

Correspondence

Could offshore wells save coastal cities?

In view of extreme water shortages in major coastal cities — last year's in Cape Town, South Africa, and this year's in Chennai, India, are just two examples — we argue for the investigation of offshore groundwater reservoirs as a potential solution.

These reservoirs are found in marine sediments and developed when large continental shelf areas became exposed during the last Ice Age.

We evaluated the distribution of these reservoirs in relation to the likelihood of water shortages in nearby coastal cities (see go.nature.com/2mkmyat). Cities around the East China Sea have many potential sites, as do the Sunda Shelf and the Australian coast. Some of the reservoirs with greatest potential are located conveniently for Jakarta, Cape Town, Singapore and Beijing. However, there is limited potential in Chennai.

There is an urgent need to map these resources, determine their likely responses to climate change and assess how much water they could sustainably supply.

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Ousting of an odious moniker

In her review of the book *How the Brain Lost its Mind*, Anne Harrington discusses the work of Jean-Martin Charcot on the illness known at the time as 'hysteria' (see *Nature* 572, 436–437; 2019). She does not, however, mention the earlier contribution of the French physician Pierre Briquet (1796–1881). Briquet's treatise of 1859 is still guiding research into the condition, now known as functional neurological symptom disorder.

Charcot embraced the misogynistic pseudo-theory that neurological symptoms

with no clear pathophysiology arose from problems in the patient's uterus (hence the odious moniker 'hysteria', from the Greek for 'of the womb'). By contrast, Briquet took an evidence-based approach. In an epidemiological study of 430 of his own patients, he debunked the association with the uterus by noting that the condition also affected men (P. Briquet *Traité Clinique et Thérapeutique de l'Hystérie*; Libraries of the Imperial Academy of Medicine, 1859); see also F. M. Mai and H. Merskey *Can. J. Psychiatry* 26, 57–63; 1981).

Briquet's prescient conclusion was that 'hysteria' arose from the troubles of life weighing on what he called the "affective part" of the brain (as opposed to the intellectual parts) in susceptible individuals.

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No IQ tests for early US immigrants

Your caption for a photograph of immigrants at Ellis Island (A. Saini *Nature* 571, 474–475; 2019) perpetuates the myth that immigrants routinely underwent IQ tests as part of the process for entering the United States in the 1920s. The Immigration Act of 1924 did not mandate intelligence testing of immigrants.

The myth came about in part because of ill-founded claims by psychologist and eugenicist Henry Goddard, who conducted research on the island in 1913. Goddard subsequently gained notoriety for having manipulated photographs to highlight the supposed deleterious effects of illegitimate parentage.

The photograph depicts immigrant screening for suspected cases of severe cognitive impairment, as devised by assistant surgeon Howard Knox. Candidates were tasked with solving puzzles such as

jigsaws with a few rectangular pieces. The aim was to refer to medical staff any applicants who might need institutional care and so be a burden on public funds. Contrary to your implication, the inspection station was entirely unsuited to formal intelligence testing.

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Darwin and Nature's 150th anniversary

Among Charles Darwin's lesser-known publications are about 40 short pieces that appeared in *Nature* between 1869, the year in which the journal launched, and 1883, a year after the naturalist died. Most were Letters to the Editor (now Correspondence), and the topics they embraced included inheritance, flowers and fertilization and the origin of different instincts.

In one piece, he emphasizes that the evolution of species is influenced by environmental action on organisms and by inherited effects on the use and disuse of parts, as well as by natural selection (*Nature* 23, 32; 1880). In another, he gives some interesting instances of inheritance (*Nature* 24, 257; 1881). He also suggested that animals could inherit particular fears that could have been acquired through habit and from experience of their usefulness (*Nature* 7, 281; 1873) — an idea now backed by experimental evidence (B. G. Dias and K. J. Ressler *Nature Neurosci.* 17, 89–96; 2014).

Darwin proposed a mechanism of 'pangenesis' to account for hereditary phenomena. This assumed that cells continually emit minute particles or molecules ('gemmules') that diffuse from cell to cell, circulate through the body and are transmitted from parent to offspring. He defended his idea against widespread criticism

from his contemporaries (*Nature* 3, 502–503; 1871). It could be argued that his gemmules were in fact circulating cell-free DNA, mobile RNAs and extracellular vesicles (see Y. Liu and Q. Chen *Nature Rev. Mol. Cell. Biol.* 19, 749–750; 2018).

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Giant fish bucks population decline

Your choice of an arapaima fish (*Arapaima gigas*) to illustrate the alarming decline in giant freshwater fish is misleading (*Nature* <http://doi.org/dbv4>; 2019). This species is a conservation success, showing that it is still possible to reverse such megafauna declines.

Arapaima fish are harvested within a legal, sustainable, community-based arrangement pioneered by Brazil's Mamirauá Sustainable Development Institute in 1999 (www.mamiraua.org.br). Use of this system in the Brazilian Amazon, regulated at the state and federal level, has led to the recovery of wild arapaima populations, with some increasing by more than 425% (J. V. Campos-Silva *et al. Freshwater Biol.* 64, 1255–1264; 2019).

Although arapaima in the Amazon basin followed the global decline in giant fish populations through the 1990s (F. He *et al. Glob. Change Biol.* <http://doi.org/dbwb>; 2019), this was subsequently corrected using management strategies based on stock assessments and government fishing quotas. Such measures have also led to an increase in arapaima populations inside a protected area in the Peruvian Amazon (see go.nature.com/2ndykbjg; in Portuguese).

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*On behalf of 11 signatories (see go.nature.com/2m7fe6v).