



JANUARY 2011

BIOLOGICAL DIVERSITY WORLDWIDE IS UNDER THREAT:

MUSEUM OF NATURAL SCIENCE, BERLIN

OUT OF A TOTAL OF 40,000 ANIMALS, PLANTS AND MUSHROOMS STUDIED, MORE THAN 16,000 ARE ENDANGERED BY EXTINCTION, ...

...INCLUDING ONE QUARTER OF THE MAMMALS STUDIED, ONE THIRD OF THE AMPHIBIANS EXAMINED, AND 12% OF ALL BIRD SPECIES.




90% OF LARGE PREDATORY FISH ARE ALREADY DEPLETED.

THE SUSTAINABILITY OF ECOSYSTEMS, SUCH AS FORESTS OR OCEANS, IS AT EXTREME RISK DUE TO THE LOSS IN BIODIVERSITY.

THIS INCLUDES THE WATER SUPPLY, THE ABILITY OF THE ATMOSPHERE TO CLEANSE ITSELF, CONTROLLING NATURAL DISASTERS, AND THE ABILITY TO COMBAT PARASITES.

IT IS THE LARGEST GLOBAL EXTINCTION OCCURRENCE SINCE THE DISAPPEARANCE OF THE DINOSAURS 65 MILLION YEARS AGO.

WHAT IMPACTS THIS SPECIES LOSS HAS ON MANKIND IS PERHAPS BEST ILLUSTRATED BY THE FOLLOWING EXAMPLE:



**DR. REINHOLD LEINFELDER**

IS PROFESSOR FOR PALEOBIOLOGY AND PALEONTOLOGY AT THE HUMBOLDT-UNIVERSITY IN BERLIN. HE WAS THE GENERAL MANAGER OF THE MUSEUM OF NATURAL SCIENCE IN BERLIN FROM 2006 UNTIL 2010. HE IS CHAIRMAN OF THE CONSORTIUM: "GERMAN SCIENTIFIC RESEARCH COLLECTIONS" AND SINCE 2008 MEMBER OF THE SCIENTIFIC ADVISORY BOARD FOR THE FEDERAL GOVERNMENT.









AFTER ALL BEES ARE THE MOST IMPORTANT POLLINATORS OF OUR CROPS AND THUS INDISPENSABLE TO THE SUSTAINABILITY OF AGRICULTURE.

ONE THIRD OF OUR FOODSTUFFS ARE DIRECTLY OR INDIRECTLY DEPENDENT ON BEES.

BEES NOT ONLY PRODUCE HONEY THEY ALSO POLLINATE MORE THAN NINETY VEGETABLE AND FRUIT SPECIES.

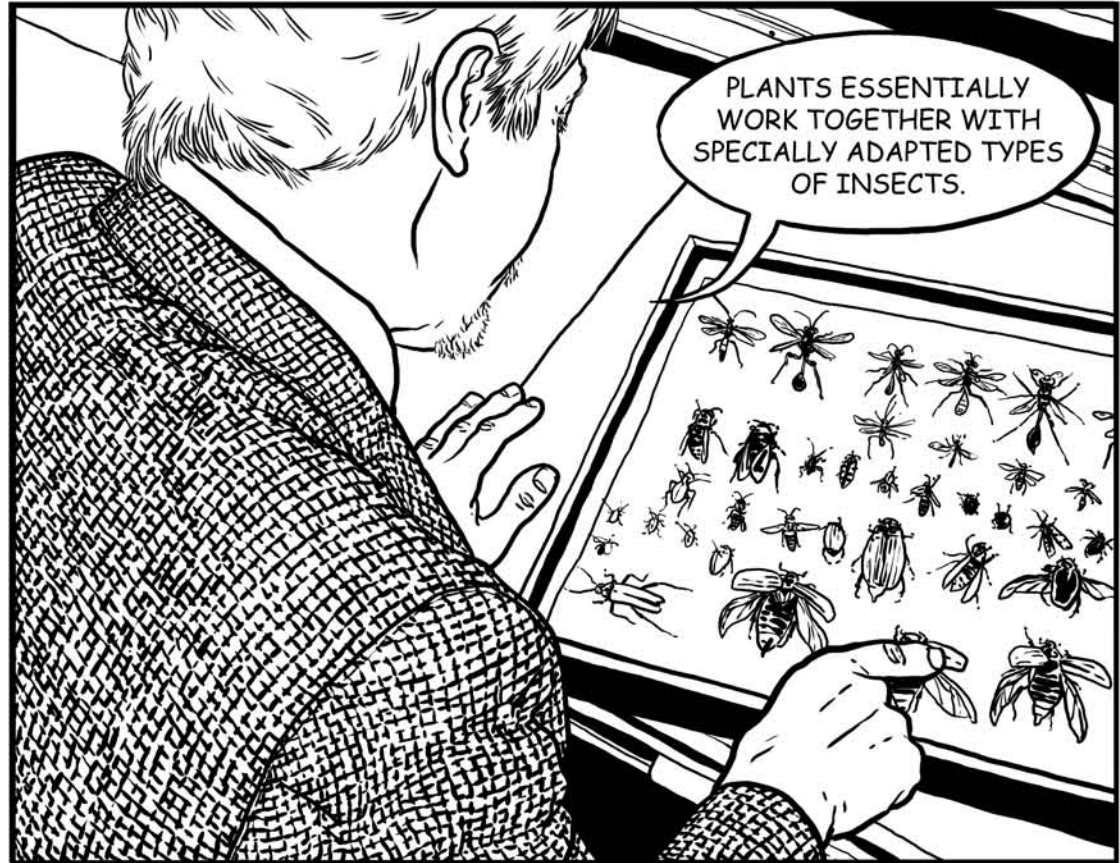
APPLES, NUTS, AVOCADOS, SOY BEANS, ASPARAGUS, BROCCOLI, CELERY, PUMPKIN, AND CUCUMBERS WOULD BECOME SCARCE WITHOUT BEES.

OR, FOR EXAMPLE, ALL CITRUS FRUITS, PEACHES, CHERRIES, STRAWBERRIES, KIWIS, AND VARIOUS TYPES OF MEANS ALSO DEPEND UPON THE POLLINATION OF THESE FLYING WORKERS.

ONLY THROUGH THE TRANSFER OF POLLEN FROM FLOWER TO FLOWER CAN THE FRUIT DEVELOP.



OTHER INSECTS CANNOT READILY TAKE ON THIS TASK DUE TO NATURAL SPECIALIZATIONS:



PLANTS ESSENTIALLY WORK TOGETHER WITH SPECIALLY ADAPTED TYPES OF INSECTS.





IN 2008 A GERMAN-FRENCH STUDY ESTIMATED THE AGRICULTURAL VALUE OF THIS POLLINATION WORLDWIDE AT NEARLY 153 BILLION EUROS PER YEAR.

HOWEVER, THE MASS LOSS OF BEES IS NOT LIMITED TO THE US, IN EUROPE AS WELL 40% OF BEE COLONIES HAVE SINCE DISAPPEARED, IN CHINA 10%, AND IN INDIA A SIMILAR AMOUNT HAS BEEN OBSERVED.



INDIA PRODUCES YEARLY 2.5 MILLION TONS OF VEGETABLES.

THIS CORRESPONDS TO 14% OF WORLDWIDE VEGETABLE PRODUCTION.

THUS MAKING INDIA THE SECOND LARGEST PRODUCER BEHIND CHINA. THE ABSENCE OF BEES MEANS A SIGNIFICANT REDUCTION IN EARNINGS.



IN ORDER TO COUNTERACT THE SERIOUS CROP LOSSES ON FRUIT PLANTATIONS...



... CHINESE FARMERS NOW POLLINATE THEIR TREES BY HAND, ONE FLOWER AT A TIME.





WHETHER THIS OR ANOTHER TYPE OF ARTIFICIAL POLLINATION REPRESENTS A SOLUTION FOR OUR PLANET STILL REMAINS TO BE SEEN.

ONE THING IS CERTAIN: IF WE TAKE AWAY EVEN ONE PIECE FROM THE DIVERSE ECOLOGICAL NETWORK, WE RUN THE ENORMOUS RISK OF DESTROYING AN ENTIRE SYSTEM WITH CONSEQUENCES THAT MIGHT ONLY CATCH TO US YEARS LATER.

PERHAPS WITH THE HELP OF TECHNOLOGY WE WILL CONTINUE TO FIND ANSWERS TO THE CHALLENGES OF THE FUTURE.

HOWEVER, EACH ONE OF US SHOULD ASK OURSELVES WHETHER IT IS TRULY DESIRABLE TO LIVE IN AN INCREASINGLY ARTIFICIAL WORLD...

This interview was conducted by Alexandra Hamann on January 18, 2011 in Berlin.



**Alexandra Hamann** has worked as a media designer since 1997. She graphically visualizes complex natural science and technology event sequences for school text books and e-learning programs. Based on her enthusiasm for the natural sciences, she began working as a volunteer at Berlin's natural history museum in 2007. Since the middle of last year, she has collaborated with Claudia Zea-Schmidt on a book project featuring graphical interviews.



**Jan Feindt**, illustrator and comic artist, was born 1975 in Lüneburg, Germany, and is currently living and working in Tel Aviv, Israel after spending the last eight years in Berlin. His comic stories have been published amongst others in the anthologies *Cargo: Comic Journalism, Israel – Germany* and *Berlin - Tel Aviv*. As an illustrator he works for a wide range of clients such as *The New York Times*, *Rolling Stone* and *Der Spiegel*. Right now he is illustrating the book *A Little History of the World* by Ernst H. Gombrich.