author and photographer, Ron Britton, learned about the subtle fury of the ladybirds bite first hand when he discovered a massive aggregation of convergent lady beetles on a mountain top in Genesee Park, also in Jefferson County. Rocks, bushes and trees were covered by inestimable numbers of ladybirds. The air was filled with swarming beetles. We could spot only one copulation during a couple of hours watching. Most beetles sat relatively still, only moving when disturbed. However, Ron was bitten several times: "While lying on the ground photographing them, I received about 25 bites on each arm and tiny bumps still remain after two months." We did not spot any other species amongst the convergents. The photographs were taken at 39°42'10"N, 105°17'40"W, 2510 m asl., on July 8th and 26th. When we visited on 4 September, the situation remained mostly unchanged. However, after July, there did seem to be an increasing calm and less overall movement in the air and on the trees, bushes, and rocks. While impossible to know how many may be in this one area alone, there seems to be a settlement or slight relocating by some of the beetles, as there appear to be fewer on the more exposed surfaces and an increase in activity on the ground and fallen pine needles.

A similarly impressive accumulation of *Hippodamia convergens* was found end of July on the eastern peak on Doubleheader Mountain near Morrison (39°33'43"N, 105°15'30"W, ca. 2710 m; Gene Patton, Morrison, pers. comm.), also in Jefferson County, about 10 miles south of Genesee. Hence we have at least two or three areas in Jefferson County where such mass aggregations of convergent ladybeetles occurred this summer.

We generally assume that plenty of food for the larval population combined with favorable weather conditions can lead to a huge adult population. This year was particularly wet for Colorado. Aphids thrived to an extent that even the regional press took notice. The Aspen Daily News reported on 25 June that "Aphids take Aspen by storm" (Grant, 2009). Aspen's aphid plague happened 140 kilometers away from our Genesee and Morrison ladybird masses, but the weather patterns were similar all over Colorado. A considerable presence of aphids was reported from other places in Colorado. Without doubt, Colorado offered plenty of food for coccinellids in 2009.

*Hippodamia convergens* is known to form enormous hibernation assemblages which occasionally have been reported in the literature. This year's mass occurrence was not the first case in Colorado. In 1925, the British zoologist and travel writer, Onera Amelia Merritt Hawkes, mentioned that the convergent ladybeetles hibernated in huge numbers on Horsetooth Mountain west of Fort Collins (ca. 40°32'24"N, 105°11'48"W, 2200 m asl.). In the Swedish journal 'Fauna', Arne Johansson described an accumulation of this species on Green Mountain (ca. 39°58'56"N, 106°18'6"W) west of Boulder, at 2460 m asl. Local entomologists know well about huge hibernation assemblages of *Hippodamia convergens* in the Colorado foothills (Cranshaw & Konradieff, 2006). Similar phenomena have been reported from neighbouring New Mexico (Douglass, 1930), Montana (Chapman et al., 1955; Edwards, 1957), but also from California (Carnes, 1912; Hawkes, 1926), Texas (Rankin & Rankin, 1980), Michigan Throne, 1935), and from the eastern states of North





and South Carolina (Sherman, 1938). Most of these accumulations were found in the fall when convergent ladybeetles accumulate on isolated mountain peaks or at least the highest elevation in an area where they hide under stones to survive the winter under a thick cover of snow. Sometimes they aggregate on peaks earlier in summer (Sherman, 1938; Hagen, 1962) and later move down along creeks to form overwintering colonies at lower elevations; or they meet at mountaintops only for a couple of days to mate (Edwards, 1957). Hibernation assemblages are reported to be used for food by *Ursus arctos* (Chapman et al., 1955) and, for over a century, for commercial gain by *Homo sapiens* (Carnes, 1912). This is not surprising as the yield can be substantial. People have collected 25 to 50 kg of beetles a day (Carnes, 1912). With 42 million specimens, Hagen's (1962) number of collected ladybugs from one hibernation assemblage is amongst the record numbers of any collection of a single insect species in human history. The collection of 1.59 billion cockchafers, *Melolontha melolontha*, in Saxony, Germany, in 1868 (Scheerpeltz, 1934) is hard to beat. In the United States, convergent lady beetles are sold in nursery stores and garden centres for biological pest control.

Since the ladybird masses are still present on the top of Genesee Park in the beginning of September, over two months after they first had been discovered, and show reduced activity, we assume that these beetles formed their hibernation assemblages already in July. At over 2500 m, the first snowfall can arrive in September making any further migration risky. We will continue checking and documenting the situation.

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