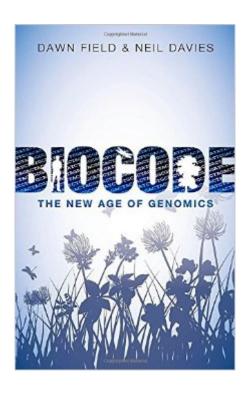
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Biocode: The New Age Of Genomics





Synopsis

The living world runs on genomic software - what Dawn Field and Neil Davies call the 'biocode' - the sum of all DNA on Earth. In Biocode, they tell the story of a new age of scientific discovery: the growing global effort to read and map the biocode, and what that might mean for the future. The structure of DNA was identified in 1953, and the whole human genome was mapped by 2003. Since then the new field of genomics has mushroomed and is now operating on an industrial scale. Genomes can now be sequenced rapidly and increasingly cheaply. The genomes of large numbers of organisms from mammals to microbes, have been mapped. Getting your genome sequenced is becoming affordable for many. You too can check paternity, find out where your ancestors came from, or whether you are at risk of some diseases. Some check out the pedigree of their pets, while others turn genomes into art. A stray hair is enough to crudely reconstruct the face of the owner. From reading to constructing: the first steps to creating artificial life have already been taken. Some may find the rapidity of developments, and the potential for misuse, alarming. But they also open up unprecedented possibilities. The ability to read DNA has changed how we view ourselves and understand our place in nature. From the largest oceans, to the insides of our guts, we are able to explore the biosphere as never before, from the genome up. Sequencing technology has made the invisible world of microbes visible, and biodiversity genomics is revealing whole new worlds within us and without. The findings are transformational: we are all ecosystems now. Already the first efforts at 'barcoding' entire ecological communities and creating 'genomic observatories' have begun. The future, the authors argue, will involve biocoding the entire planet.

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Customer Reviews

Biocode, by Dawn Field and Neil Davies, presents a fascinating account of the emergence and progress of the new scientific field of genomics, which maps and studies the structure, function, and evolution of the DNA (the chromosome set), of each life form. As both authors are pioneer researchers in genomics themselves, the book benefits enormously by their special insight into the significance of these discoveries, what they mean, and where they might lead. Written in a clear and quite delightful style, Biocode leads the reader quickly into the drama of how the discovery of DNA launched the new science like a rocket, and then through the ways that its findings are already affecting our lives. The many fascinating details of specific projects, which were science fiction a few short years ago, make the book impossible to put down. As computerised methods of decoding, comparing, and duplicating bits of DNA have become faster, more efficient, and more economical, genomics has been zooming ahead, with new projects multiplying as fast as its brilliant researchers could envision them. It became possible to decode the DNA not only of individuals and species, but of whole ecosystems, and the authors' own project, The Moorea Biocode Project, which identified all of the life on Moorea Island in French Polynesia, was the first. Now, researchers are tackling the inspirational project of biocoding all of the life on Earth. Sampling systems are already growing and linking together to provide a brand new type of observatory, one that looks into the vast variety of ecosystems around the planet, to decode, map, analyse and compare.

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