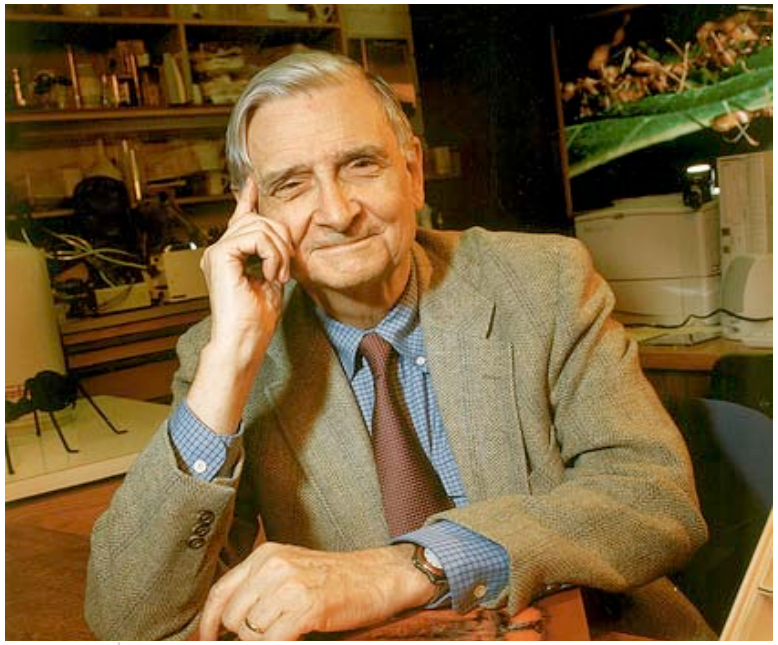
CANOPY

Presents



Biodiversity and Our Future

Healing Mother Earth

a benefit lecture for Canopy

E.O. Wilson

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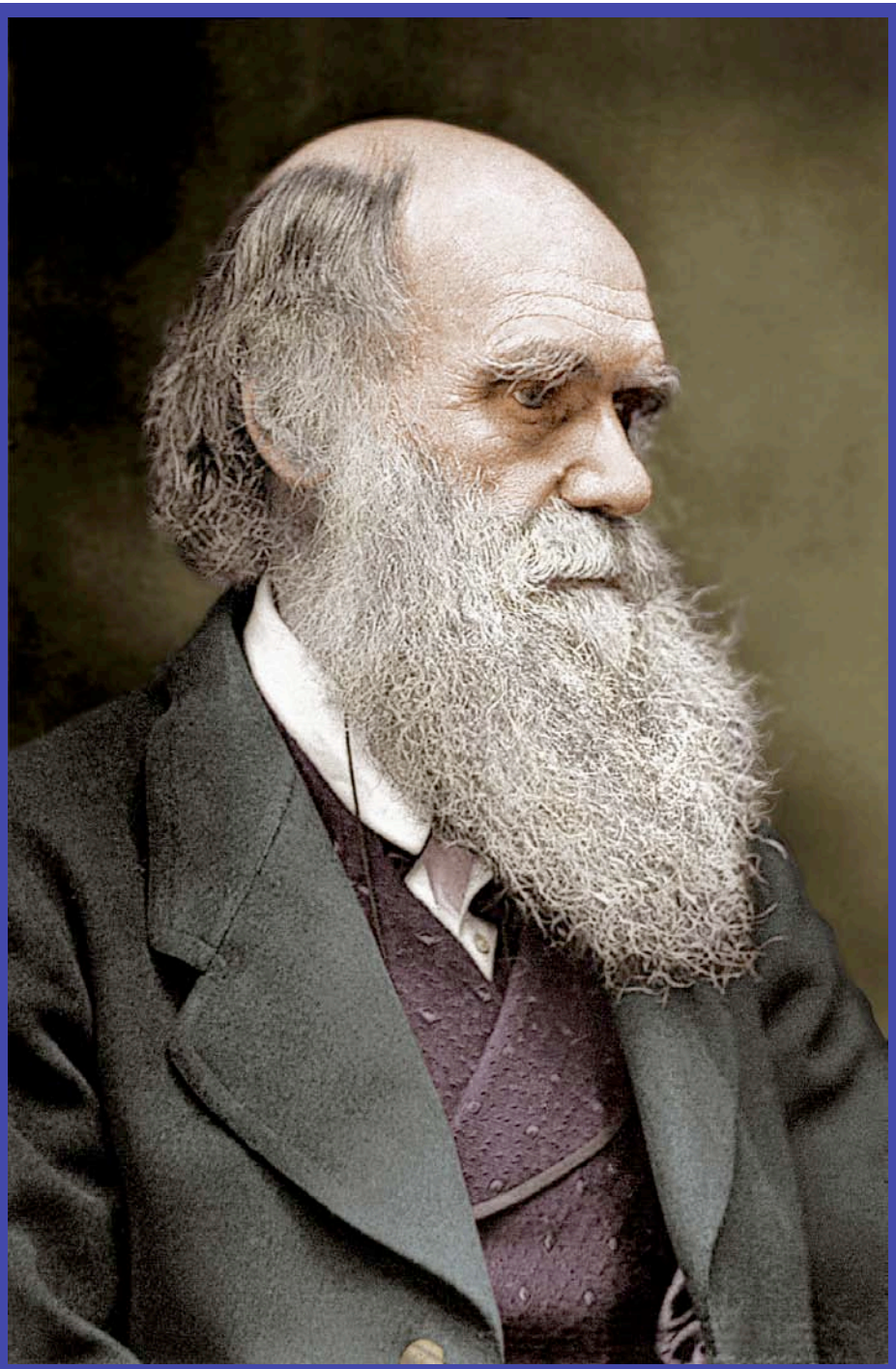
DEAN J. BIRINYI PHOTOGRAPHY

"HELPING YOU IS WHY I AM HERE"



Darwin age 65 in 1874

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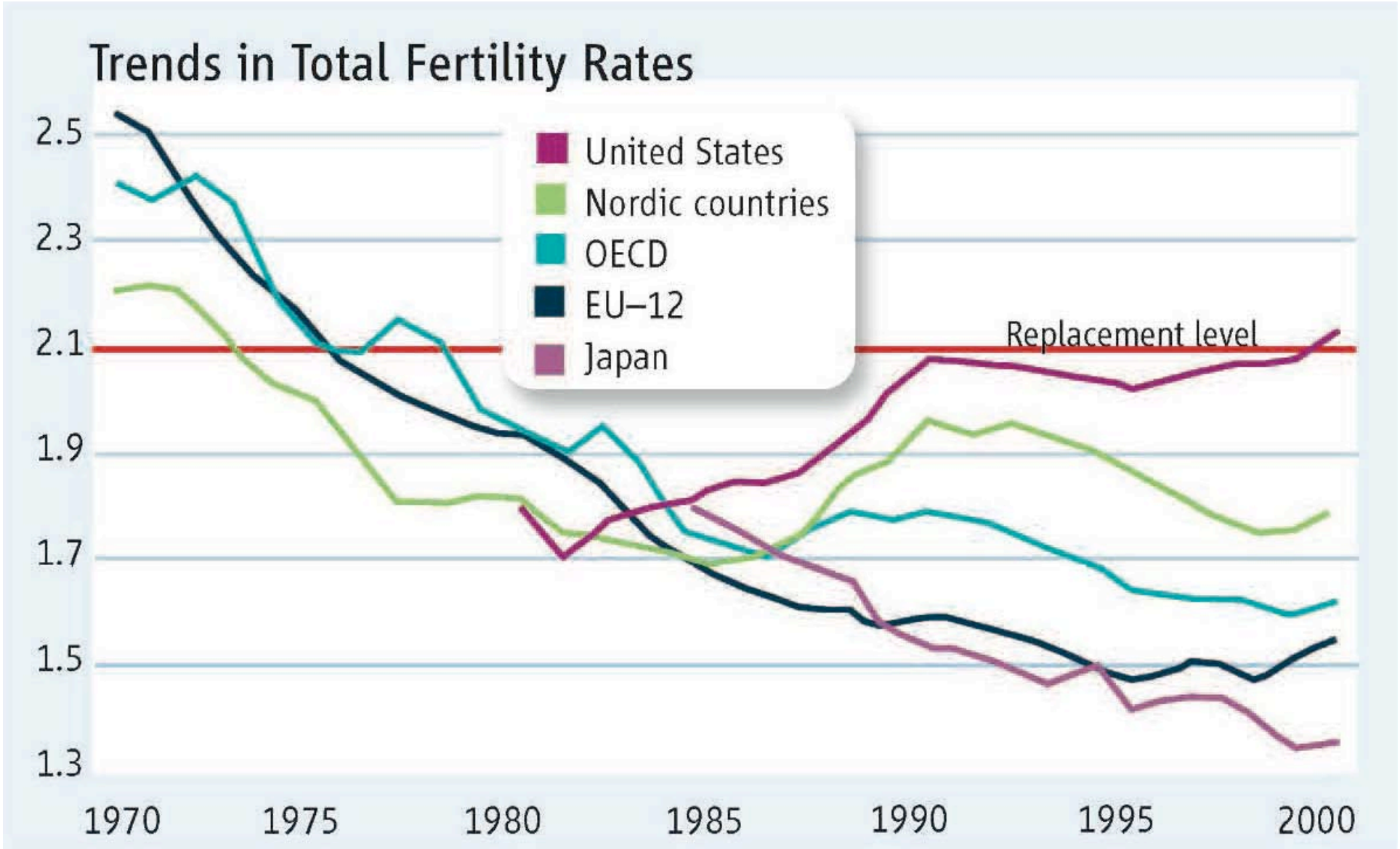
Journal of Researches into the Natural History and Geology of the Countries visited during the Voyage of H.M.S. *Beagle* Round the World (1845)

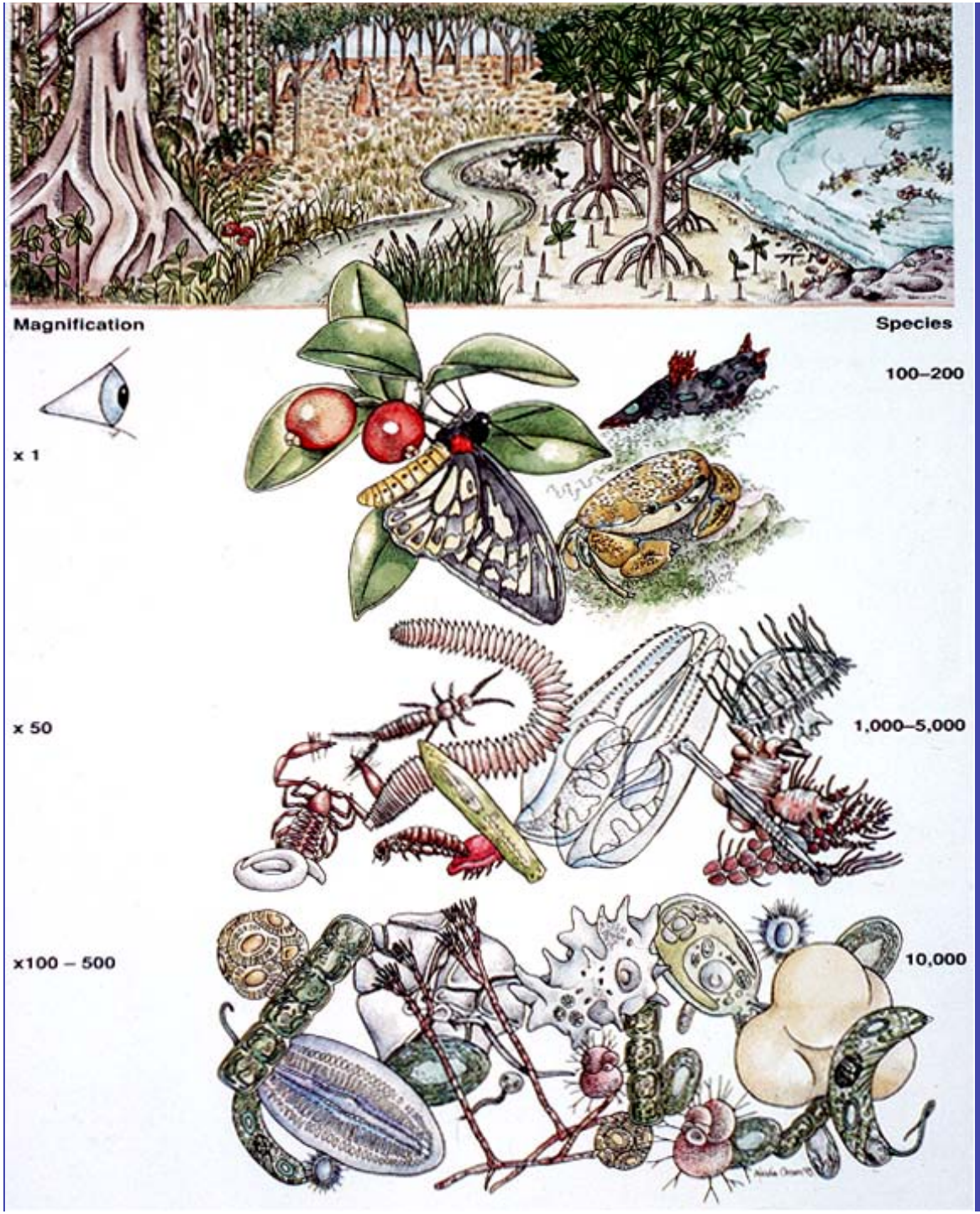
On the Origin of Species (1859)

The Descent of Man; and Selection in Relation to Sex (1871)

The Expression of the Emotions in Man and Animals (1872)



(from Michael Balter, *Science* 312, 1897, 2006)



Descending dimensions of biodiversity

(from Andrew Beattie, *Australia's Biodiversity*, 1995)

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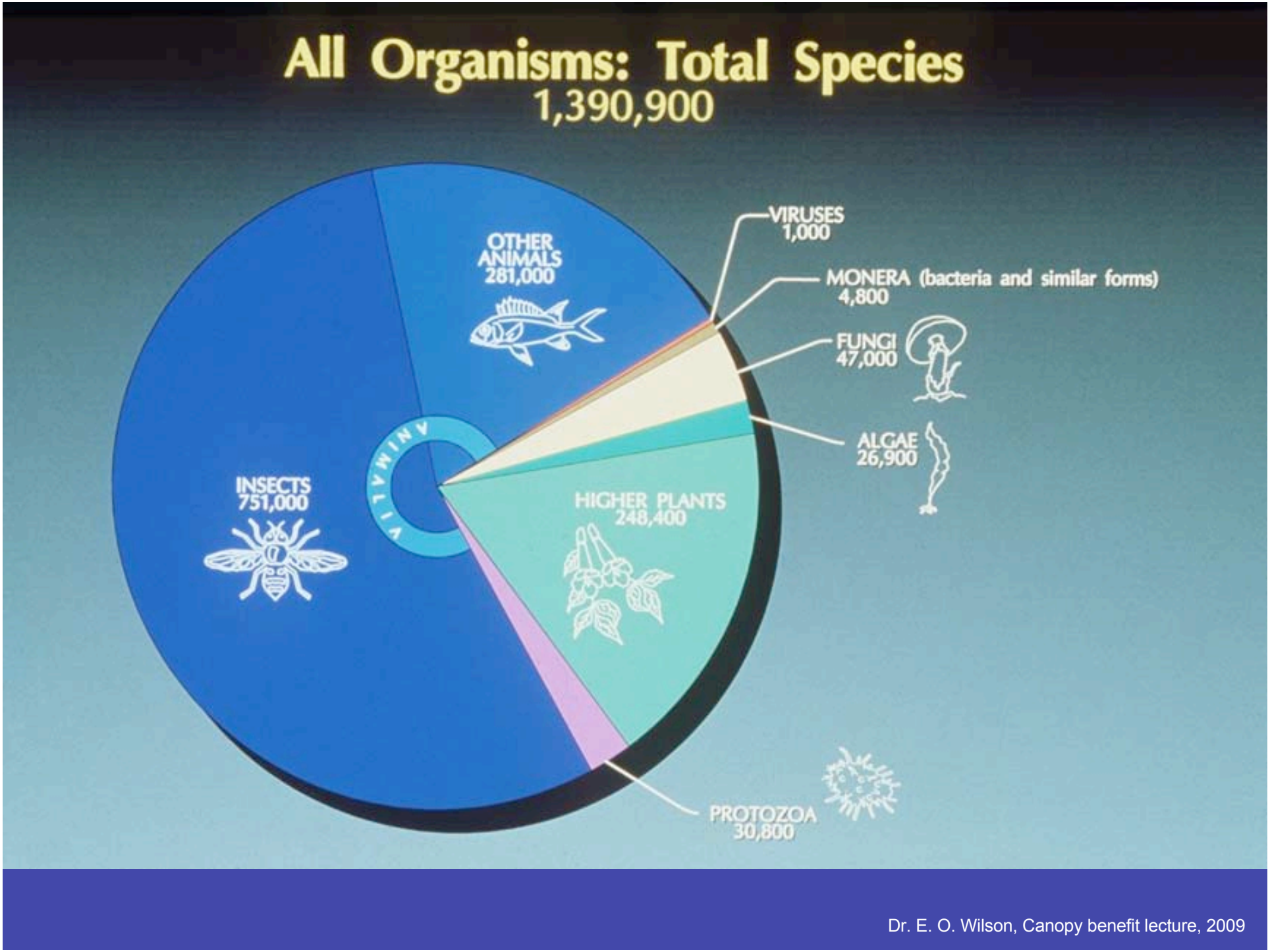

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The Species-Scape

(from Quentin Wheeler, based on data from E. O. Wilson)

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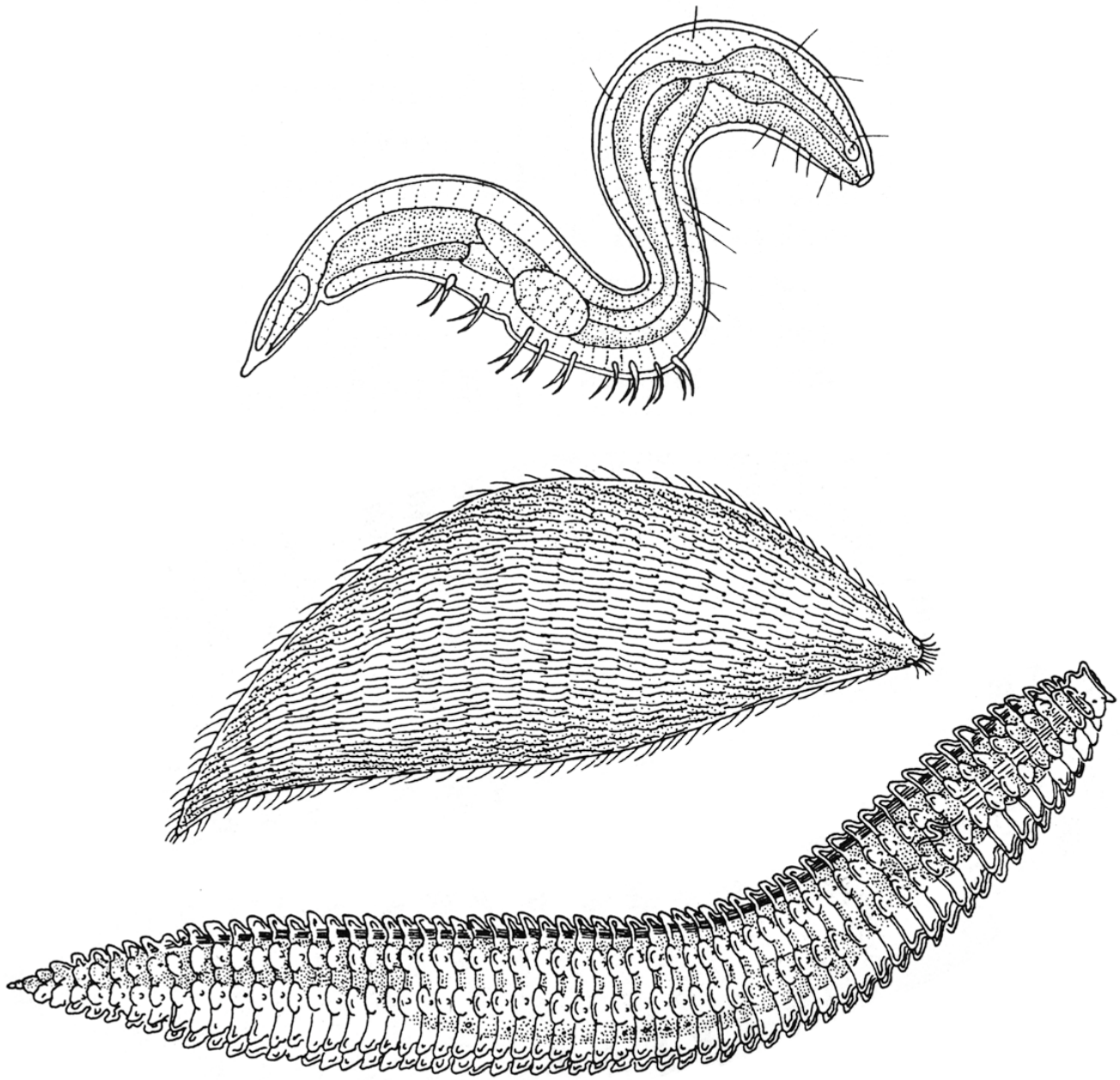
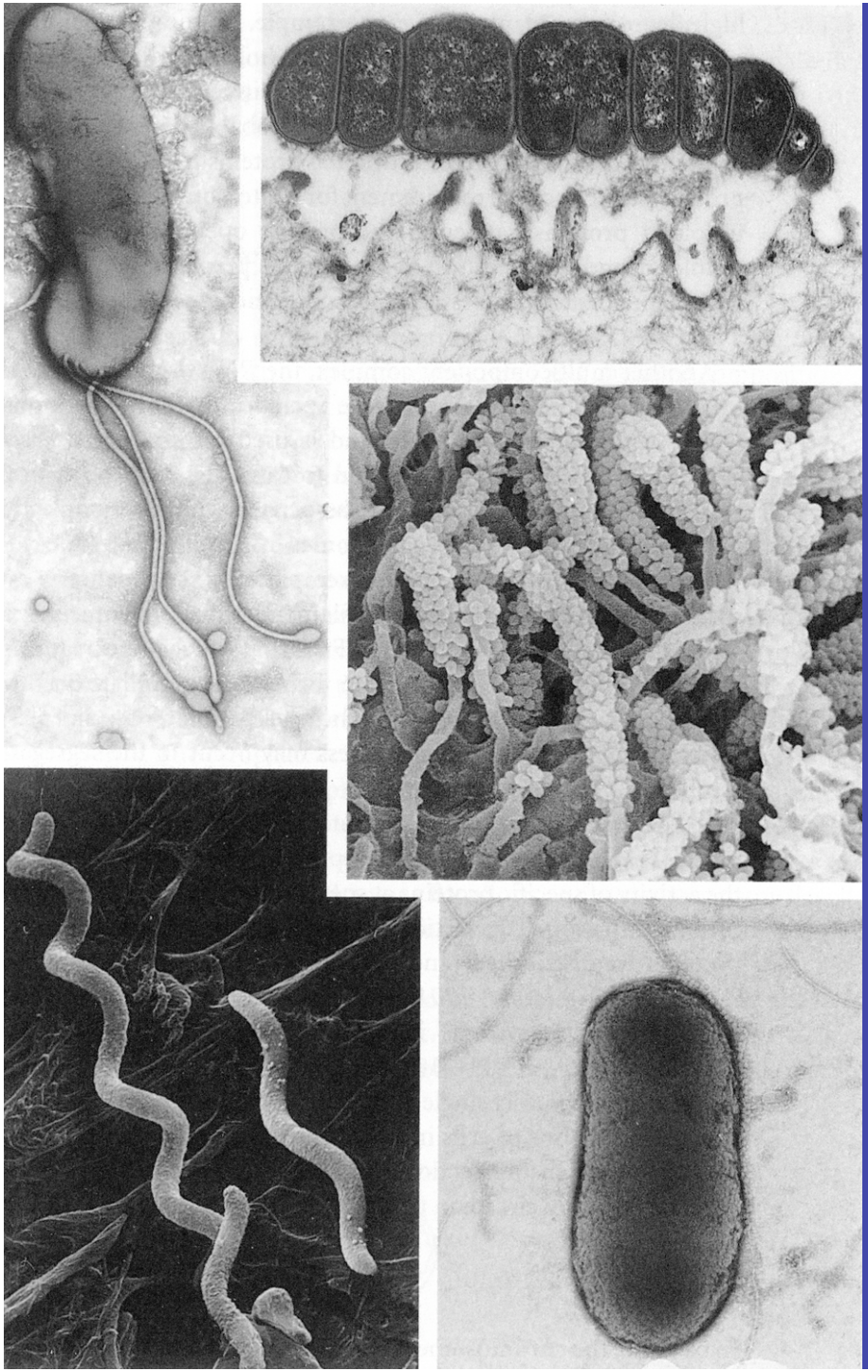


Three species of nematodes (roundworms), specialized variously for a free-living or parasitic existence.

(from Richard C. Brusca and Gary J. Brusca, *Invertebrates*, Sunderland, MA: Sinauer Associates, Inc., 1990, p. 350)



A medley of bacteria. The spiral species at bottom left is a free-living aquatic species. The rest are inhabitants of various parts of the human alimentary tract; at bottom right is *Escherichia coli*, common in polluted water and a key species in molecular biology research.

(from Paul Singleton, *Bacteria in Biology, Biotechnology and Medicine*, 6th ed., Hoboken, NJ: John Wiley & Sons, 2004, p. 12)

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Viruses: Gene weavers of life

(from Garry Hamilton, *Nature* 441, 683, 2006)

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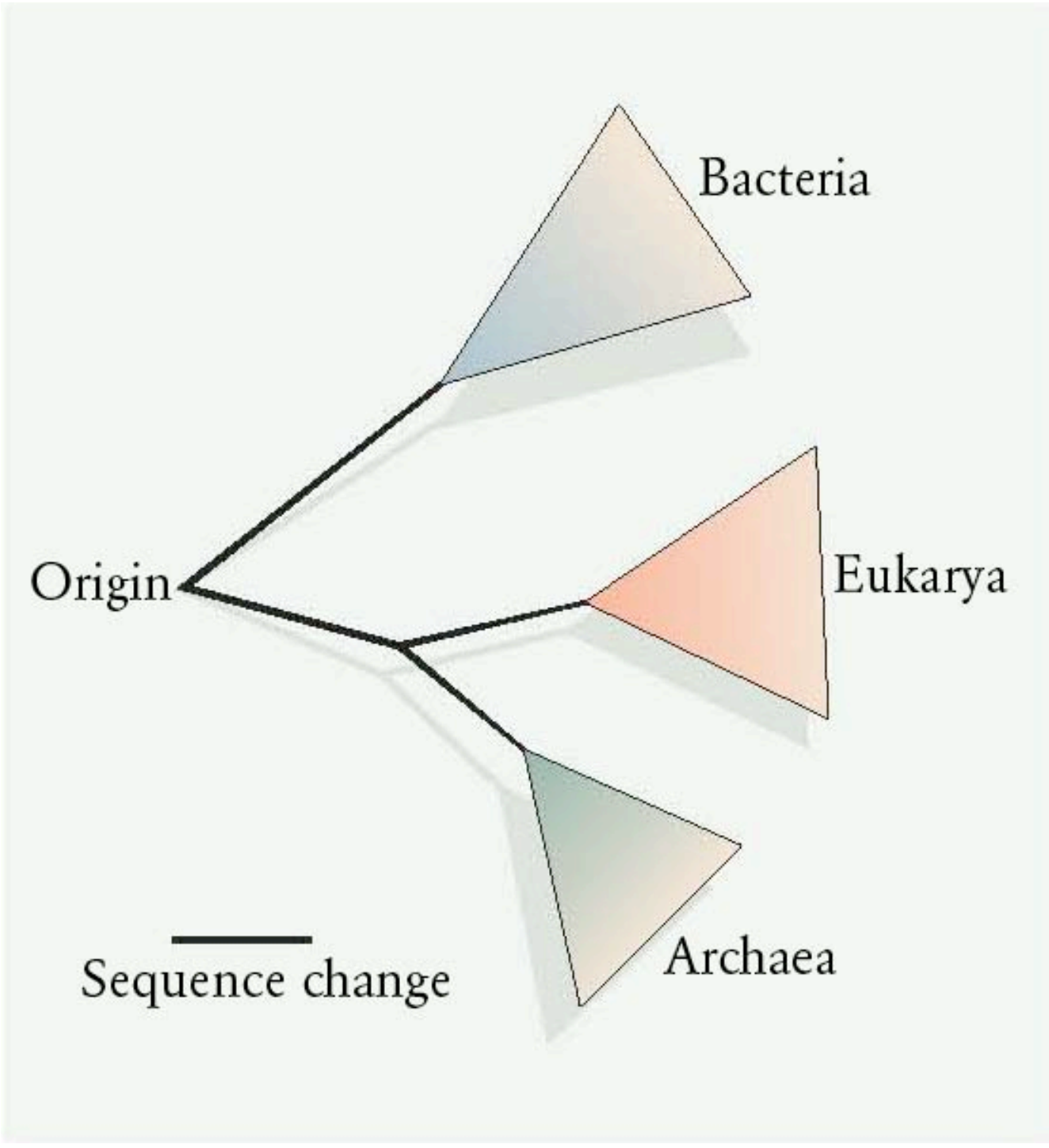

Comparisons of ribosomal RNA sequences reveal a three-domains tree of life, rendering the term 'prokaryote' obsolete

(from Norman R. Pace, *Nature* 441, 289, 2006)

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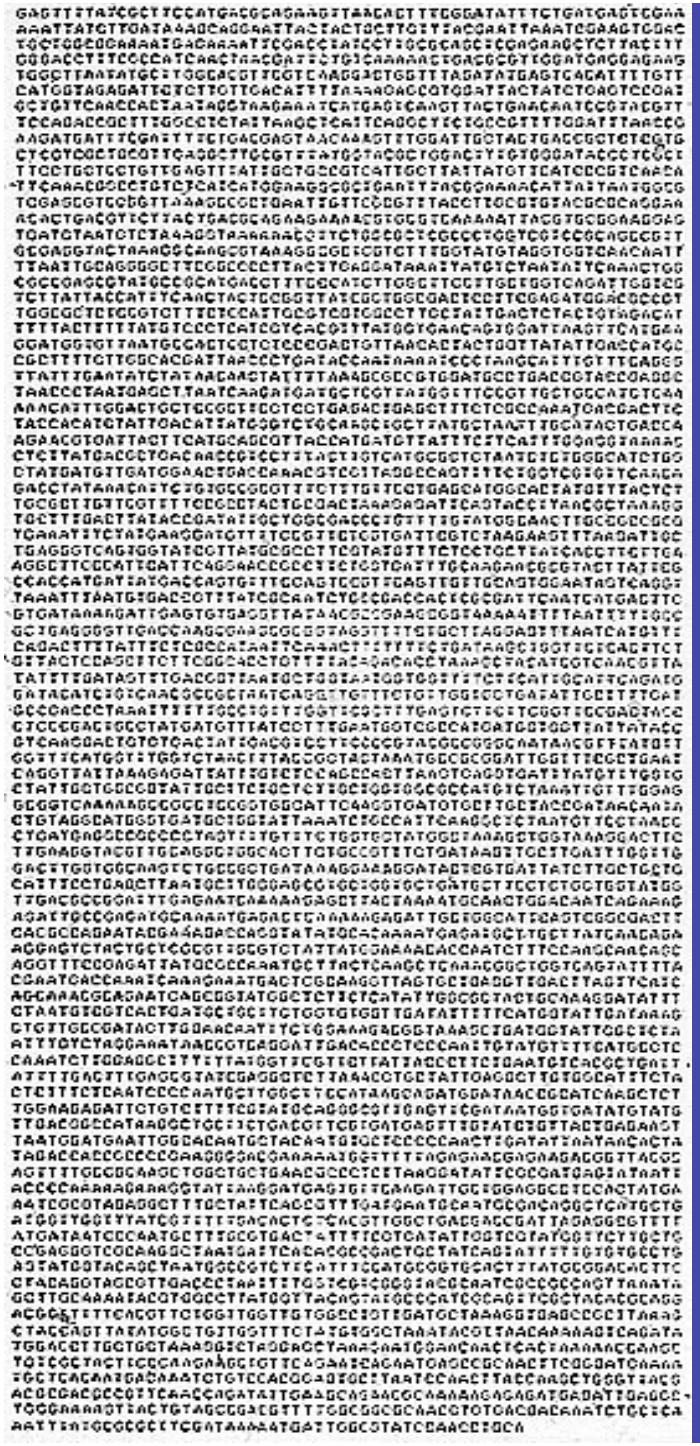

The entire hereditary information of the simple bacterial virus ϕX174 is contained in the single strand of DNA whose nucleotide sequence is given here.

(The sequence should be read from left to right in successive lines down the page, as if it was normal text.)

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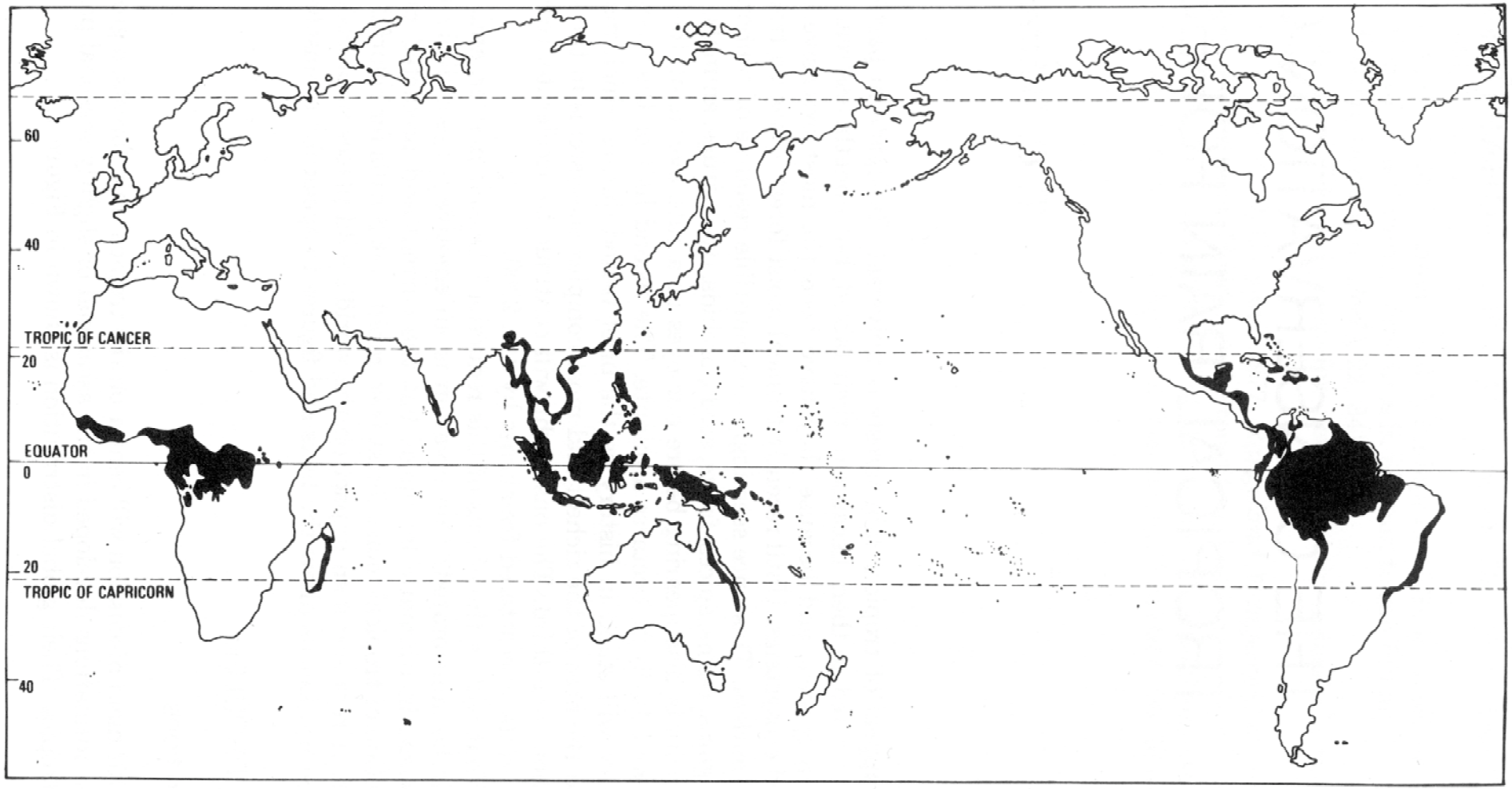
An electron micrograph of approximately two five thousandth of the DNA from a single human cell. The cell was in the interphase between cell divisions. It was treated to free the nucleus, from which most of the material other than the DNA was then extracted. The remaining DNA was spread on the surface of water and photographed at high magnification.

(from McCready et al., Electron-microscopy of nuclear DNA from human cells, *J. Cell Sci.* 39, 53-62, 1979 *in* George Snell, *Search for a Rational Ethic*, 1988)



Tropical rainforests

(from T. C. Whitmore *in* M. E. Soulé and B. A. Wilcox, eds., *Conservation Biology*, Sinauer Associates, 1978, p. 304)

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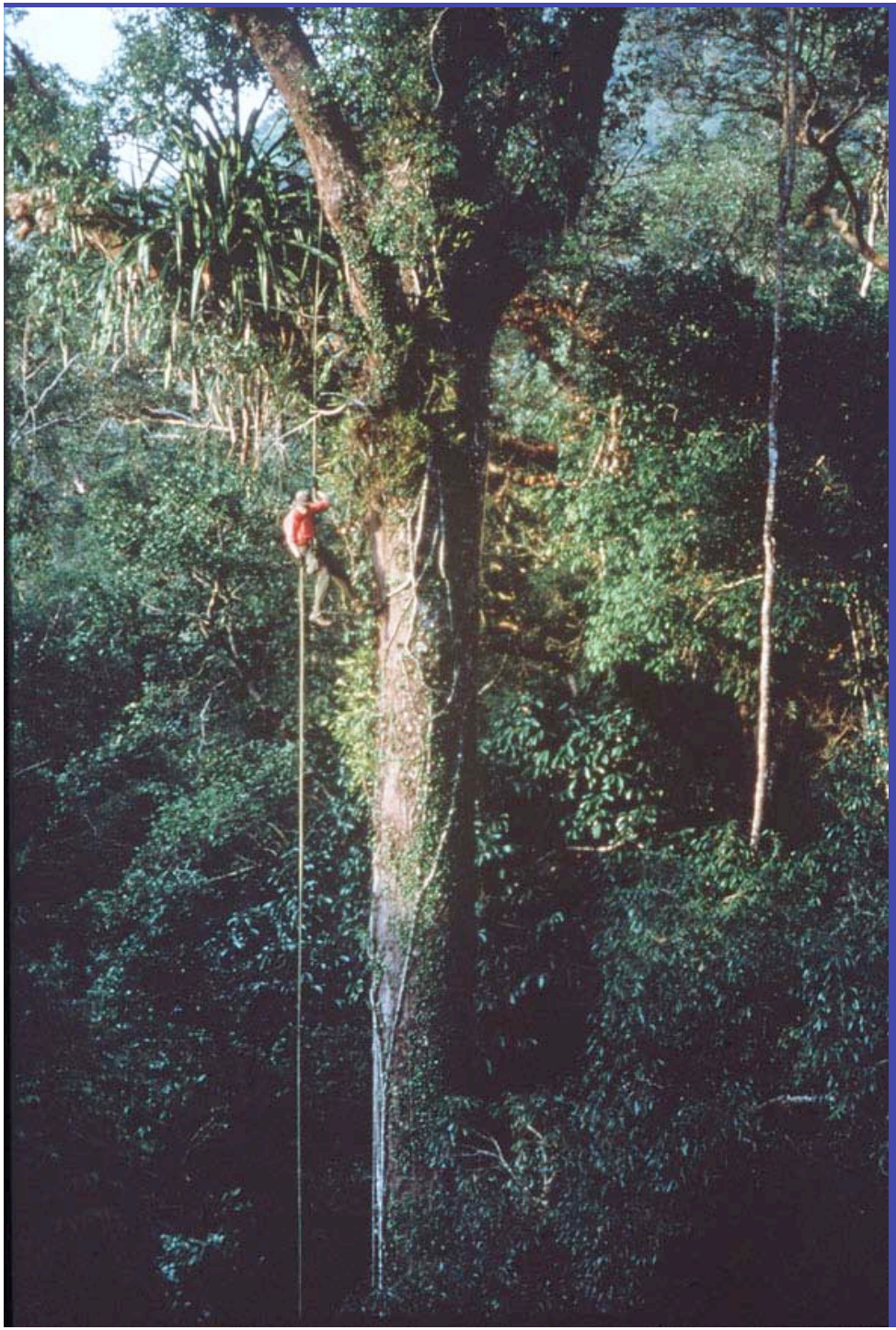

Bornean rainforest, Indonesia

(Scott Zens is in the tree;

photo by Tim Laman)

Barro Colorado Island, Panama

Chrislie Rich, tropical biologist exploring the canopy

(Explorers's Journal, Winter 2006/2007, p. 9)

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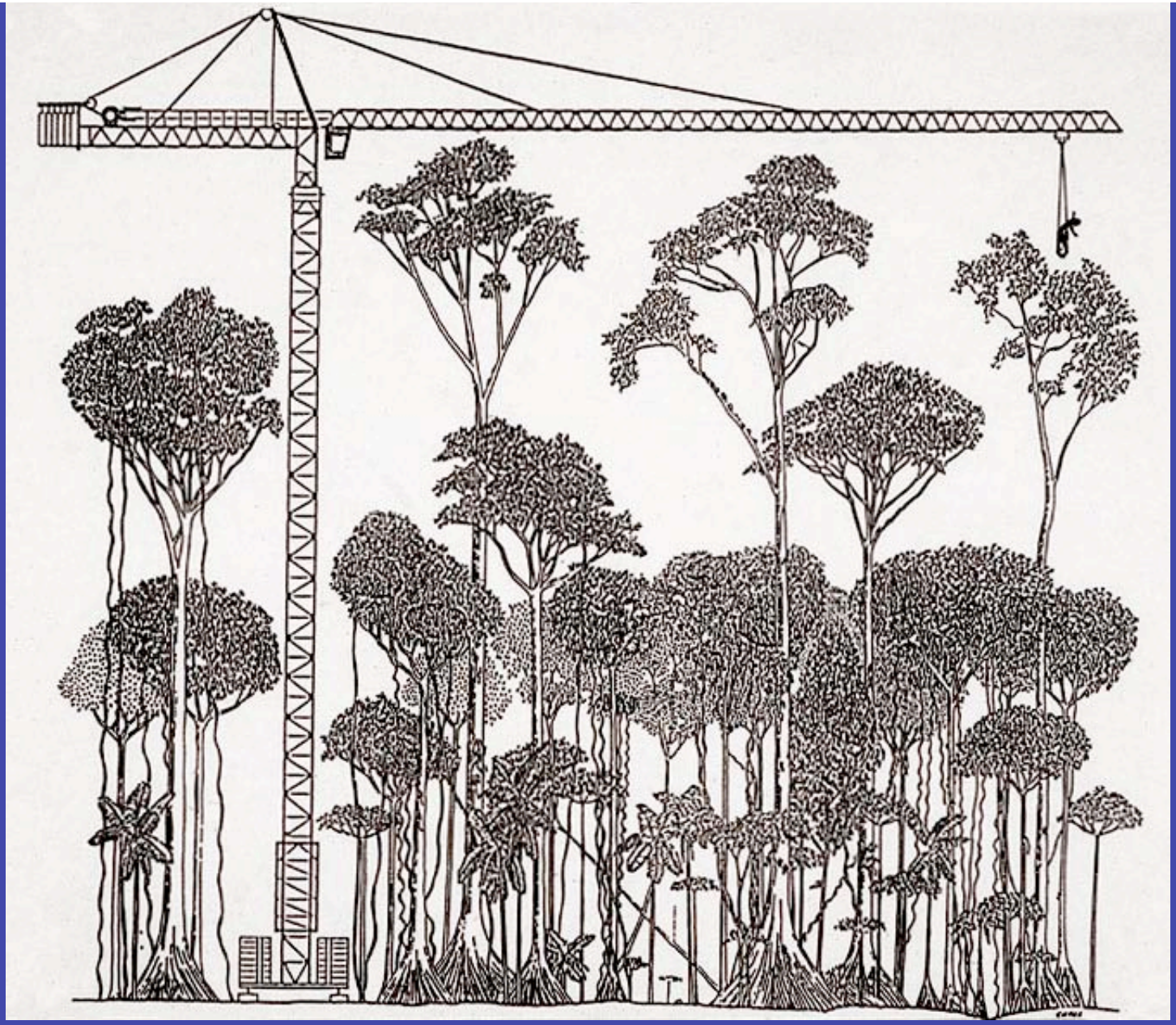
Tree canopy

Peruvian rainforest

(photo by Terry Erwin)



Canopy research crane, STRI, Panama

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Crane above canopy in Panama

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Canopy crane gondola, Panama

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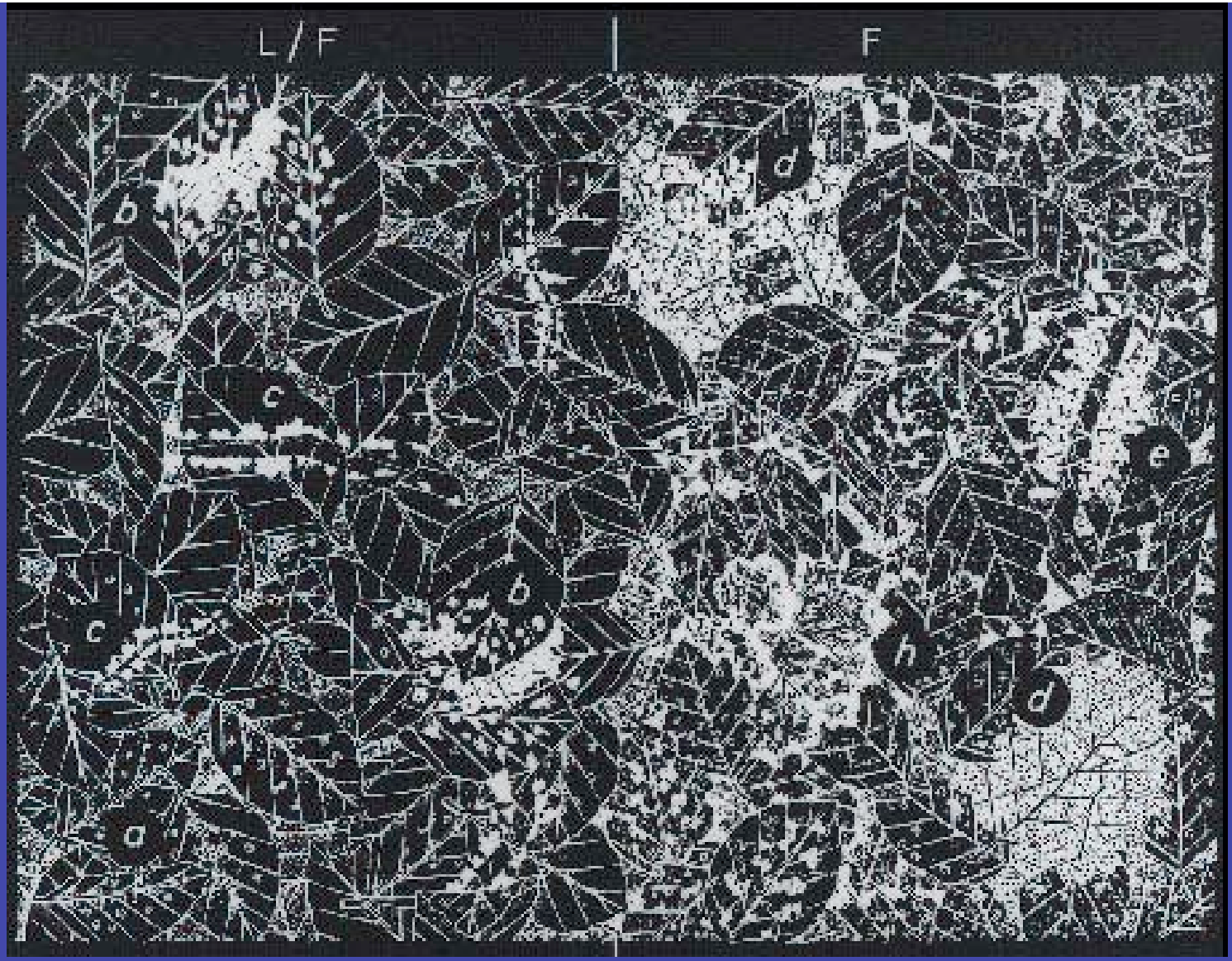
Close-up of canopy from gondola suspended from crane in Panama.

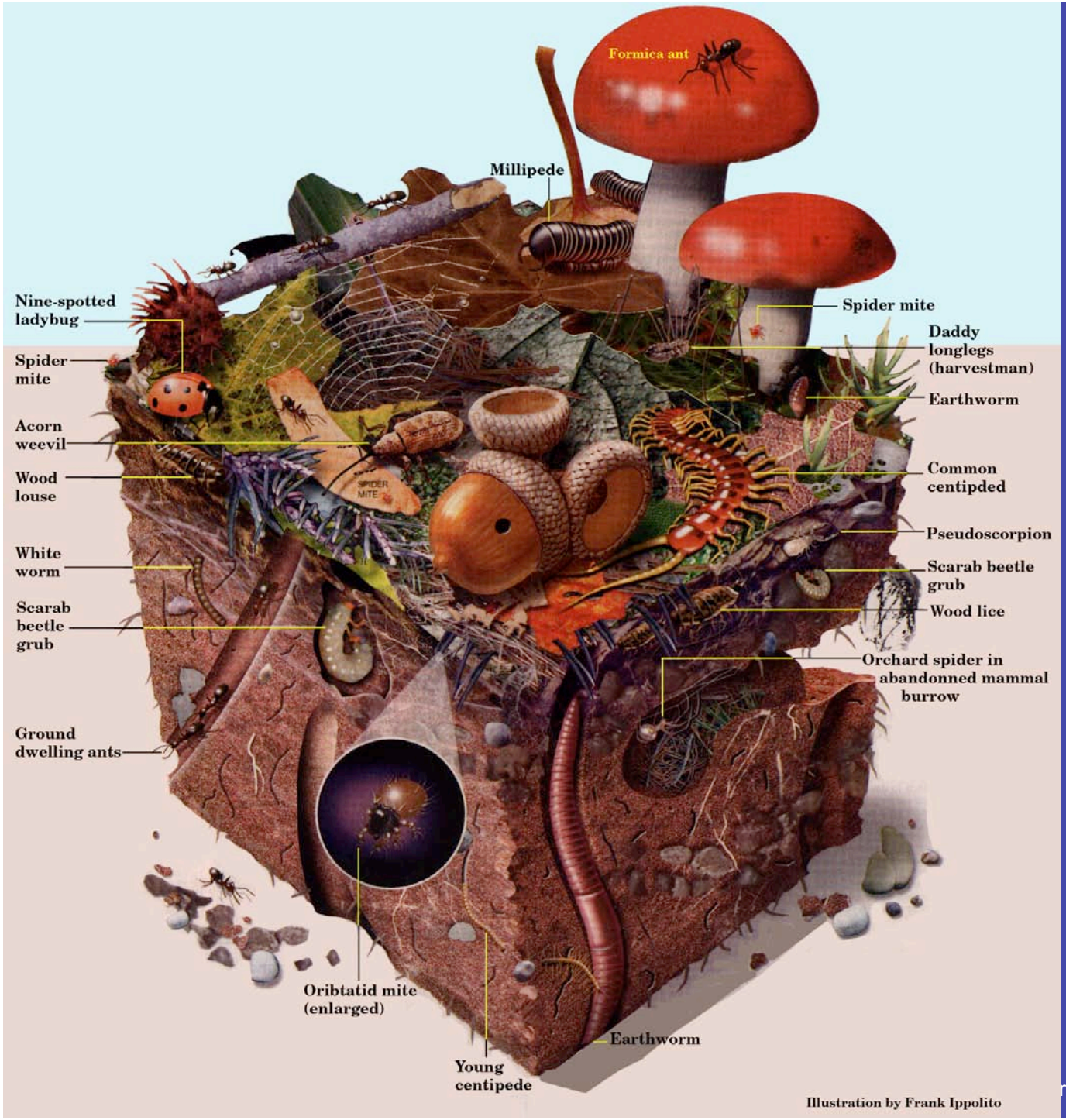
Geoffrey Parker (left), Alan P. Smith (right), in the fall of 1990, just a little while after the crane was installed.

Photo: Carl Hansen, STRI



Leaf litter seen from above

German temperate forest (from G. Eisenbeis and W. Wichard, *An Atlas on the Biology of Soil Arthropods*, 1987)



Soil from Central Park, New York City

Illustration by Frank Ippolito

(from *The New York Times*, Tuesday, 24 Sept. 2002)

Barro Colorado Island (BCI)

Diagram of average population on one-tenth of a square meter, based on small quadrats

(from E. C. Williams, *Bulletin of the Chicago Academy of Sciences* 6, 107, 1941)

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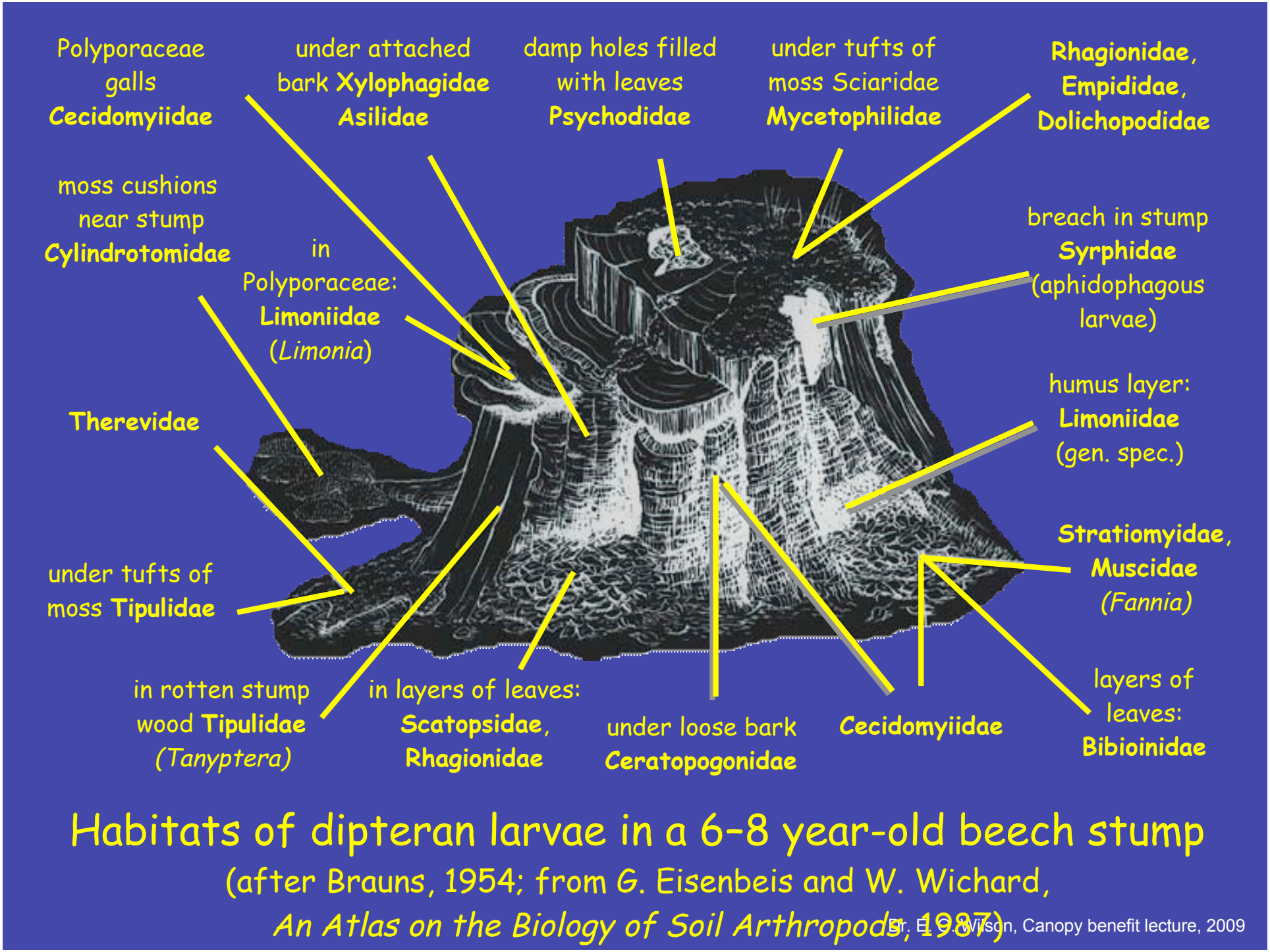


Habitats of dipteran larvae in a 6–8 year-old beech stump

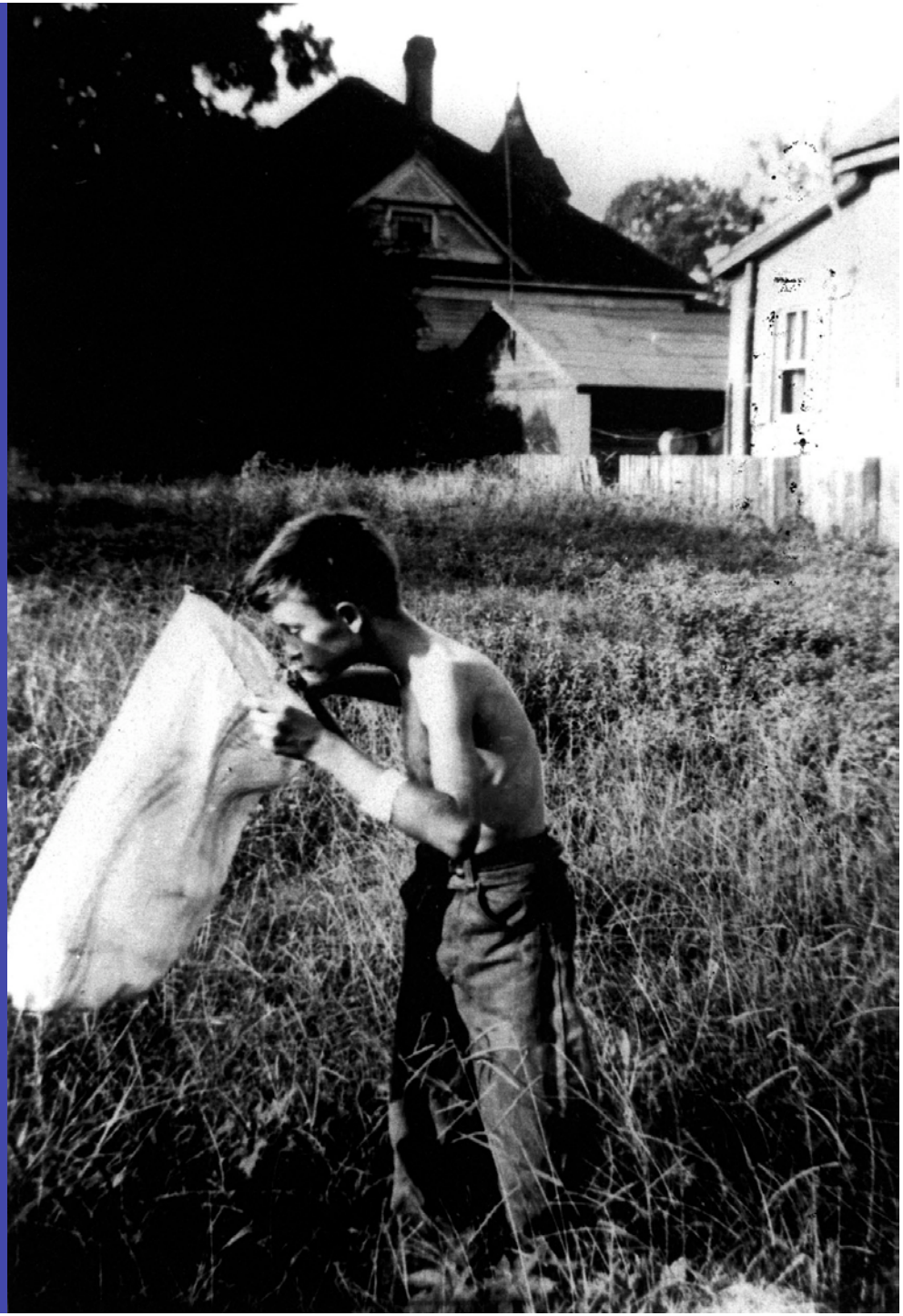
(after Brauns, 1954; from G. Eisenbeis and W. Wichard, *An Atlas on the Biology of Soil Arthropods*, 1987)

Ed Wilson,

13-years-old

in

Alabama



Ed Wilson looking for ants, San José, Costa Rica

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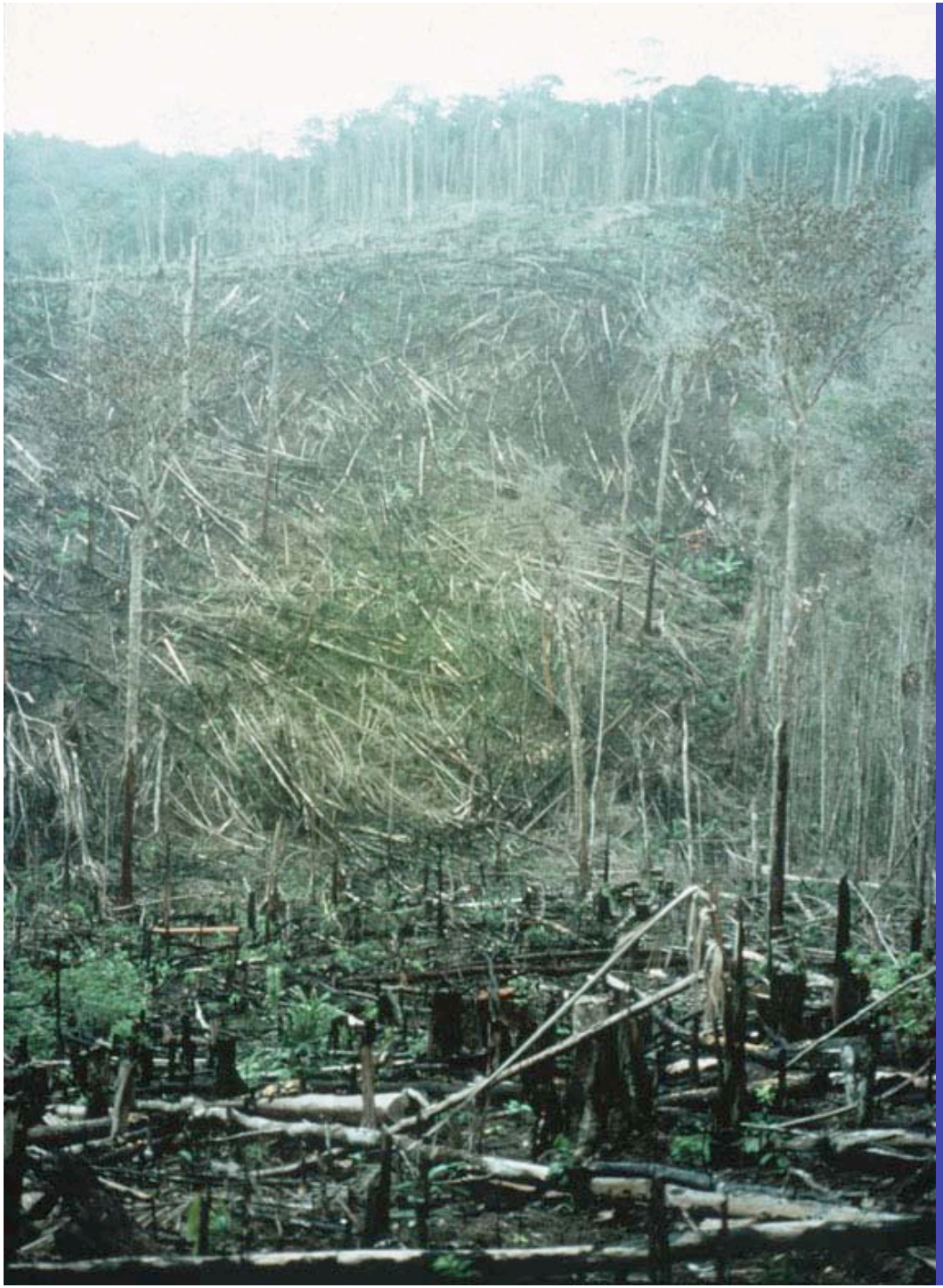

Slash and burn in a Brazilian forest

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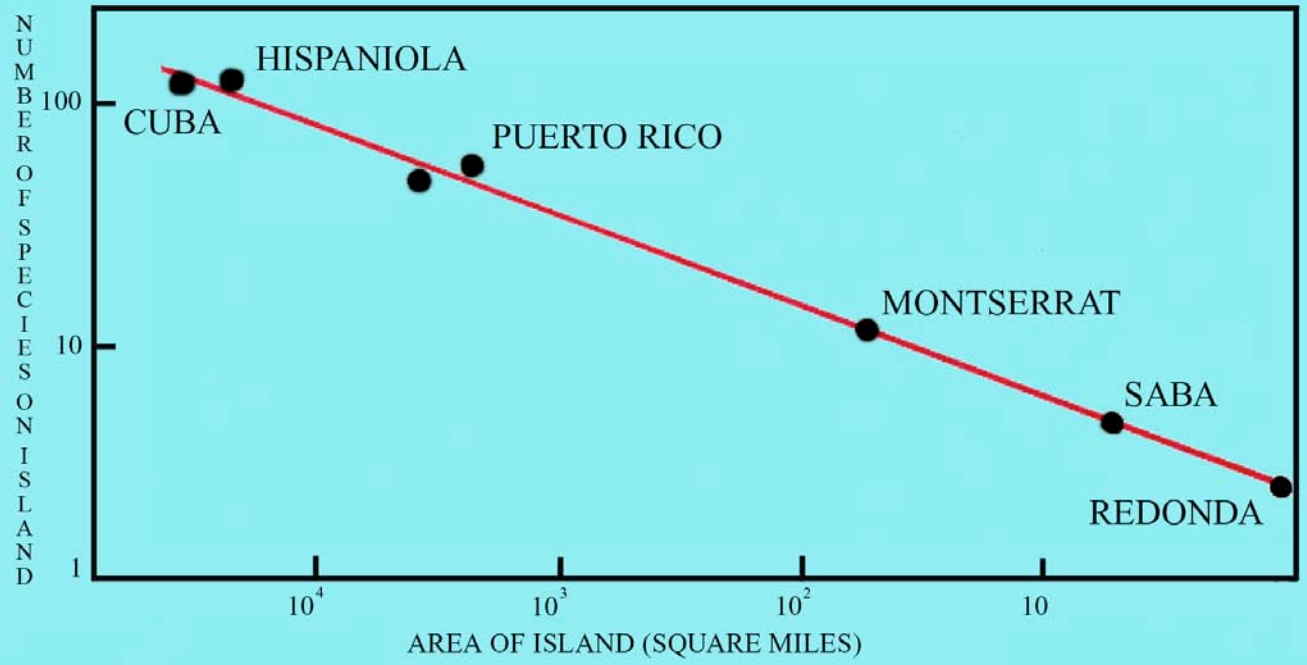
Points of light reflect the impact of human beings on the earth, as seen at night by satellite

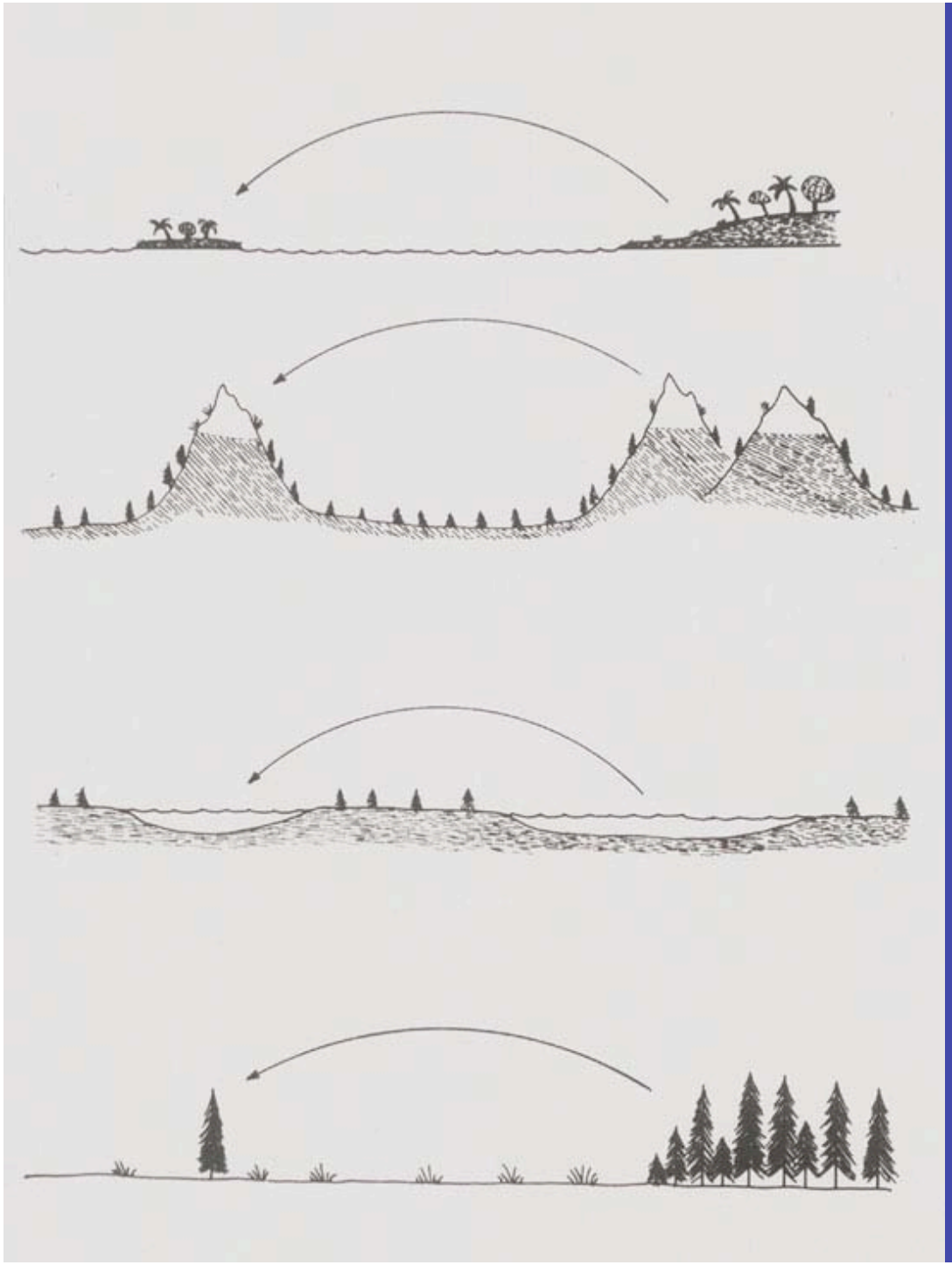
Painting executed by George V. Kelvin (from *Sci. Amer.*, 1989)



The number of species on an island corresponds to its size.

As a general rule, when the area of an island decreases to one tenth, the number of species on it drops to one-half.

(from E. O. Wilson, *Sci. Amer.*, Sept. 1989)



"Real" and habitat islands

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The Philippines

(Source: *Environmental Science for Social Change,* Quezon City, P.I., 1999)

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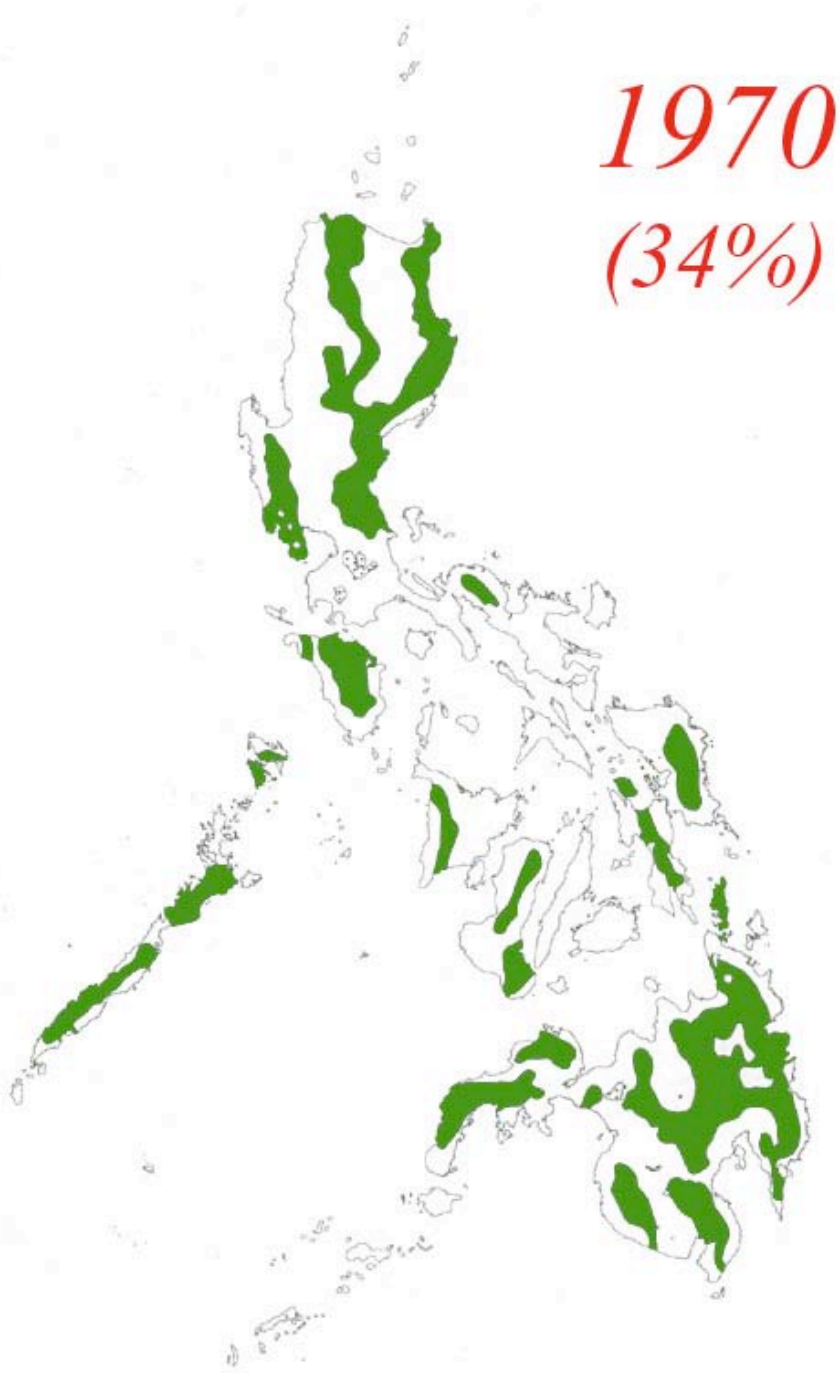

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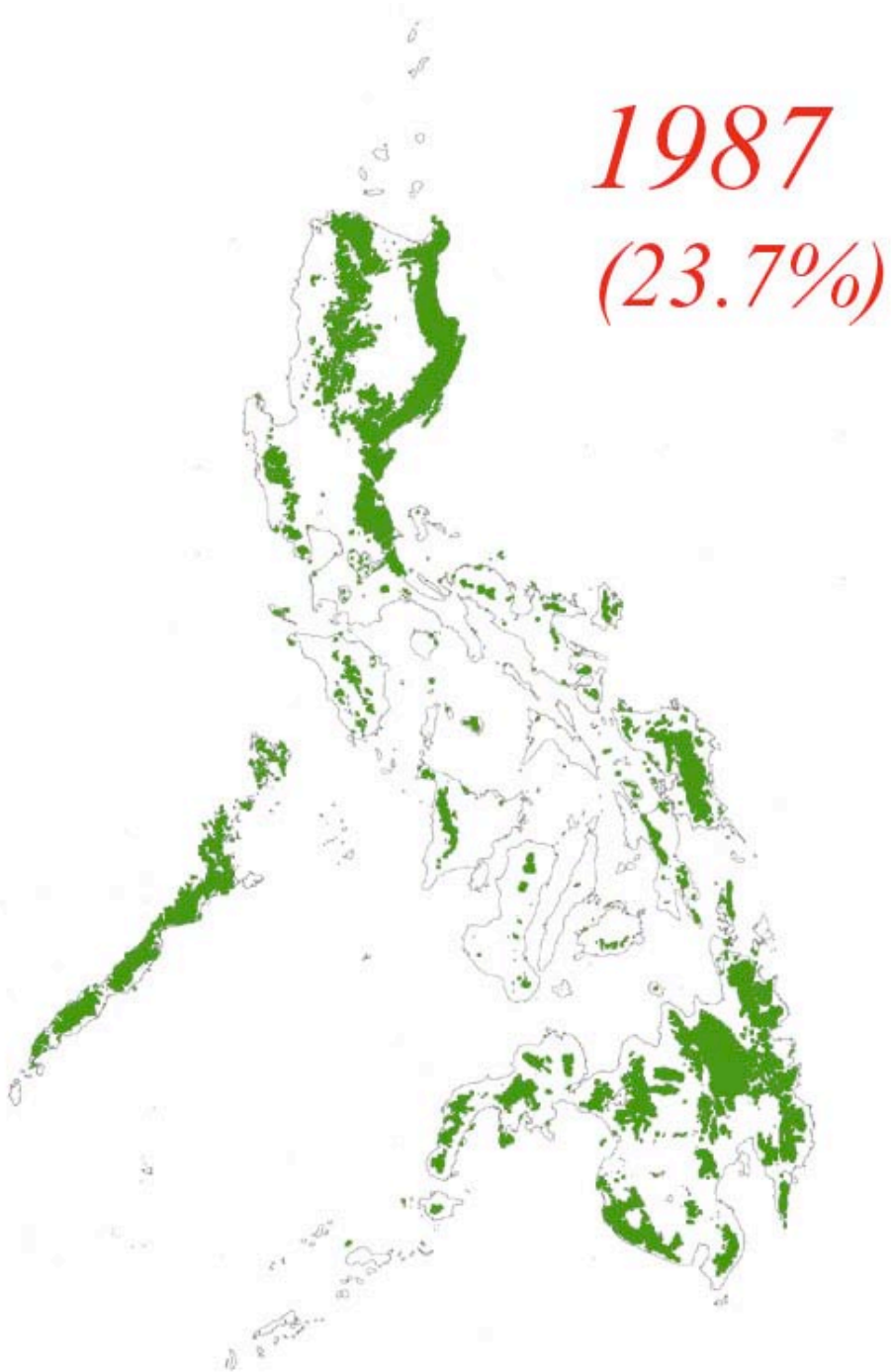

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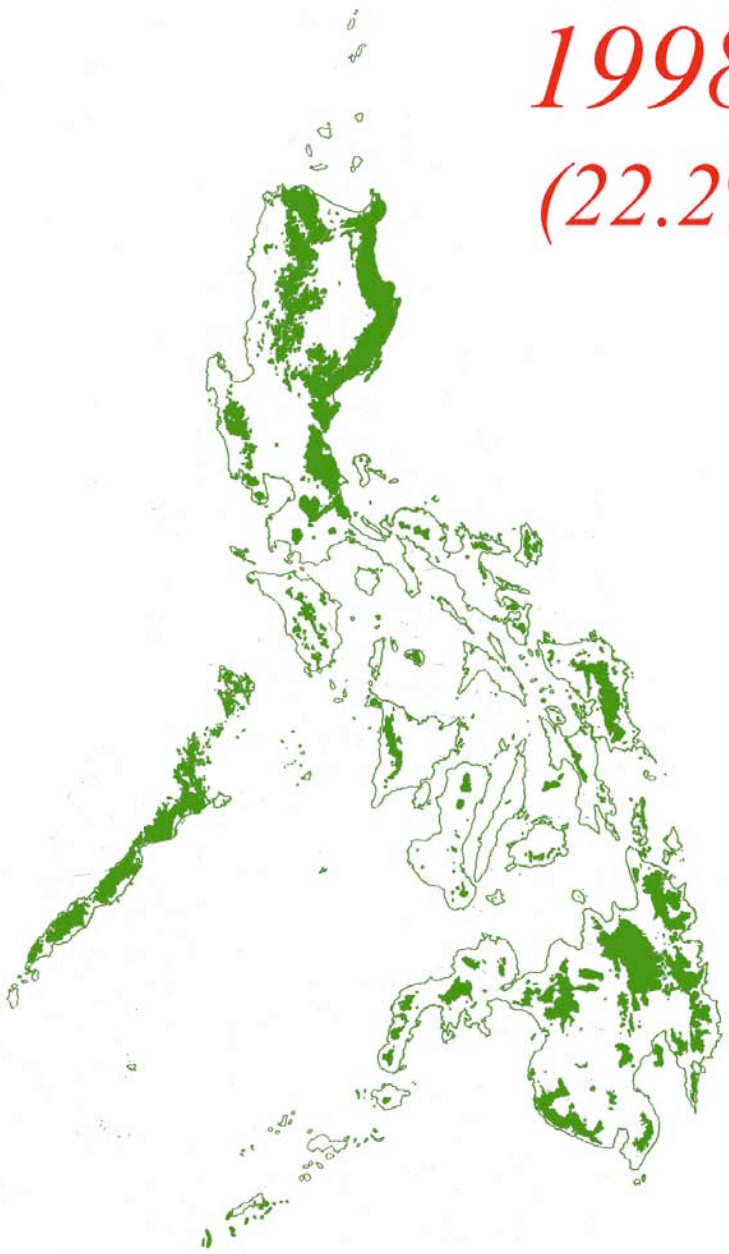

The Philippines

(Source: *Environmental Science for Social Change,* Quezon City, P.I., 1999)

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Darwin's forest

Depletion of the forest area in São Paulo State, Brazil

Between 1500 and 1845, the area of forest covering the state changed only from 82% (20,450 km^2) to 80%.

Today less than 10% of São Paulo State is covered by forest.

(adapted from Oedekoven, 1980; *in* T. Lovejoy, 1985)

The Panamanian golden frog, *Atelopus zeteki,* is nearly extinct in the wild as a combined result of habitat change, illegal collecting, and fungal disease; the species is currently secure in captivity (from Joseph R. Mendelson III et al., *Science* 313, 48, 2006)

Imported Fire Ants

(photographs by Walter Tschinkel)

Brown tree snake

The brown tree snake has eaten into extinction virtually all of Guam's native bird life.

(Source:
America's Least Wanted,
The Nature Conservancy, 1996)

Cerulean paradise-flycatcher of Sangihe Island, Sulawesi, Indonesia

Painting by
Stephen V. Nash
(from
Conservation Biology,
1(1), cover, 1987)

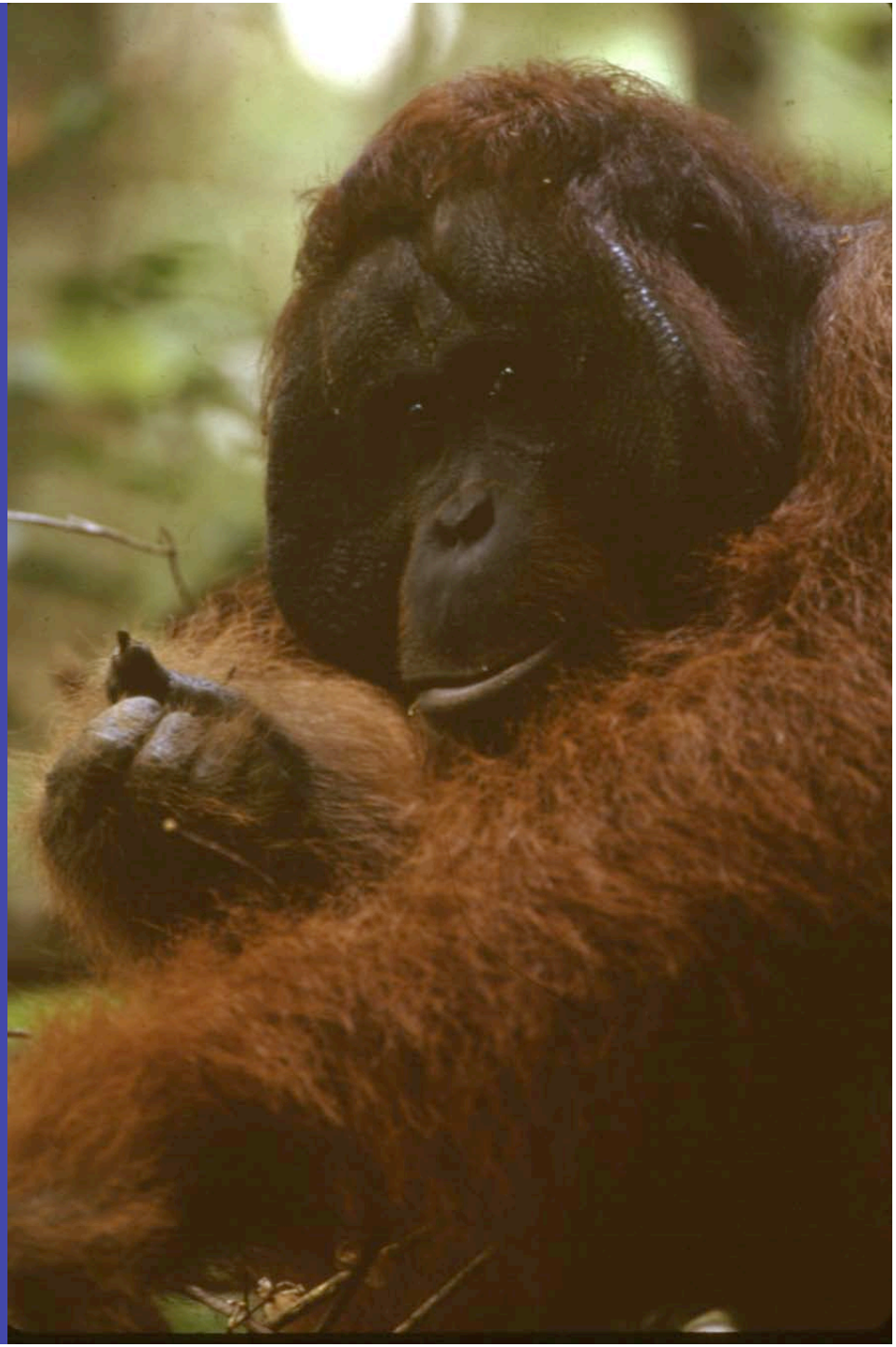
Wild adult male

orangutan

Gunnung Palung
National Park

Borneo, Indonesia

(photo by Tim Laman)



Ivory-billed

woodpecker

North America

Extinct

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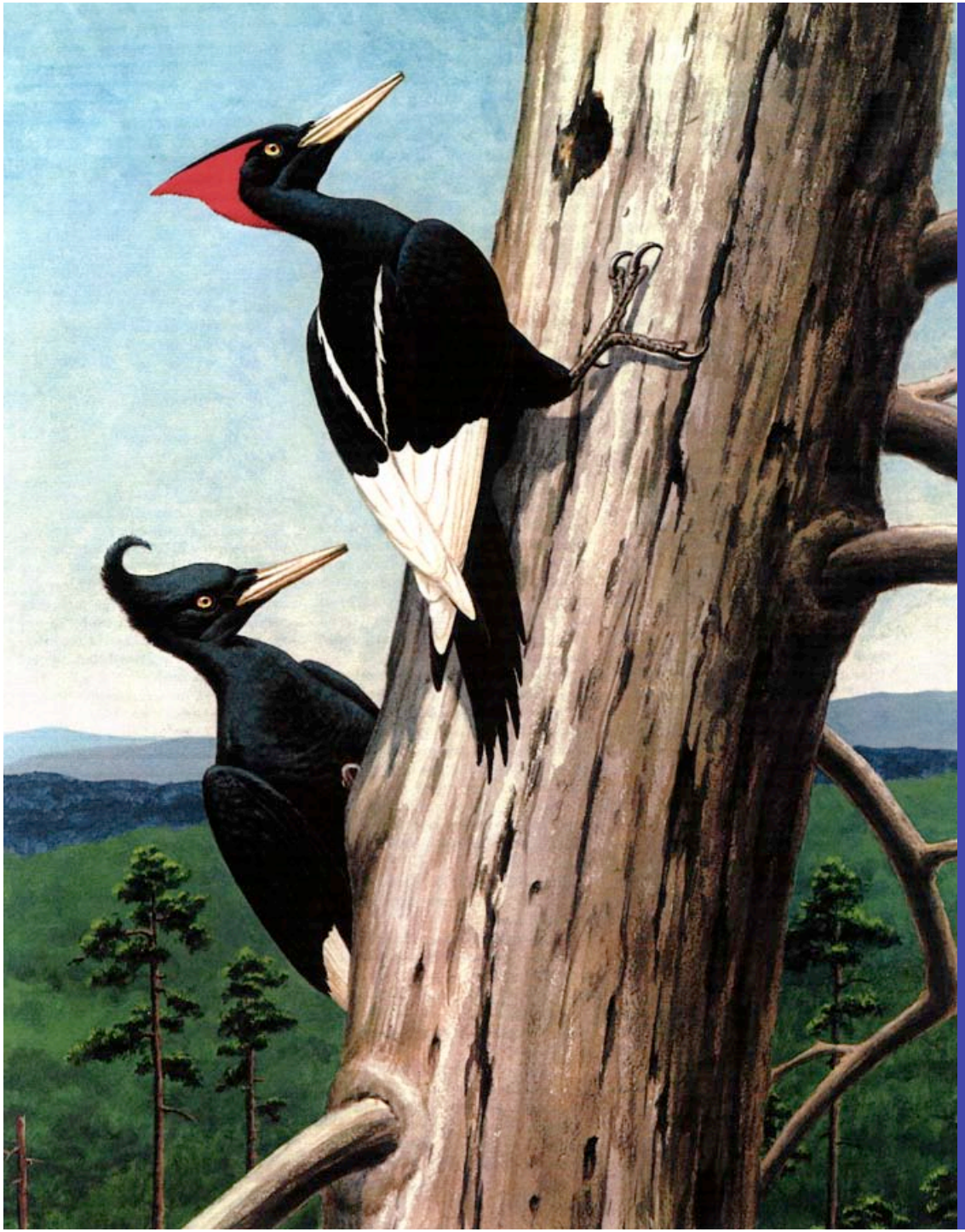

Imperial

woodpecker

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The golden toad of Costa Rica: newly extinct

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Oahu tree snail

Achatinella spp.

Honolulu, Hawaii

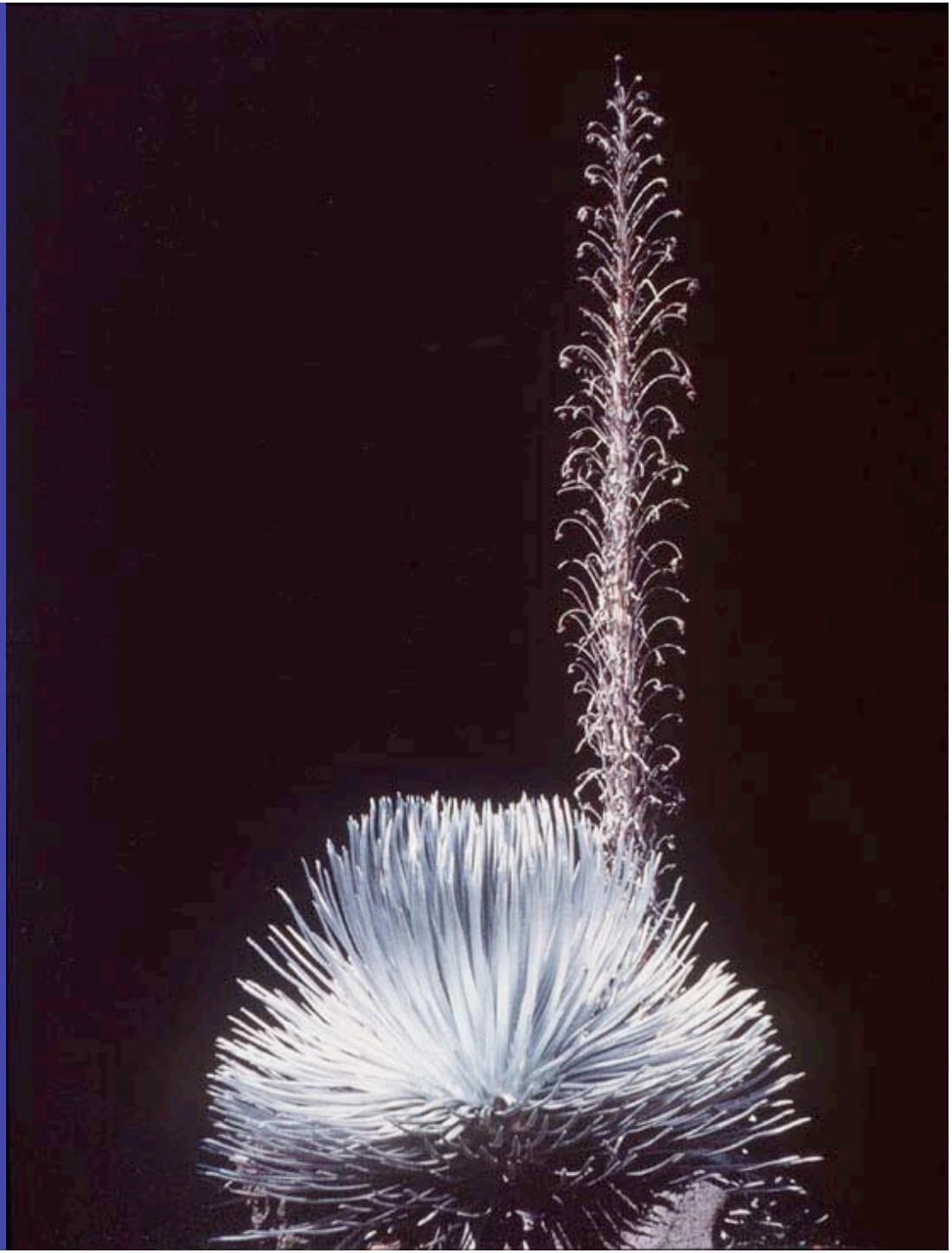
(from Middleton and Littschwager, *Witness*, 1994)

Ahinahina

Argyroxiphium sandwicense ssp. *sandwicense*

Hawaii, Hawaii

(from Middleton and Littschwager, *Witness*, 1994)



Drepanididae

Hawaiian

honeycreepers

(from J. M. Scott et al.,
BioScience, April 1988)

Species gone from Earth

Painting by

Isabella Kirkland

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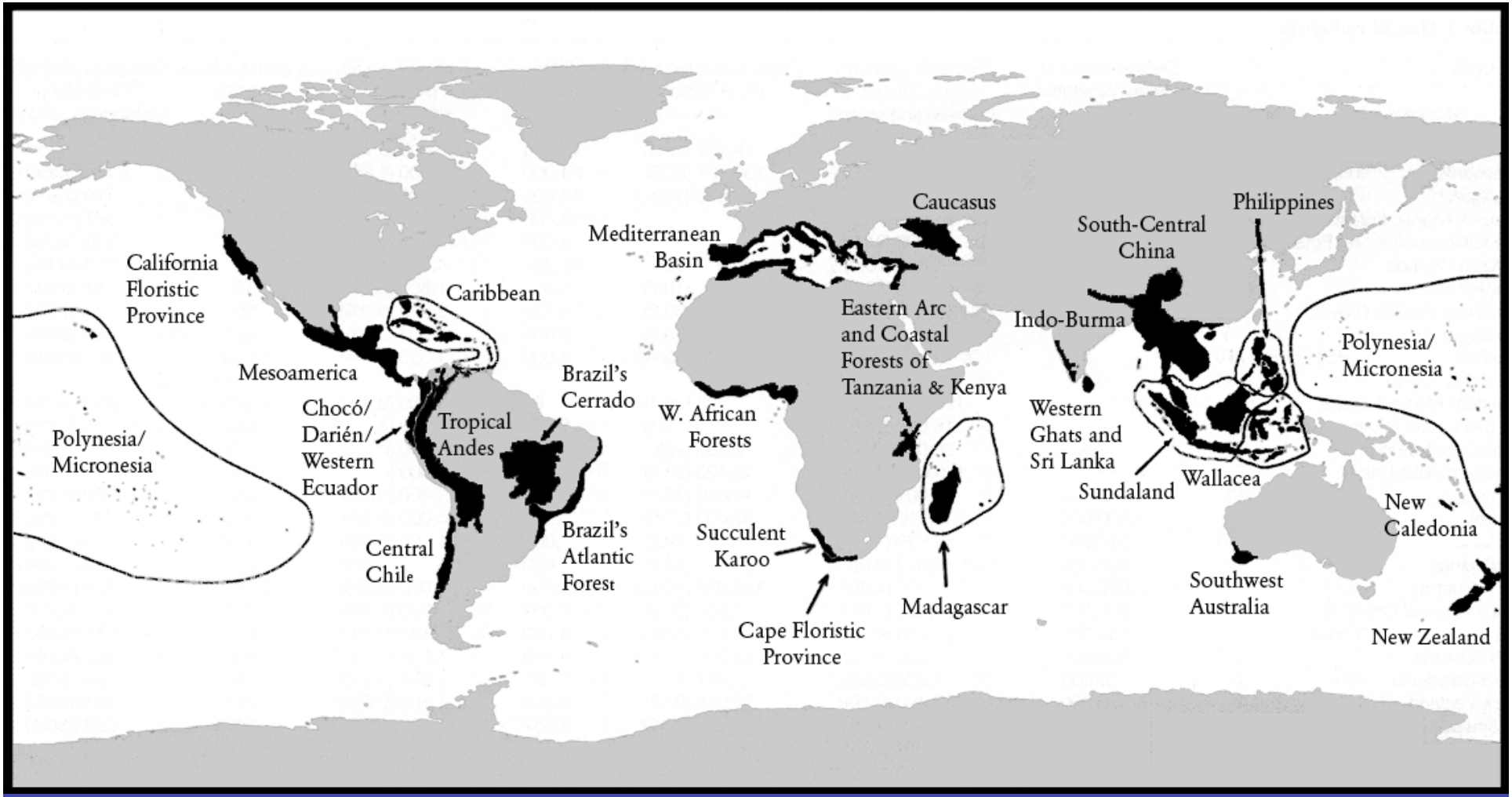

Biodiversity hotspots for conservation priorities

(from Norman Myers et al., *Nature* 403, 853, 2000)

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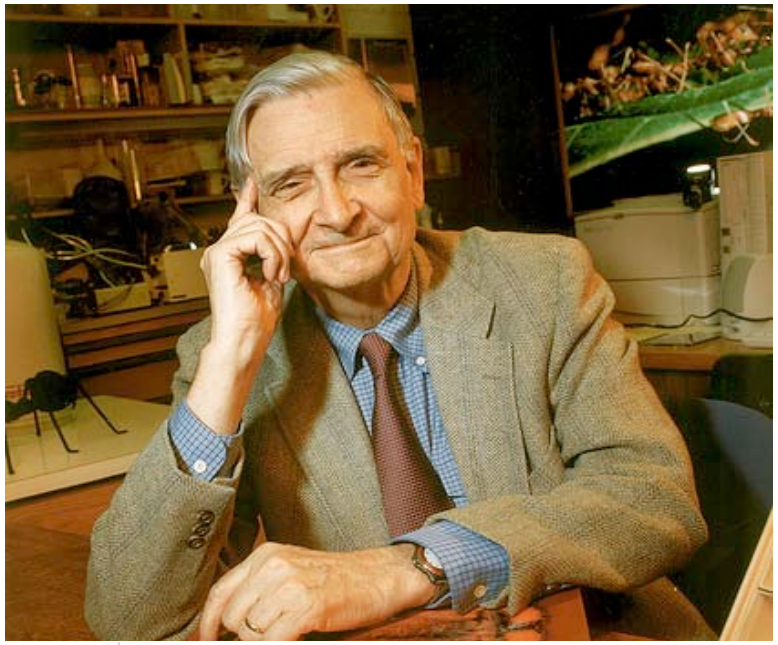

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