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the geneticssociety

REVIEW ARTICLE

Homo geneticus

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Perhaps I am not alone in having always wanted to document a new species. It was only the other day that I finally fulfilled my ambition. In which dark recess of Amazonia did I find this rare creature? I hear you ask. Luckily I did not have to travel too far. On reflection, you might say it was staring me in the face.

The first clear sighting of what I hereby term *Homo geneticus* was of a single male individual in 1865 in Moravia. This specimen was entirely vegetarian, requiring many thousands of pea plants to feed its appetite. There were no further sightings for 35 years, and it was assumed by many that *H. geneticus* had gone extinct. Then, quite unexpectedly, three individuals turned up together in 1900, in Austria, Germany and the Netherlands. Through their efforts, *H. geneticus* began to spread, subsisting on a varied diet of guinea pigs, rats, poultry, corn and snapdragons. With the advent, in 1910, of a highly successful insectivorous form in America, feasting on fruit flies, the future of *H. geneticus* seemed assured. However, rivalry broke out with the sibling species *H. selectus*. It was not until the 1930s that hybridisation brought an end to this unfortunate conflict, yielding the subspecies *H. geneticus populationis*, known for always minding its *p*s and *q*s. The story took a further double twist in 1953, as *H. geneticus molecularis* came on the scene. *H. geneticus* has since gone from strength to strength, and now boasts a diet including fish, mice, yeast, worms and weeds. With the advent of *H. geneticus genomicus*, renowned for its fondness of alphabet soup, humans have increasingly appeared on the menu. Some have been dismayed by this cannibalistic or narcissistic turn of events. The more charitable see it as the laudable desire of *H. geneticus* to care for its own.

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H. geneticus is not born fully fledged but takes time to acquire its plumage, undergoing a metamorphosis typically during the undergraduate or Ph.D. developmental stage. In my own case, signs first became evident during my second year of undergraduate studies. I was debating whether to study genetics or chemistry in my third year, and would swing violently from one option to the other on a daily basis. Then I discovered that lectures from *H. geneticus* began at 9:30 a.m. rather than 9:00 a.m., and that they served coffee during exams. My developmental fate was sealed. The metamorphosis can occur at any stage, however. I know of a medical doctor who transdifferentiated in his 50s, as he became fascinated by a hereditary condition affecting hearing.

The sensibility of *H. geneticus* is dominated by vision. It is lured by variations in eye and hair colour, or striking patterns on a butterfly or flower. More recently it has been drawn to fluorescing proteins, with a varied palette of red, yellow, green and cyan. It is also attracted by deviant shapes, such as those of a four-winged fruit fly, or a many-petalled flower. *H. geneticus microbius* looks for the presence or absence of colonies, while *H. geneticus behaviouralis* comes up with devious schemes to sort its victims through their own choices. Occasionally, *H. geneticus* uses its other sensibilities, such as its sense of taste when detecting the bitterness of phenylthiocarbamide, or sense of smell when inhaling the odour of urine following a meal of asparagus.

H. geneticus itself does not display any striking visual or aromatic traits. You may pass one in the street without knowing it. It is through conversation that the species most often reveals itself. Though often of a quiet, solitary disposition (derived from many hours spent trying to fathom its subject), its eyes light up at the mention of words such as mutant, inheritance or variation. It is then you may hear of its fascination with how a fertilised egg transforms itself through embryo and buds into an adult; how mindless natural selection and drift over countless generations can create the great diversity of living forms; how a few altered atoms in a DNA molecule can change the way an individual

looks or behaves; how a criminal may be caught through DNA fingerprints; how genetic variations underlie the crops and antibiotics that sustain our lives. It may also talk of the darker side; of how cell divisions may go awry to cause cancer; how certain diseases can be inherited; and how the name of genetics has been misappropriated to justify evil deeds.

H. geneticus is no different from other species in seeking the company of its own, through formation of societies and congregating at meetings. It is there that you may see individuals gesticulating to each other wildly in front of a poster, or pointing a laser at a fascinating band or phenotype. Some get carried away by their love of spaghetti diagrams, while *H. geneticus epigeneticus* may wax lyrical about HK27 methylation. Should you join their evening conversations, often lubricated by alcohol, you may find *H. geneticus* gets roused if you are unwise enough to let words like *referee* or *journal* slip from your mouth. You may then be regaled with the numerous injustices that have been inflicted, often by suspected members of its own species. Talk may then turn to iniquities of grants and funding, at which point you might feel the urge to leave. However, these topics aside, you should find *H. geneticus* to be of a congenial disposition.

There are those who fear that *H. geneticus* is in danger. They worry that because of its propensity to cross with other species, it will become subsumed in an interdisciplinary hybrid swarm, with traditional ideals being lost. Others welcome these developments, and take them as a measure of the success of a very adaptable species. Whatever your view, there can be no doubt that *H. geneticus* has been very influential in shaping our scientific ideas for more than a century, and that the hundredth birthday of its earliest society is more than worthy of celebration.