

**PROPER NAME TO ZOONYM AS A NEOLOGISATION DEVICE, 2:
ISRAELI HEBREW NAMES FOR EXTANT AND MESOZOIC TAXA**

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Proper name to zoonym as a neologisation device, 2: Israeli Hebrew names for extant and Mesozoic taxa

Abstract: Part I discussed how Abramowitsch (1866, 1872) neologised Modern Hebrew zoonyms sometimes by taking a proper name from the Hebrew Bible, and remotivating it semantically (by metanalysis), so as to make it suitable for the zoological taxon he wanted to name. In the present Part II of this study (see Table 1), we are going to discuss how this neologisation device has on occasion persisted in the formation of Israeli Hebrew zoological terminology. We consider in turn: a toponym motivating a fish name (for *Lethrinus*) in Israeli Hebrew; names for the rodent *Meriones* ‘jird’; and then Nissan’s own Israeli neologised common names for the *Archaeopteryx* (‘ofnî, from a toponym in *Joshua*) and for the Avialans (‘ofna’îm); then an example from Mesozoic flying reptiles: pterosaurs named by remotivating a toponym; and then in particular the flamingo metaphor for *Pterodaustro guinazui*, this exemplifying naming an animal taxon by metaphor from another animal taxon.

Keywords: toponyms recycled as zoonyms (for the fish *Lethrinus*; for the rodent *Meriones* ‘jird’), language modernisation, Israeli Hebrew, naming an animal taxon by metaphor from another animal taxon, common names for fossils (*Archaeopteryx*; Avialans; Pterosaurs; *Pterodaustro guinazui*).

1. Modern Hebrew bird names: A history of terminology

In Part I of this article, we saw how Abramowitsch (1866, 1872) resorted to a neologisation device, such that in order to coin a Modern Hebrew zoonym, he would take a proper name from the Hebrew Bible (a place name, or on occasion a personal name), and would then remotivate it semantically (by metanalysis), so as to make it suitable for the zoological taxon he wanted to name.

In the present Part II of this study (see Table 1), we are going to discuss how this neologisation device has on occasion persisted in the formation of Israeli Hebrew zoological terminology.

Table 1. Structure of this article
1. Introduction
2. Toponym to Fish Name (for <i>Lethrinus</i>) in Israeli Hebrew
3. Names for <i>Meriones</i> ‘jird’

4. Names for the *Archaeopteryx* ('ofnī, from a Toponym in *Joshua*) and for the Avialans ('ofna'im)
5. An Example from Mesozoic flying reptiles: Pterosaurs named by remotivating a toponym
6. The flamingo metaphor for *Pterodaustro guinazui*
7. Concluding remarks
- References

2. Toponym to Fish Name (for *Lethrinus*) in Israeli Hebrew

Fish of the genus *Lethrinus* are called *emperor bream* or *red mouthed bream* in English. They are called שׁוּר *sur* by Israeli zoologists (Dor 1965: 329), was apparently called that way by adapting (cf. Biblical Hebrew שׁוּר *šur* as a place name, and the poetic imperative שׁוּר *sur!* 'look!')¹ one of the Arabic names of that fish: *ša'ūr*, *šī'arī*, *šā'irī* (cf. Oman 1992: 93). In terms of terminological quality, a disadvantage of Israeli Hebrew שׁוּר *sur* for fish of the genus *Lethrinus* is that when written without any diacritical mark, שׁוּר <šwr> is a homograph of שׁוּר <šwr>, i.e., שׁוּר *šor* 'ox', which is also a zoonym. The different likely contexts may enable disambiguation, but consider that even among fish names, one comes across the compound שׁוּר הַיָּם *šor hayyám* (literally, 'sea ox'),² for the shark species *Pteromylaeus bovinus*. Its English name is *bull ray*. By the 2000s, it is called פֶּרַחַן *tħn pr* *takhan pàr*, by Israeli zoologists. Apparently the reason for the change was the wish to use a distinct name for the genus, then adding *par* 'bull' for the species.

3. Names for *Meriones* 'jird'

The rodent genus *Meriones* (of which one species is kept as a pet) is a gerbil genus:

Meriones is a rodent genus that includes the gerbil most commonly kept as a pet, *Meriones unguiculatus*. The genus contains most animals referred to as *jirds*, but members of the genera

¹ The English name *bream* (or *sea bream*) is also associated with sea fishes. In particular, this is the case of the species of the sea fish genus *Lethrinus* (with a few of them known as *parrot-fish*), from the Indian Ocean and the Pacific. Its Modern Hebrew name is *shur* (שׁוּר), patterned after Its Arabic names *shī'arī*, *sha'ūr*, or *sha'irī*. (In Biblical Hebrew, *shur* is a high-register word for both 'wall' and 'behold!', and is also the name of the Desert of Shur.)

² In a paper by Paul Barbier, fils (1910), Sec. 89 is about Latin *asellus*, *asinus* (which are primarily names for 'donkey'). By semantic calque from the Greek equivalent (the fish name *onos*), one also finds the "sea donkey" (the genus *Gadus*?) in the Aramaic of the Babylonian Talmud: *ħamma de-yamma* חֲמַרָּא דִּימָא <ħmr' dym> stated to be kosher (Babylonian Talmud, at *Avoda Zara* 39a; cf. Dor 1997: 174), whereas contiguously the *tora de-yamma* תּוֹרָא דִּימָא <twr' dym> (Aramaic for "sea bull") is stated to be non kosher (*Avoda Zara* 39a; Dor 1997: 180). As a mnemonic device, the talmudic text pointed out a paradox: "Abbaye said: the 'sea donkey' is kosher, the 'sea bull' is non kosher. The signs for you [to remember] are: the one unclean [i.e., the kind of beast living on earth] is clean [i.e., the fish so named in the sea], and the one clean [the kind of beast on earth] is unclean [i.e., the fish]." Lewysohn (1858), followed by Dor (1997: 180), identifies the *tora de-yamma* with the ray, a cartilaginous fish. Dor also has an entry for the *ħamma de-yamma*, which he identifies with the genus *Gadus*, i.e., the cod, a sea-fish called שִׁבּוּץ *šibbúṭ* in Israeli Hebrew, in contradiction with the talmudic tradition and the Iraqi Jewish tradition up to the present, for which that name denotes a particular, much appreciated kind of riverine fish.

Sekeetamys, *Brachiones*, and sometimes *Pachyuromys* are also known as *jirds*. The distribution of *Meriones* ranges from northern Africa to Mongolia. *Meriones* jirds tend to inhabit arid regions including clay desert, sandy desert, and steppe, but are also in slightly wetter regions, and are an agricultural pest.³

The literal sense ‘running mouse’ is expressed by the German name, *Rennmaus*, for the genus *Meriones*. Cf. in Dutch *renmuis*. As *Meriones tristrami* is the species of *Meriones* that is found in the inhabited parts of Israel, it is called מְרִיּוֹן מַצִּי' *meryón matsúy*, literally ‘common *Meriones*’ in Israeli Hebrew (Dor 1965: 197). “*Meriones tristrami* is found from Turkey in the west, to the Caucasus (Armenia, Azerbaijan), and south through Iraq, Syria, Lebanon and Israel to Jordan and Iran. It has also been recorded from the Greek island of Kos, although it has not been seen there for more than a decade”⁴ relative to Sozen et al. (2008, version of 2011). The other two species of *Meriones* that are found in Israel are the following:

- *Meriones sacramenti* (the species with the largest size in this genus), only found in Israel, and inside Israel only on the coastal dunes between Tel-Aviv and Ashkelon as well as in the area of the town of Revivim (Dor 1965: 197). Its English name is *Buxton's jird*, whereas in Israeli Hebrew it is called מְרִיּוֹן-הַחֹלֹת *meryón hakholót*, literally ‘*Meriones* of the dunes’ (a name that would be ambiguous elsewhere, but in Israel is satisfactory);

- *Meriones crassus*, similar to *T. tristrami* but with longer hair, which is also more morbid. Its English name is *Sundevall's jird*, but in Israeli Hebrew it is called מְרִיּוֹן-הַמִּדְבָּר *meryón hamidbár*, literally ‘*Meriones* of the desert’. In fact, its distribution inside Israel is where that of *M. tristrami* stops, namely, it lives in the Negev desert, from Yeruham south to Eilat (Dor 1965: 197).

The genus name *Meriones* has an antecedent (though not necessarily a semantic motivator) in Greek mythology,⁵ where it is the name of a character who kills seven men

³ [http://en.wikipedia.org/wiki/Meriones_\(genus\)](http://en.wikipedia.org/wiki/Meriones_(genus))

⁴ http://en.wikipedia.org/wiki/Tristram's_jird The species “*Meriones tristrami* was first described by Oldfield Thomas in 1892. He based his description on type material from the Dead Sea region of Israel collected by ‘Canon H. B. Tristram’ (Henry Baker Tristram), who is commemorated in the specific epithet *tristrami*. It is classified in the subgenus *Pallasiomys* of the gerbil genus *Meriones*, and its members have sometimes been included within the species *Meriones shawi*” (*ibid.*). Cf. Thomas (1892).

⁵ Personal names from Greek mythology or literature do occur sometimes in scientific names from zoology, or then in common names.

(A) The ciconiid African bird *Ibis ibis*, called in Israeli Hebrew אִיבִּיס טַנְטַל *ibis tantal*, occurs in Israel (Dor 1965: 20, s.v.). Dor's index (*ibid.*: 412, s.v. Stork) gives the English name as *Wood Stork*, and the Israeli name as אִיבִּיס טַנְטַלוּס *ibis tantalus*. It was apparently named after Tantalus (the forever starved character from Greek mythology) because of how voracious it is. The spelling טַנְטַל is also the one one would use in order to transcribe the common noun *tántal* from Arabic, denoting a kind of demon. This, however, is utterly unlikely to have had any impact whatsoever about the bird name in the form Israeli Hebrew אִיבִּיס טַנְטַל *ibis tantal*, for the simple reason that the zoologists involved, because of their personal background, can be expected to have been unaware of the Arabic word. The zoologist Menachem Dor was born in Romania, and his doctorate was from France. Cf. names for *Mycteria ibis* = *Mycteria ibis*, including English *Yellow-billed Stork* and French *Tantale africain*. According to Greek mythology, Tantalus was left to stand forever in a pool of water,

(a motif from international folklore; cf. Italian *ammazzasette*, and in Arabic *qátal sá'b'a* 'he killed seven'). Meriones was a hero of the Trojan War:

tethered to a tree rich with delicious fruit, which he could never grasp, as when he attempted to drink, the water disappeared; when he reached, the fruit moved just beyond his grasp. Hence his voraciousness; but he was condemned because of his avariciousness. (In contrast, the Shiite Ashura period of mourning commemorates the Imam Hussein being made to die of starvation with food and drink in sight which he could not reach; in that other case, however, this was not made into a symbol of voraciousness.) Henry Seyrig (1934) related the voraciousness of the ibis to the thirst of Tantalus, while discussing inscribed gems used as medical amulets, from late antiquity. On one such magical gem, made of haematite and now at the Cabinet des Médailles in Paris, there is an invitation in Greek: ΔΙΨΑC TANTAAE AIEMA ΙΙΙΕ "You are thirsty, Tantalus, drink blood". That amulet was discussed by Alphonse Barb (1952). Attilio Mastrocinque (2000) discussed this and other similar amulets, and proposed that the Greek formula they bear originated from an anecdote (related in the *Vita Damasci*, fragment 106) about the philosopher Hierocles, who, having been flogged and covered in blood, was led into the presence of the judge who had condemned him, held out his hand and offered to him some blood it contained, addressing him as a Cyclops: just as he had eaten human flesh, let him, the Cyclops, now drink wine (cf. *Odissey* IX.347). I suggest that Tantalus being given such a role in amulets may have given rise, after the Islamisation of the Levant, to the folkloric type of the demon Tantal in Arabic-speaking cultures.

(B) The nightingale (*Luscinia megarhynchos*) is called in French *rossignol philomèle* (German *Nachtigal*), as opposed to the larger bird *rossignol progné*, i.e. *Luscinia luscinia*, English *thrush-nightingale*, German *Sprosser*). This is because of the myth about two sisters who underwent metamorphosis into birds.

(C) Astyanax was Hector's toddler son, thrown by Ulysses from the walls of Troy. *Astyanax* is the scientific name of a freshwater fish genus from the family *Characidae*. "The generic name comes from Astyanax, a character in Greek mythology who was the son of Hector of Troy; in homage to this, several specific epithets also refer to the *Iliad*" (this is quoted from the webpage [http://en.wikipedia.org/wiki/Astyanax_\(fish\)](http://en.wikipedia.org/wiki/Astyanax_(fish))). This claim does not appear to be supported by the list of scientific names for 138 species of that genus, which appears in the same webpage (for only very few of the species, common names were indicated). "Some of these fish, like many of their relatives, are kept as aquarium pets and known collectively as tetras" (Wikipedia, *ibid.*). Is it some fancy common name for aquarium breeds or species, that was inspired by the *Iliad*? If we are to consider binomial scientific names, then the only name which is relevant to the *Iliad* is *Astyanax troya*, of a species named and described in 2002 by Azpelicueta, Casciotta and Almirón. In contrast, the following is not relevant to the *Iliad*: the Central Tetra or Banded Tetra is the species *Astyanax aeneus*, in whose scientific name the Latin adjective *aeneus* means 'copper-coloured', and is not a reference to the Trojan hero Aeneas. (Also the species *Astyanax fasciatus* is called *Banded Tetra*, or *Banded Astyanax*.)

Astyanax is also used as a common name, e.g., *two-spot astyanax*. The species is *Astyanax bimaculatus* (the English common name is a semantic calque from the scientific name), and it is also called *twospot tetra* in English. The type species, *A. mexicanus*, is called *Mexican tetra*, a form of which species is called *blind cave fish*. Actually, there also is another blind species from caves which belongs to the same genus: *Astyanax jordani*, called in English *Cave Tetra*, and in Spanish *sardina ciega* (literally, 'blind sardine'). According to an explanation given at http://en.wikipedia.org/wiki/Mexican_tetra

A. mexicanus is famous for its blind cave form, which is known by such names as *blind cave tetra*, *blind tetra*, and *blind cavefish*. Some thirty distinct populations of Mexican tetras live in deep caves and have lost the power of sight and even their eyes. These fish can still, however, find their way around by means of their lateral lines, which are highly sensitive to fluctuating water pressure.

In Greek mythology, Meriones (Greek: Μηριόνης) was a son of Molus and Melphis or Euippe. Molus was a half-brother of Idomeneus. Like other heroes of mythology, Meriones was said to be a descendant of gods. As a grandson of Deucalion (son of Minos), Meriones's ancestors include Zeus, Europa, Helios, and Circe. Meriones possessed the helmet of Amyntor, which Autolycus had stolen. He inherited the helmet from his father Molus and later gave it to Odysseus. Meriones killed seven men at Troy.⁶

Without diacritic marks, the spelling is מריון <mrywn>. In the early rabbinic literature, one finds a masculine anthroponym spelt מריון <mrywn> (Maryon < Greek Μαρίων). The prosopography (i.e., the pool of persons bearing that name) comprises the following: "Isaac the son of Marion" (יצחק בן מריון) in the *Jerusalem Talmud*, tractate *Sukkah*, 2, 53a); "Marion, the son of Ravin (Rabin)" (מריון בריה דרבי) in the *Babylonian Talmud*, tractate *Mo'ed Katan*, 11b); "the estate of the house (family) of Bar Marion (Son of Marion)" (נכסי דבי בר מריון) – in the *Babylonian Talmud*, tractate *Bava Batra*, 12b: "We reckon this field as specially valuable like the property of the family of Mar [or: Bar] Marion"; "the sons of Bar Marion" or "members of the Bar Marion family" (בני בר מריון) in MS Munich of tractate *Bava Metsi'a*, 84b, of the *Babylonian Talmud*). Moreover, from the verb מרה mará 'to disobey', in the *Pesikta de-Rav Kahana* (ed. Solomon Buber) at *Ekhah*, p. 122b – Buber's edition is now superseded by B. Mandelbaum's (1962) – one finds the word in the masculine plural מריונים <mrywnym> (to be read *meryoním*, like the plural of the modern zoonym for *Meriones*!) denoting 'rebels', the singular being מריון <mrywn>, and with the vowels the word was conjectured to be מריון *meryon* by Marcus Jastrow in his dictionary (1903: 842; see the last two entries of the second column).

4. Names for the *Archaeopteryx* ('ofní, from a toponym in *Joshua*) and for the *Avialans* ('ofna'im)

Avialans (*Avialae*)⁷ are sometimes considered to be the more general taxon of true birds, *Aves*. Typically however one distinguishes between the class *Aves* (according to a more traditional approach to taxonomy) and the clade *Avialae* (according to cladistics). The *Archaeopteryx*, usually considered to be the typical avialan, or as the stem of the clade *Avialae*, was first discovered in 1861, in the Late Jurassic limestone deposits of Solnhofen, Germany. Benton (2005: 9) explains the rise of the birds as follows:

The oldest confirmed fossil bird is *Archaeopteryx*, from the late Jurassic rocks of Germany, although an older form, *Protoavis*, from late Triassic deposits of Texas, has been proposed. The status of *Protoavis* is controversial [...]. Until 1990, very few bird specimens were known from the subsequent 60 Ma [i.e., million years] or more of the Cretaceous Period, before the appearance of the extinct hesperornithiforms and ichthyornithiforms of the Niobrara Chalk of late Cretaceous age in North America. Since 1990, spectacular discoveries of toothed and untoothed birds of Early Cretaceous age in Spain and China, found in conditions of exceptional preservation, with feathers and some other soft parts intact, have filled many gaps in the evolutionary tree. Other discoveries of birds in late Cretaceous material from Mongolia and South America have further helped develop a fuller picture of the first half of bird evolution [...]

⁶ [http://en.wikipedia.org/wiki/Meriones_\(mythology\)](http://en.wikipedia.org/wiki/Meriones_(mythology))

⁷ <http://en.wikipedia.org/wiki/Avialae>

By emulating the onomasiological pattern to which Abramowitsch resorted in his *Natural History*, of recycling proper names from the Hebrew Bible as zoonyms, in 2000 I proposed – in a revised report sent in early 2001 to Shragga Irmay of the Academy of the Hebrew Language (Nissan 2001), comprising novel terminology for mammal and bird palaeo- and neontology, i.e., fossil or extant mammals and birds (cf. Nissan 2013a) – to recycle the place-name **עֲפְנִי** ‘*Ofnî* from *Joshua* 18:24 in order to denote *Archaeopteryx* and any member of Order *Archaeopterygiformes* – *sidrât arkheopterika'im* (סִדְרַת אֲרֻכְאוֹפְטֵרִיקָאִים) or synonymously **עֲפְנָאִים** ‘*ofna'im* – the latter by confluence with **עוֹף** ‘fowl’.

Actually it may be preferable, in the context of taxonomical debate from the 2010s rather than from the 1960s, to use **עֲפְנִי** ‘*ofnî* in order to denote *Archaeopteryx* alone, and to use **עֲפְנָאִים** ‘*ofna'im* (masculine plural, along with **עֲפְנָאִי** ‘*ofnáy* as a singular noun,⁸ and **עֲפְנָאִי** ‘*ofna'i* as an adjective) in order to denote the avialans (*Avialae*), and to use **עֲפְנָאִים קַדְמוֹנִים** ‘*ofna'im kadmonim* in order to denote ‘archaic avialans’, and **עֲפְנָאִים טְרוֹם-עוֹפוֹתִים** ‘*ofna'im trom-'ofotim* in order to denote ‘pre-bird avialans’ (by deriving a compound adjective from the plural **עוֹפוֹת** ‘*ofót*, ‘birds’, adjectival derivation from a plural being rare but not unheard of in Hebrew – Jeremiah is called **עֲנֹתוֹת** ‘*antotî* after his Benjaminite town of **עֲנָתוֹת** *Anathoth*, apparently from the sense ‘statues of the goddess Anath’, but the name in the feminine plural also was a first name – as well as in European languages: Church Latin *sanctoralis*, Italian *santorale* ‘of the saints’, from Latin *sanctorum* ‘of the saints’, cf. the Italian family name *Santoro*). If one needs to be precise enough to allow for non-bird avialans living after the earliest true birds were already in existence, one may use the phrase **עֲפְנָאִים שֶׁאֵינָם עוֹפוֹת** ‘*ofna'im she'einám ofót* (literally ‘avialans that are not birds’. Nissan (2001) suggested that it may be that in case **עֲפְנִי** ‘*ofnî* (עוֹפְנִי in the spelling without vowel diacritic marks) would enter use, then speakers would “regularise” it by turning the spelling **עוֹפְנִי** into **עוֹפָנִי** ‘*ofanî* (thus, turning the term into just a derivative of **עוֹף** ‘fowl’).

5. An example from Mesozoic flying reptiles: Pterosaurs named by remotivating a toponym

Also in June 2000, I coined for the same report I then sent to Shragga Irmay, this other zoonym for a flying fossil: from the verbal form **יִדְאֶה** *yid'é* ‘he/it will fly (as a drone)’, and from **יִדְאֶלָּה** *Yid'alál* (the name of a Zabulonite town, i.e., a town in the territory of the tribe of Zabulon, in *Joshua* 19:15), I coined the name **יִדְאֶלָּאִים** *yid'alál'im* for the order of the pterosaurs, as a synonym for the extant but too general **הַזֹּחָלִים הַמְּעוֹפְפִים** *hazokhalim hame'ofefim*, literally ‘the flying reptiles.’⁹ Accordingly, I proposed for

⁸ **עֲפְנָאִי** ‘*ofnáy* as a singular noun sounds somewhat similar to, and therefore reminds of, **עֲתָנָי** *Kfar 'Othnai*, a Roman-age town that used to be considered the southern border of the Galilee.

⁹ Apart from phono-semantic matching of the place-name **יִדְאֶלָּה** *Yid'alál* to the verbal form **יִדְאֶה** *yid'é* ‘he/it will fly (as a drone)’, the final segment *-ala* in the place-name turned into a zoonym may remind of Latin (and Italian) *ala* ‘wing’. This provides additional corroboration to the neologism,

Suborder *Rhamphorhynchoidea* (such was its rank in the classification in Dor 1965) the name *yid'alót-hazzanáv* (יִדְאָלוֹת-הַזָּזָנָב), literally 'tailed pterosaurs', or, more formally (with the suffix *-a'im* in use among zoologists for orders or suborders, in the construct state *-a'ei*) יִדְאָלֵי-הַזָּזָנָב *tat-sidrát yid'alá'ei-hazzanáv*, and for Suborder *Pterodactyloidea* the name *hayyid'alót hameshukhlalót* (הַיִּדְאָלוֹת הַמְשֻׁכְּלָלוֹת), literally 'the more advanced pterosaurs' (where by 'advanced' one means such taxa that have more derived traits with respect to some other, related taxon). An up-to-date treatment of pterosaur taxonomy is in Witton (2013), cf. Nissan (2013b).

Pteranodon was a horned pterosaur; this motivated in Nissan (2001) semantic motivation for the equivalent coinages מְקָרִינָה יִדְאָלָה *yid'alá makriná* (by using a feminine inchoative participial adjective for 'horned') or יִדְאָלָה מְקָרְנֶת *yid'alá makrénet* (by using a variant form of the same feminine participle) or יִדְאָלֶת-הַקֶּרֶן *yid'alát-hakkéren* (literally, 'the pterosaur of the horn') or, using a more elegant form of the construct state, יִדְאָלֶת-הַקֶּרֶן *yid'élet-hakkéren*. I chose to stick to the constructed state of the noun being in the form יִדְאָלֶת *yid'élet*.

6. The flamingo metaphor for *Pterodaustro guinazui*

The pterosaur species *Pterodaustro guinazui* is considered to have been a flamingo mimicker, because of its beak-like snout and especially as it was filter-feeding and digested with the help of stomach stones: the latter were gravel this pterosaur ingested. It was found in the guts of a fossil by Luis Chiappe (Director of the Dinosaur Institute at the Natural History Museum of Los Angeles County) and colleagues Laura Codorniu and Fabricio Cid (Codorniu et al. 2013). "It is also thought to have used its hundreds of long, thin teeth to filter morsels out of shallow water", using "the stones to help grind up the tiny crustaceans it ate". This strategy is commonly seen in filter-feeding birds like flamingos.¹⁰ In Israeli Hebrew, one could call *Pterodaustro guinazui* (Figure 1) metaphorically by the compound יִדְאָלֶת הַשְּׂקִיטָן *yid'élet-hashkitán*, literally 'flamingo pterosaur'. It is enough that with respect to other pterosaurs, this particular species is typified by its having been likened to the flamingo, in order to justify the semantic motivation of that neologism.¹¹

because 'wing' corresponds to the Greek etymological sense of the element *ptero-* in such names as *pterosaur* and *pterodactyl*.

¹⁰ These quotations are from an unsigned report entitled "Prehistoric flier had gravely guts", in *New Scientist*, 218(2921), 15 June 2013, p. 19.

¹¹ <http://en.wikipedia.org/wiki/Pterodaustro> explains: "The genus was named in 1969 by José Bonaparte as an as yet undescribed *nomen nudum* [see below]. The first description followed in 1970, making the name valid, the type species being *Pterodaustro guinazui*. The genus name is derived from Greek *pteron*, 'wing' and Latin *auster*, 'south (wind)'. The elements are combined as a condensed *pteron de austro*, 'wing from the south'. The specific name [i.e., the name for the species] honours paleontologist Román Guiñazú. It was emended in 1978 by Peter Wellnhofer into *guinazui*, because diacritical signs such as the tilde are not allowed in species names." *Pterodaustro* fossils were found in the late 1960s in Patagonia (in Argentina) and later also in Chile. "At the Argentine site, the just 50 m² large 'Loma del *Pterodaustro*', since then during several expeditions over 750 *Pterodaustro* specimens have been collected, 288 of them having been catalogued until 2008. This makes the species one of the best known pterosaurs, with examples from all growth stages, from egg to adult" (*ibid.*). As for a



Figure 1. A reconstruction by Nobu Tamura, from 2009, of *Pterodaustro guinazui* – its colour painted pink in the 2009 version (as opposed to a previous version from 2006, brownish and without the landscape), because crustacean diet may have given it that pigment, like at present with flamingo (which turn white if their diet is modified). In the public domain.¹²

Pterodaustro has a very elongated skull, up to 29 centimetres long. The portion in front of the eye sockets comprises 85% of skull length. The long snout and lower jaws curve strongly upwards; the tangent at the point of the snout is perpendicular to that of the jaw joint. *Pterodaustro* has about a thousand bristle-like modified teeth in its lower jaws that might have been used to strain crustaceans, plankton, algae, and other small creatures from the water. These teeth stand for the most part not in separate alveoli but in two long grooves parallel to the edges of the jaw. They have a length of three centimetres and are oval in cross-section, with a width of just 0.2-0.3 millimetres. At first it was suspected these structures were not true teeth at all, but later research established they were built like normal teeth, including enamel, dentine and a pulpa. Despite being made of very hard material, they might still have been flexible to some extent

nomen nudum, it is “a designation which looks exactly like a scientific name of an organism, and may well have originally been intended to be a scientific name, but fails to be one because it has not (or has not yet) been published with an adequate description (or a reference to such a description), and thus is a ‘bare’ or ‘naked’ name, one which cannot be accepted as it currently stands. Because a *nomen nudum* fails to qualify as a formal scientific name, a later author can publish a real scientific name that is identical in spelling. If one and the same author puts a name in print, first as a *nomen nudum* and later on publishes it for real, accompanied by a description that does meet the formal requirements, then the date of publication of the latter, formally correct publication becomes the name’s date of establishment” (http://en.wikipedia.org/wiki/Nomen_nudum).

¹² http://en.wikipedia.org/wiki/File:Pterodaustro_BW.jpg Image released into the public domain on Wikimedia Commons, under the terms of a GNU Free Documentation License.

due to their extreme length-width ratio, a bend of up to 45° being possible. The upper jaws also carried teeth, but these were very small with a flat conical base and a spatula-formed crown. These teeth also do not have separate tooth sockets but were apparently held by ligaments in a special tooth pad, that was also covered with small ossicles, or bone plates.

The back of the skull was also rather elongated and in a low position; there are some indications for a low parietal crest.

Pterodaustro had an adult wingspan of 250 centimetres (8.20 ft) to 300 centimetres (9.84 ft). Its hindlimbs are rather robust and its feet large. Its tail is uniquely elongated for a pterodactyloid, containing 22 caudal vertebrae, whereas other members of this group have at most sixteen.¹³

The previous quotation is a description of the anatomy of *Pterodaustro*. As for its palaeobiology:

Pterodaustro probably waded in shallow water like flamingos, straining food with its tooth comb, a method called “filter feeding”. Once it caught its food, *Pterodaustro* probably mashed it with the small, globular teeth present in its upper jaw. According to Robert Bakker, like with flamingos, this pterosaur’s diet may have resulted in a pink hue. Thus, it is often dubbed the “flamingo pterosaur”.

At least two specimens of *Pterodaustro* have been found, MIC V263 and MIC V243, with gizzard stones in the stomach cavity, the first ever reported for any pterosaur. These clusters of small stones with angled edges support the idea that *Pterodaustro* ate mainly small, hard-shelled aquatic crustaceans using filter-feeding. Such invertebrates are abundant in the sediment of the fossil site. A study of the growth stages of *Pterodaustro* concluded that juveniles grew relatively fast in their first two years, attaining about half of the adult size. Then they reached sexual maturity, growing at a slower rate for four to five years until there was a determinate growth stop. In 2004 a *Pterodaustro* embryo in an egg was reported, specimen MHIN-UNSL-GEO-V246. The egg was elongated, six centimetres long and 22 millimetres across and its mainly flexible shell was covered with a thin layer, 0.3 mm thick, of calcite.

Comparisons between the scleral rings of *Pterodaustro* and modern birds and reptiles suggest that it may have been nocturnal, and may have had similar activity patterns to modern anseriform birds that feed at night.¹⁴

In contrast to *Pterodaustro*, most pterosaurs used to rip apart their prey – fish or insects – using sharp teeth, unlike filter-feeding pterosaurs, which we may name by the straightforward semantic calque **יְדָאֵלוֹת מְסַנְנֹת-מָזוֹן** *yid'alót mesanenót-mazón* ‘pterosaurs filtering food’, literally, ‘food-filterer (f.pl.) pterosaurs (f.pl.)’, where the feminine plural participle *mēsannēnōt* is in the construct state ‘filterer of’, with the word for ‘food’ being connected by a genitival relation to the construct state of that participle, instead of as a direct object to the absolute state of that participle (which is also *mēsannēnōt*). When coining names with reference to another animal kind, such as **יְדָאֵלֶת הַשְּׁקִיטָן** *yid'élet-hashkitán* (literally, ‘flamingo pterosaur’) to denote *Pterodaustro*, – I accepted metaphors that were already current in palaeontological popularisation (and, in the case of the flamingo, also in the scholarly literature because of ecomorphism: *Pterodaustro* is a flamingo mimicker). The flamingo metaphor is fairly well motivated, and yet, there are of

¹³ <http://en.wikipedia.org/wiki/Pterodaustro>

¹⁴ <http://en.wikipedia.org/wiki/Pterodaustro>

course features that do not fit. If to you what singles out the flamingo is its abruptly bent beak, then that is not a feature associated with *Pterodaustro*.

In the *Babylonian Talmud*, tractate *Hullin*, 63a, one finds: “Rab Judah said: The *shakitna* with the long legs and red body is permitted”, and the note to שקיטנא <šqyṭn> *shakitna* in the Soncino English translation (Epstein 1935-1948) is “The flamingo”. The next note to that same translation however, “מורזמא”, a kind of flamingo which was known to be permitted”, is so formulated as to suggest that the one who formulated it did not realise that there is no such thing as “a kind of flamingo”. There is one species of flamingo, period, and nothing else resembles it closely. מורזמא *murzama* explicitly in the talmudic text denotes short-legged, red waterfowl which is at present unidentified. The talmudic text states (here again in the Soncino translation): “Rab Judah said: The *shakitna* with the long legs and red body is permitted, and to remember this think of *murzama*; that with the short legs and red body is forbidden, and to remember this think of the law, ‘The dwarf is unfit’; and that with the long legs and green body is forbidden, and to remember this think of the rule, ‘If they turned green it is invalid’”. The mnemonic devices for the two non-kosher birds (whereas the *shakitna* is kosher, whatever it was) refer to quite unrelated things: ‘The dwarf is unfit’ is discussed in *Bekhorot* 45b (where the *Mishnah*, which the talmudic text elaborates upon, enumerates dwarfness among such features that disqualify a man from priesthood – even lefthandedness does – but not an animal from being fit for sacrifice), whereas ‘If they turned green it is invalid’ is discussed in *Hullin* 56a (their capitals because it is a translation of mishnaic text; our {} braces): “MISHNAH. THE FOLLOWING [DEFECTS] RENDER BIRDS TREFAH: { ... } IF THE GIZZARD OR THE INTESTINES WERE PIERCED. IF IT FELL INTO THE FIRE AND ITS INTERNAL ORGANS WERE SCORCHED AND THEYS TURNED GREEN, IT IS INVALID, BUT IF THEY REMAINED RED IT IS VALID.” The discussion there elaborates (their square brackets):

R. Samuel b. Hiyya said in the name of R. Mani: If organs which are normally red turned green [on the hen falling into the fire], but after being cooked turned again to red, it is valid. Why? For it was merely the smoke that had entered into them [and had discoloured them temporarily]. R. Nahman b. Isaac remarked: Then we too can say likewise: If organs which are normally red did not turn green [on the hen falling into the fire], but after being cooked were found to have turned green, it is invalid.

The range of ‘green’ is not necessarily what is at present considered green in Hebrew colour terminology. See e.g. Lazar-Meyn (2004) and Lindsey and Brown (2004) concerning the ‘grue’ colour range.¹⁵

¹⁵ One of the very short homiletical works (*midrashim*) in Jellinek’s collection (1853–1878) *Bet ha-Midrash: Sammlung kleiner Midraschim* is a tale, *The Chair and Hippodromes of King Solomon*, whose Hebrew title is כסא ואיפודרומין של שלמה המלך *Kisse ve-Ippodromin shel Shlomo Hammelekh* (Jellinek, *Beth HaMidrash*, Part 5, pp. 34-39). It provides a legendary description of the magnificence of Solomon’s reign. The final portion associates four colours of garments with different classes of people, as well as with four seasons. “[...] And the gentiles (nations of the world) who were coming from far away in order to bring presents to the King used to wear *yaroq* (green)’. His disciples told him: ‘Why these four kinds of garments?’. He told them: ‘Correspondingly to four seasons (*tequfot*). [...] From Nissan to Tammuz [June/July] the sea is good for sailing, and they used to wear *yaroq* (green). [...]’” The *yaroq* colour is here associated not with greenery (as one would

Menachem (or Menahem) Dor, a zoologist, lived to be almost 100 (1901–1998); his last book was Dor (1997), discussing the fauna at the times of the Bible, the Mishnah and the Talmud. Dor discussed there early rabbinic textual *loci* systematically. Also useful, yet concise in that respect, is his lexicon Dor (1965). Dor (1997) makes no mention of the *shakitna*, but that was perhaps because the volume was edited (here and there sloppily so) from Dor's notes at a time when Dor himself was too weak to be in control, so one cannot draw an inference from that omission alone.

Nevertheless, in Dor (1965) the entry for פְּלָמִינְגוֹ *flamingo* on p. 265 does not make any reference to the modern synonym שְׂקִיתָן *shkitán*, not is it mentioned there that this bird may have been referred to in the talmudic literature. There is an entry שְׂקִיתָן *shkitán* which is merely a pointer to פְּלָמִינְגוֹ *flamingo* on p. 265. Therefore, it may well be that Dor was unsatisfied with the identification of the talmudic bird-name שְׂקִיתָנָא <šqyt'n> *shakitna* or *shkitna* or *shkitana* with the flamingo.

Those Israelis who know that the flamingo is called שְׂקִיתָן *shkitán* are likely to think that the etymology is from שֶׁקֶט *shéket* 'tranquillity', 'silence' (even though a swarm of flamingos standing in a pond may be idyllic, but is noisy). Jastrow (1903: 1622, s.v. שְׂקִיתָנָא *shqitna*) provides the definition "*flamingo* (from its abruptly bent beak)", and points to the past participle (used as an adjective) שְׂקוּט *shaquṭ*, whose own entry (*ibid.*: 1621) has two acceptations: "*stubby, abnormally short*" (of a neck) and "*abruptly bent, angular*". The example for the latter is from the *Babylonian Talmud*, tractate *Bekhorot*, 43a, "he whose head is angular" (in the text from the *Mishnah*, but in printed editions of the *Mishnah* the word is different), explained at 43b: "*shakuṭ* refers to the front of the head (the forehead receding abruptly)" (in Jastrow's translation, *ibid.*).

Concluding remarks

The two parts of this article trace, from the 1860s to the present, the zoonymic neologisation device of recycling a proper name: either a place-name, or a personal name, as found in the Hebrew Bible (or, on occasion, later ancient literature). Part I considered how Abramowitsch (1866, 1872) resorted to this device, in his seminal work for the development of Modern Hebrew zoonymy. In the present Part II, we considered instances of the same device in Israeli Hebrew terminology as per the *status quaestionis* in the 1960s, and we also considered (in the section about *Meriones*) how a similar device also occurs in scientific names in zoology. We then turned to novel terminology (Israeli Hebrew common names) I proposed in 2001 and 2013, in order to name some Mesozoic (i.e., dinosaur-era) taxa of *Aviales* and *Pterosauria*.

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expect because it corresponds to summer), but with the sea and seafaring. This is not the only place, in medieval or earlier texts, where *yaroq* invades the domain of blue. *Yaroq* appears to span sea blue to green to greenish yellow.

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