



The Form and Function room at the Steinhardt Museum of Natural History in Tel Aviv.

NATURAL HISTORY

Israel's wild treasury

Josie Glausiusz tours Tel Aviv's stunning new museum of natural history.

A glass case crammed with a glorious jumble of stuffed animals and birds greets me as I enter the atmospheric Treasures of Biodiversity gallery at the new Steinhardt Museum of Natural History in Tel Aviv, Israel. This cabinet of curiosities contains century-old specimens collected by German ornithologist Ernst Schmitz. In 1908, Schmitz travelled to Jerusalem — then part of the Ottoman Empire — and opened a natural history museum showcasing a spectacular collection of rare mammals, butterflies and other insects, reptiles and birds' eggs, many gathered by local Bedouin people. These riches are now on display among the museum's vast holdings.

"This is the last Nile crocodile in Israel," says Tel Aviv University zoologist Tamar Dayan, chair of the museum and the driving force behind its creation. "This is the last cheetah in Israel. The leopard comes from the Judean Mountains, from

Steinhardt Museum of Natural History

Tel Aviv, Israel.

Preliminary opening from 2 July.

a population that no longer exists. This is the last oryx in Israel, and the last bearded vulture. We have a lot of 'lasts' here." The glass case encapsulates the loss of many species — a full third of the large mammals in what is now Israel. Conveying the magnitude of this change is a key part of the museum's mission.

In this, it succeeds. Much of the exhibition space is inevitably allocated to displaying some of its 5.5 million skeletons and other specimens of flora and fauna, previously dispersed over the campus of the adjacent Tel Aviv University. But the causes of biodiversity loss in Israel are also front and centre. Charts in Hebrew, English and Arabic deliver the facts on climate change, habitat destruction, invasive

species, pollution and over-exploitation of marine resources. A 6-metre-long interactive map of the region enables visitors to witness a century and a half of environmental impacts. For example, over-use of water has indirectly shrunk the Dead Sea, and unchecked construction has destroyed some two-thirds of Israel's coastal sand dunes since the country was established in 1948. It points, too, to the impacts of invasive species, pollution and hunting.

Some two decades in the making, the museum itself is an architectural jewel, designed by Kimmel Eshkolot Architects in Tel Aviv to resemble a treasure chest. The light-filled building — partly surrounded by an ark-like façade of wood veneer — can be navigated entirely on ramps and walkways, and is fully accessible for wheelchairs and prams. As at the Darwin Centre in London's Natural History Museum, visitors can gaze through windows beyond the taxidermy

to watch scientists studying taxonomy and systematics, biogeography and ecology, invasion biology, evolution, zooarchaeology, archaeobotany and more. Five hundred researchers will work in the museum.

The ramp system drew some criticism at the design stage from people concerned that it would encourage children to run around. Architect Michal Kimmel Eshkolot thinks that this is a good thing: public buildings, she tells me, “should be friendly to people,

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inviting, the opposite of intimidating”. Children are just as likely to be mesmerized by the exhibits. The Form and Function room is filled with artfully mounted animals — including a caracal leaping to capture a ground-dwelling bird called a black francolin— and the skeletons of native and non-native mammals and birds. A replica velociraptor hangs from the ceiling (although, as Dayan admits, the only traces of dinosaurs found in Israel are footprints). Bugs and Beyond celebrates entomology, including cases filled with live Madagascar hissing cockroaches, giant stick insects and pinned tarantulas and butterflies of all colours and sizes. Kids can also watch a video of a dead rodent decomposing in half a minute, its fur and bones replaced by grass and a graceful toadstool.

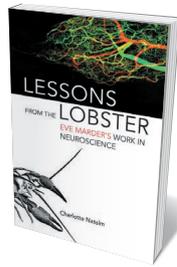
Creative use of space is integral. Six shallow dioramas showcase the mammals, birds and insects found in six Israeli habitats: desert, sandy, aquatic, Mediterranean woodland and scrubland, the Hermon mountains and non-native, fire-prone pine plantations. A cast of a giant minke whale skeleton (in whose bones pigeons nest) hangs in an alcove open to the sky.

The museum’s most dramatic display is also airborne. The Great Bird Migration is a swirl of avian travellers soaring high above our heads in the great entrance hall. Among them are the common crane, grey heron, greater flamingo, osprey, white stork, great white pelican and black kite. They represent some of the 500 million birds that fly over Israel in spring and autumn. Many are listed among the winged creatures that the Hebrew Scriptures’ book of Leviticus prohibits the Israelites from eating. It’s a reminder, perhaps, that these birds have been present in the region for thousands of years and probably much longer. And that, if we do not protect them, this is how they will end up: stuffed. ■

Josie Glausiusz writes about science and the environment for magazines including National Geographic, Scientific American and Hakai.

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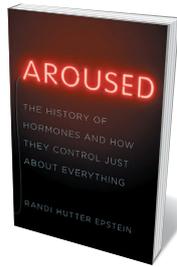
Books in brief



Lessons from the Lobster: Eve Marder's Work in Neuroscience

Charlotte Nassim MIT PRESS (2018)

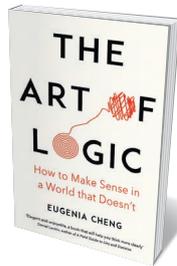
For 40 years, neuroscientist Eve Marder has researched a tiny clutch of specialized neurons controlling the crustacean stomach — the stomatogastric ganglion. From that intense, data-centred process, she has gleaned key findings on the operation of neuronal circuits, neuronal homeostasis and neuroplasticity. Charlotte Nassim’s richly detailed ‘thought biography’ unpeels the minutiae of lab life, revealing how Marder, “without technological fireworks or lavish funding”, has illuminated areas of human neuroscience such as brain variability. A nuanced portrait of an inspired scientist at work.



Aroused

Randi Hutter Epstein W. W. NORTON (2018)

Hormones may be ringmasters of the bodily circus, controlling everything from sex to metabolic function, but in this invigorating history they become stars of the show. Medical journalist Randi Hutter Epstein navigates endocrinology’s messy evolution through players such as neurosurgeon Harvey Cushing, who indefatigably researched the pituitary ‘master gland’, and driven Nobel laureate Rosalyn Yalow, who co-invented radioimmunoassay. Here, too, is the wilder side, from a testicle-swapping experiment on roosters to the animal-ovary elixirs once prescribed for menopausal women.



The Art of Logic

Eugenia Cheng PROFILE (2018)

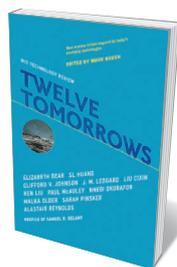
Nothing in the world, notes mathematician Eugenia Cheng, behaves according to logic. Yet, in an era awash with conflict, exploitation, tribalism and fake news, the “illuminating precision” offered by logic is important. Cheng harnesses the power of abstraction to explore real-life phenomena such as sexism and white privilege. She walks us through the grand terrain of logic, from axioms to proofs. And she reveals how to build arguments as long chains of logical implications — a “virtuosic and masterful” skill that, combined with intelligent emotional engagement, can cut through pervasive irrationality.



Rising

Elizabeth Rush MILKWEED EDITIONS (2018)

This evocative exercise in lyrical reportage by Elizabeth Rush tracks sea-level rise in the here and now, by way of the disintegrating shores and salinated soils of the coastal United States. Rush journeys from the low-lying Isle de Jean Charles off Louisiana to Maine, Florida, New York and beyond, gathering stories from field biologists, climate scientists and beleaguered citizens as she goes. She touches, too, on the ten successive Atlantic storms that became hurricanes in 2017, from Franklin to Ophelia. At once a powerful group portrait of lives and communities on the brink, and a lament for lost habitats.



Twelve Tomorrows

Wade Roush (ed.) MIT PRESS (2018)

This MIT Technology Review anthology is a science-fictional exploration of emergent technologies and a veritable constellation of brilliant writers, among them Liu Cixin, Ken Liu, Alastair Reynolds, Elizabeth Bear and Sarah Pinsker. Ken Liu is on masterful form in ‘Byzantine Empathy’, a visceral narrative shaped around cryptocurrency; Pinsker’s ‘Escape from Caring Seasons’ plays with wrist chips and drone armies; and Bear’s ‘Okay, Glory’ features a smart home turned kidnapper. A profile of esteemed sci-fi author Samuel R. Delany is included. ‘Hard’ sci-fi at its best. [Barbara Kiser](#)

CORRECTION

And in the review 'Israel's wild treasury' (*Nature* **558**, 516–517; 2018), the picture credit should have been "Itai Benit".