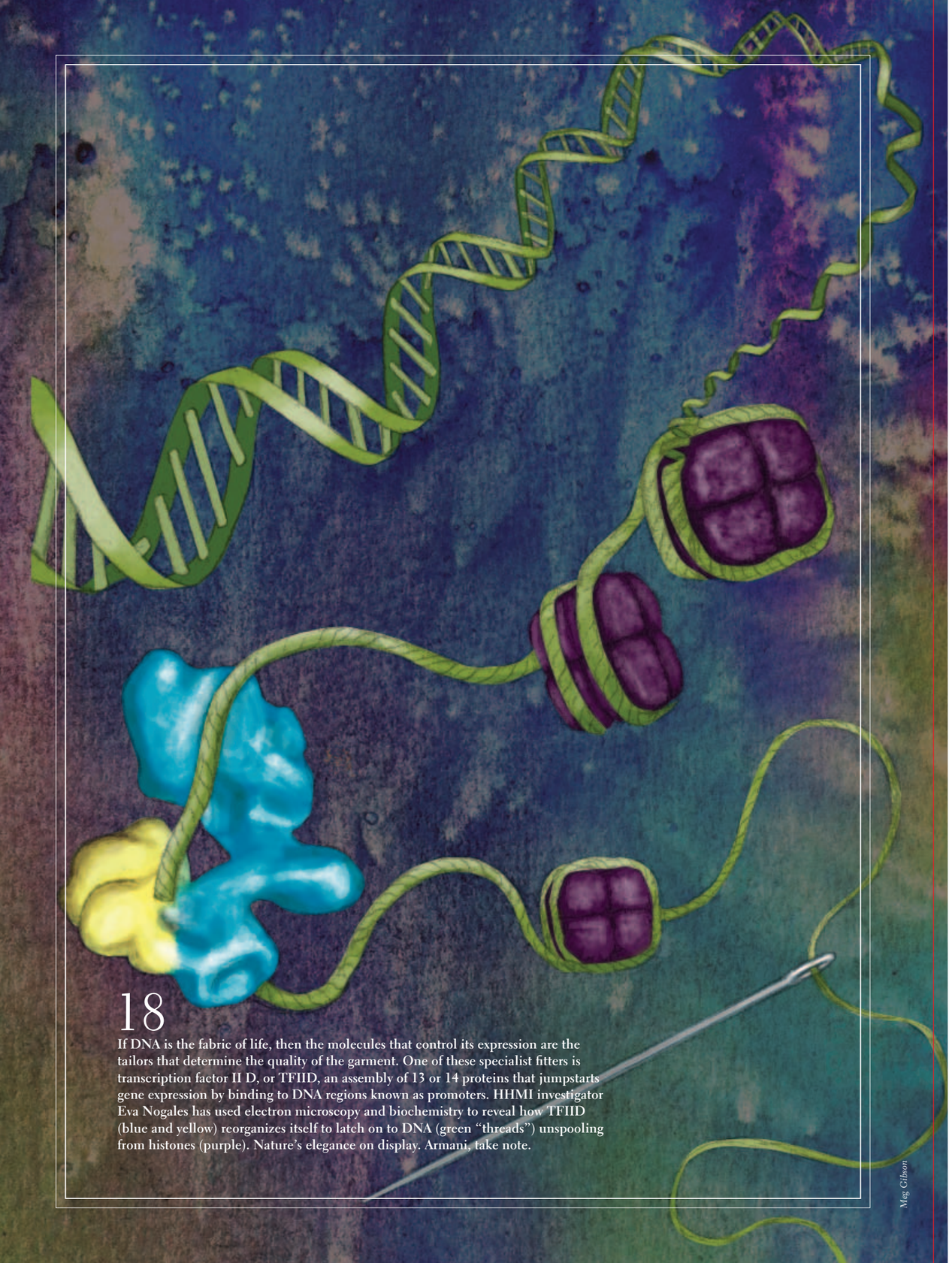

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If DNA is the fabric of life, then the molecules that control its expression are the tailors that determine the quality of the garment. One of these specialist fitters is transcription factor II D, or TFIID, an assembly of 13 or 14 proteins that jumpstarts gene expression by binding to DNA regions known as promoters. HHMI investigator Eva Nogales has used electron microscopy and biochemistry to reveal how TFIID (blue and yellow) reorganizes itself to latch on to DNA (green "threads") unspooling from histones (purple). Nature's elegance on display. Armani, take note.

Meg Gibson

OBSERVATIONS

A. R. Wallace Memorial Fund

ADMIRING DARWIN

At the time Alfred Russel Wallace died in 1913, he was arguably the world's most famous scientist. An intellectual with wide-ranging interests, he is best known today for his work with Charles Darwin to conceive the theory of evolution by natural selection. Less appreciated are his bounteous contributions to other realms of science, from glaciology to astrobiology. In this centennial anniversary of his death, his correspondence with colleagues is still illuminating. In 1860, he wrote to Henry Walter Bates, a fellow explorer and naturalist who had accompanied him on expeditions to the rainforests of the Amazon. Even then, biologists knew the power of collaboration.

I know not how or to whom to express fully my admiration of Darwin's book. To him it would seem flattery [and] to others self-praise; but I do honestly believe that with however much patience I had worked up and experimented on the subject I could never have approached the completeness of his book—its vast accumulation of evidence, its overwhelming argument, and its admirable tone and spirit. I really feel thankful that it has not been left to me to give the theory to the public.

Mr. Darwin has created a new science and a new Philosophy, and I believe that never has such a complete illustration of a new branch of human knowledge been due to the labours and researches of a single man. Never have such vast masses of widely scattered and hitherto utterly disconnected facts been combined in to a system, and brought to bear upon the establishment of such a grand and new and simple philosophy! ...

I am now convinced that insects on the whole do not give such true indications in Zoological Geog[raphy] as Birds and Mammals because they have, 1st. such immensely greater chances of distribution, and 2nd. because they are so much more affected by local circumstances. Also 3rd. because the sp[ecies] seem to change quicker and therefore disguise a comparatively recent identity. Thus the insects of two originally distinct regions very rapidly become amalgamated— a portion of the same region may come to be inhabited by very distinct insect faunas owing to differences of soil, climate, etc. etc. This is strikingly shown here, where the insect fauna from Malacca to N[ew] Guinea has a very large amount of characteristic uniformity; while Australia from its distinct climate and vegetation shows a wide difference. I am inclined to think, therefore, that a preliminary study of first the Mammals and then the Birds are indispensable to a correct understanding of the Geographical and physical changes on which the present insect distribution depends.