

Grigory Vorobyev
(Institute for Linguistic Studies, RAS, St. Petersburg)

THEODORE GAZA'S NEOLOGISMS IN *-CILLA/-CULA* AND THE ROLE OF SIXTEENTH-CENTURY REFERENCE BOOKS IN THE FORMATION OF ORNITHOLOGICAL NOMENCLATURE¹

This article continues a series of papers on Latin bird names coined by Theodore Gaza in his translation of Aristotle's *Historia animalium*.

Varro explains the etymology of the bird name *motacilla* as follows: “quod semper movet caudam” (LL 5, 76). Following this explanation, Theodore Gaza, the author of the Latin translation of Aristotle's *Historia animalium* printed in 1476 and extremely authoritative in the sixteenth century, inferred the existence of the word *cilla* ‘bird tail, rump’. Perhaps he drew this idea from a medieval glossary. In any case, it was only for rendering Greek bird names with the component ‘rump’ or ‘tail’ that he coined neologisms in *-cilla*, namely πύγαργος (< πυγή+ἀργός, 618b9) — *albicilla*, πυρρουράς (< πυρρός+οὐρά, 592b22) — *rubicilla*, φοινίκουρος (< φοῖνιξ+οὐρά, 632b28–29) — *ruticilla*. At line 593b3, he rendered πύγαργος with a different neologism, *albicula*, which is to be considered, given the clear etymology of the Greek word, a compound formed from *cūlus* ‘the posteriors, fundament’ rather than a diminutive. Therefore, the word *rubecula* that Gaza coined translating the bird name ἐρίθακος should be, apparently, interpreted as a similar formation, from ἐρυθρός ‘red’ and θᾶκος ‘seat’.

The proposed etymology of these bird names sheds light upon Gaza's method of treating variant readings in the Greek text. It turns out that, at least twice, he translated two *variae lectiones* of the same word and put both in his Latin text, one after another. Certainly, this could be explained by the presence of an incorporated gloss in one of Gaza's Greek *Vorlagen*, not attested in manuscripts extant today, but it could also indicate a contaminative tendency in Gaza's way of translating.

In the second part of the article, early modern reception of the aforementioned Greek and Latin bird names is traced. Namely, it is shown how William Turner's 1544 *Avium praecipuarum, quarum apud Plinium et Aristotelem mentio est, brevis et succincta historia* influenced the formation of modern ornithological nomenclature. The studied cases show that Turner's identifications of Aristotle's bird names with contemporary vernacular ones defined the fate of the Greek words and their Neo-Latin equivalents. Together with the 1555 ornithological volume of Conrad Gessner's *Historia animalium* where those identifications were taken over,

¹ The study was supported by the RFBR, research project РФФИ № 20-012-00357.

Turner's book launched the process of reassigning meanings, a process crucial for the establishment of modern animal nomenclature.

Keywords: Latin bird names, Greek bird names, neologisms, compounds, diminutives, zoological nomenclature, sixteenth-century reference books, Aristotle, Theodore Gaza, William Turner, Conrad Gessner, Pierre Belon.

Г. М. Воробьев

(Институт лингвистических исследований РАН, Санкт-Петербург)

Неологизмы Феодора Газы на *-cilla/-cula* и роль справочников XVI века в становлении научной номенклатуры птиц

Варрон объясняет внутреннюю форму названия птицы *motacilla*: «quod semper movet caudam» (Varro *LL* 5, 76; «поскольку все время шевелит хвостом»). Следуя этому утверждению, Феодор Газа, автор латинского перевода «Истории животных» Аристотеля, напечатанного в 1476 г. и исключительно популярного в XVI в., сделал вывод, будто существует слово *cilla* «птичий хвост, гузка». Он мог позаимствовать это представление из какого-то глоссария. Очевидно, именно поэтому при переводе греческих названий птиц с компонентом «хвост» или «гузка», и только для таких слов, он образовывал неологизмы на *-cilla*: *πύγαρος* (< *πυγή*+*ἄρος*, 618b9) — *albicilla*, *πυρρουράς* (< *πυρρός*+*οὐρά*, 592b22) — *rubicilla*, *φοινίκουρος* (< *φοῖνιξ*+*οὐρά*, 632b28–29) — *ruticilla*. В то время как в *Arist. Hist. an.* 618b9 словом *πύγαρος* названа разновидность орла (у Газы *albicilla*), в строке 593b3 это же слово, засвидетельствованное только в части рукописей и не принятое большинством издателей, встречается в перечислении птиц, кормящихся у пресных водоемов. Поэтому здесь Газа переводит его иначе: не *albicilla*, а *albicula*. Учитывая происхождение от *πύγαρος*, неологизм Газы *albicula* надо считать не диминутивом (~белянка), а производным от *cūlus* «зад» (~белогузка), образованным, вероятно, по модели *obstipecūlus*, *hirsuticūlus* или *sesquecūlus*. Существование неологизма Газы *albicula* заставляет предположить, что и в неологизме *rubecula*, использовавшемся Газой для перевода названия птицы *ἐρίθακος*, следует видеть не диминутив, а образование от *cūlus*, то есть он, вероятно, восстанавливал внутреннюю форму слова как *ἐρυθρός* «красный» + *θακος* «сидение, седалище».

Регулярность использования композитов, образованных по модели «цветообозначение + *-cilla/-cula*» позволяет сделать вывод, что «*rubecula, silvia*» у Газы в *Arist. Hist. an.* 592b22 отражает не чтение «*πυρρός, ὕλας*», как автор считал прежде, а «*πυρρουράς, ὕλας*», то есть Газа включил в свой текст взаимоисключающие чтения, происходящие из разных ветвей рукописной традиции. То же самое происходит в строке 593b3, где он помещает один за другим переводы слова *πύγαρος* и засвидетельствованного в других рукописях на его месте «*ὁ τρύγας*»: «*albicula, tringa*». Возможно, это связано с тем, что в одной из греческих рукописей, которые Газа использовал, глосса, содержащая альтернативный вариант, была инкорпорирована в

текст; не исключено, однако, что он целенаправленно совмещал в своем переводе разные чтения одного и того же слова.

Во второй части статьи на примере этих неологизмов Газы показано, как «Краткая история птиц, упомянутых у Плиния и Аристотеля» Вильяма Тернера (1544 г.), первый орнитологический справочник Нового времени, повлияла на формирование латинской номенклатуры птиц. Тернер впервые попытался систематически отождествить с современными английскими и немецкими названиями птиц названия, упомянутые в «Истории животных» Аристотеля. Последнего он цитировал в переводе Газы и рассматривал греческие названия птиц вместе с их эквивалентами из перевода. Отождествления Тернера были переняты в орнитологическом томе чрезвычайно авторитетной «Истории животных» Конрада Гесснера (1555 г.). Поэтому, судя по рассмотренным примерам, греческие названия в латинской транслитерации и латинские эквиваленты, введенные Газой, закреплялись в научной номенклатуре именно в тех значениях, которые предложил Тернер. Перераспределение значений происходило уже в XVIII в., в связи с введением новых таксонов.

Ключевые слова: латинские названия птиц, греческие названия птиц, неологизмы, композиты, диминутивы, зоологическая номенклатура, справочники XVI века, Аристотель, Феодор Газа, Вильям Тернер, Конрад Гесснер, Пьер Белон

1. Theodore Gaza's neologisms in *-cilla* and *-cula*

1.1. *Albicilla* and *ruticilla*

The Latin bird name *motacilla* is attested once in Pliny (*HN* 37, 156, 2), *en passant*², and once in Varro, who explains it as follows: “*motacilla* quod semper movet caudam” (Varro *LL* 5, 76). This explanation, based on the interpretation of the first part of the word as the root *mot-* ‘to move’, should have been based on a folk etymology. Indeed, Ernout and Meillet (Ernout, Meillet, 2001: 416) suggest comparing *motacilla* with μύττηξ, registered by Hesychius who defines it as ὄρνις ποιός ‘some bird’ (Hsch. M 1995)³.

² “Chloritis herbacei coloris est; eam in ventre *motacillae* avis inveniri dicunt magi congenitam ei” (“Chloritis is a stone of a grass-green colour: according to the magicians, it is found in the crop of the *motacilla*, being engendered with the bird”, cited according to: Pliny 1897: 452; transl. from Pliny 1857: 446). — In quotations, I set animal names in italics. Early modern sources are cited from their first editions. Punctuation and orthography, including capitalization, is normalized in the quotations. The correspondences between modern vernacular bird names and the scientific nomenclature are based on Boehme, Flint 1994 and HBW.

³ Max Niedermann supported Varro's etymology and considered the bird name a composition of *motare* ‘to move about, move intensely’ and *cūlus* ‘the posteriors, fundament’, originally **motacūla* or **motacūlla*, that later on was modified, analogically to diminutives in *-illa*, to become *motacilla*.

Still, Varro's etymology is responsible for the interpretation of the second part of the word *motacilla* as a root meaning 'tail' or 'rump'. Thus the phantom word *cilla*, or rather the phantom root *-cill-*, originated. *Cilla* is not attested *per se*, but it was used to form several compounds in the fifteenth century.

Numerous neologisms⁴ designating animal species were coined by the Byzantine scholar Theodore Gaza in his Latin translation of Aristotle's *Historia animalium*, made in Italy between 1454 and 1473/1474. It was first printed in 1476 and enjoyed great success in the sixteenth century (cf. Monfasani 1999; Beullens, Gotthelf 2007). Many of the words introduced by Gaza made their way into the times after Carl von Linné⁵. Varro's etymology of *motacilla*,

(Niedermann 1897: 65). Niedermann compares it with the parallel structure of the Greek σεισοπυγίς. Still, Walde and Hofmann show that the Greek bird names σεισοπυγίς, σεισούρα, κίλλουρος can hardly underlie the Latin word; they argue that the *-a-* remains unexplicable in Niedermann's etymology, for one would rather have expected **moticilla*. They also convincingly refute the etymology from *muto* 'penis' and *cillēre* 'to move', the existence of the latter being rather questionable, for it is attested only in ancient grammatical texts and glosses for explaining the etymology of *oscillare* and diminutives like *furcilla* (Ernout, Meillet 2001: 120–121), cf. TLL s.v. *cillo*, where the entry is marked with "si vera vox est"; the Greek κίλλ<ο>υρος (attested only in Hsch., as a synonym of σεισοπυγίς), was suggested to be connected with a Baltic word for wagtail (Lithuanian *kielė*, Latvian *ciēlava*, Old Prussian *kylo*) that could have been derived from a verb cognate to κίω, *cieo*; still, a derivation from κίλλος 'gray' is also possible (Beekes 2010: 373). As for the hypothesis that *motacilla* is connected with μύττηξ, supported by Ernout and Meillet, Walde and Hofmann do not approve of it, without any argumentation: "Die Versuche, *-āc-* als ursprünglich zu fassen, führen kaum zum Ziel" (Walde, Hofmann 1938–1954, vol. 2: 115). Michiel de Vaan's dictionary does not mention the word *motacilla* (De Vaan 2008). — On Varro's etymology of *motacilla* cf. Jobling 2010: 261, Jobling 2020, s.v. *Motacilla*: "The mistaken use of *-cilla* for 'tail' in ornithology goes back to mediaeval writers who misread *motacilla*, Varro's name for the wagtail ("quod semper movet caudam") and a diminutive from *motare* 'to move about' or 'shake' (i.e. 'a little shaker or wagger'), as 'shaketail'".

⁴ On early modern Latin neologisms, see Helander 2014.

⁵ The role of the translations of Aristotle in the formation of modern nomenclature of fishes is studied in Beullens 2008. Opening thus a new research path, Beullens confined himself to the names of fishes and had to admit that almost no fish names introduced by medieval and humanist translators of Aristotle's *Historia animalium* entered modern binary nomenclature. Still, applying Beullens' approach to other parts of the animal nomenclature, e.g. to the names of birds, and checking all the occurrences systematically, it can be discovered that post-Linnaean

perhaps mediated by a glossary that already included *cilla* as a lexeme, made Gaza consider the second part of the bird name *motacilla* as a root meaning ‘tail’ or ‘rump’. Indeed, he rendered Aristotle’s πύγαργος, name of an eagle (with clear etymology as a composition of πυγή ‘rump, buttocks’ and ἀργός ‘shining, white’, cf. Chantraine 1999: 951), as *albicilla*⁶. The Greek πύγαργος occurs twice, Arist. *Hist. an.* 563b6 and 618b19. Besides, at 593b5, it is attested as a variant reading where the commonly accepted lemma is “ὁ τρύγγας”. At lines 563b6 and 618b19, Gaza explains the etymology of πύγαργος, attested in transliterated form *pygargus* in Pliny: “Aquilarum plura sunt genera. Unum quod *pigargus* ab albicante cauda dicitur, ac si *albicillam* nomines...” (618b19; Aristotle 1476: f. n [9]r; ms. Vat. lat. 2094, f. f. 143v, l. 3 from below) and “Genera aquilarum non aequae omnia prolem fastidiunt, sed difficilior in alendo una cui nomen *pygargo* cauda albicans dederat” (563b6, with attractio casus; here without the Latin variant *albicilla*; Aristotle 1476: f. i 3r; ms. Vat. lat. 2094, f. 87r, l. 3 from below). On the occurrence at line 593b5, see section 1.3.

A similar case is Gaza’s neologism *ruticilla*, a rendering of the Greek ροινίκουρος, apparently a compound of *rutilus* ‘red, reddish’ and the phantom *-cilla*. The Greek word occurs twice in the *Hist. an.*, at lines 632b28 and 632b29 (the passage will be analyzed in the section 1.3)⁷.

nomenclature in fact owes much to the translators of Aristotle (cf. Vorobyev 2015).

⁶ The Swiss polyhistor Conrad Gessner implicitly approved of the interpretation of *cilla* as ‘bird tail, rump’. Namely, when he recalled a Modern Greek bird name that he cited as *asprocolos*, he adduced a classicizing variant, *leucopygos* (< λευκός ‘white’ + πυγή ‘rump, buttocks’) and, as a Latin translation, *albicilla* (Gessner 1555: 370). — The word *cilla* was still considered existing by Jacob Grimm. Discussing word composition in his *German Grammar*, he noted: “Nähere Forschung lässt im Latein einzelne Zusammensetzungen wahrnehmen, die den griechischen gleichen. Varro 4, 11. Plinius 37, 10. gebrauchen *motacilla* (*motans, agitans caudam*, von einem veralteten Substantiv *cilla, cauda*, das zu *cillere* gehört), ist es dem griechischen σεις-ούρα nachgebildet? Das deutsche *wipp-sterz*, italienische *squassa-coda* entspricht gerade so“ (Grimm 1826: 980–981). On the verb *cillere* cited by Grimm, see n. 3 above.

⁷ Besides, it appears in Hesychius (Φ 707) and in the *Geoponica* (15, 1, 22, 3), both instances based on the cited passage from the *Hist. an.* Transliterated as *phoenicurus*, it is mentioned in Pliny (*HN* 10, 86, 3), also based on Aristotle’s passage. Its etymology appears transparent, ‘red-tail’ (neither Frisk, nor Chantraine, nor Beekes mention this word). — In his

Apart from *albicilla* and *ruticilla*, Gaza's translation contains a similar bird name, *rubicilla*, which deserves special attention.

1. 2. *Rubicilla*. A contaminated reading of Arist. *Hist. an.* 592b22

At line 592b22, in a list of grub-eating birds, the last edition of Aristotle's *Historia animalium*, prepared by David M. Balme and Allan Gotthelf, reads: “μελαγκόρυφος, πυρρούλας, ἐρίθακος” (Aristotle 2002: 342). The word πυρρούλας is a *hapax legomenon*, which is, in this form, attested in no extant manuscript. For this word, Balme's edition lists the following variants: πυρρουλάς L^{rc}. Ald.: πυρρὸς ὕλας C^a A^apr. G^a Q Guil.: πυρουλάς β: πυρρουράς A^arc. Fa X^c γ (exc. L^{rc}). The shift of the accent, from πυρρουλάς to πυρρούλας, is due to Aldus Manutius' intervention in Aristotle 1497 (on this word, see Vorobyev 2018: 249; Vorobyev 2019: 179–185)⁸.

Theodore Gaza's rendering of the passage “μελαγκόρυφος, πυρρούλας, ἐρίθακος” is “*atricapilla, rubicilla, rubecula, silvia*”. As shown in Vorobyev 2018, *atricapilla* stands for μελαγκόρυφος, *rubecula* for ἐρίθακος (Gaza clearly opted for the reading ἐρύθακος)⁹, and two Greek words, X and Y, that Gaza read instead of πυρρούλας were rendered as *rubicilla* and *silvia*. Thus, we might

new translation of the *Historia animalium*, made in the 1530s and published posthumously in 1619, Julius Caesar Scaliger, who constantly criticized Gaza's version, suggested *punicilla* instead of *ruticilla* (Aristotle 1619: 1169). Thus, he followed the same derivation pattern, using *punicus* as an etymologically more precise equivalent of φοῖνιξ than *rutilus*. Scaliger's translation was printed too late to eclipse the authority of Gaza's text, so Scaliger's neologisms did not enter the scientific nomenclature.

⁸ Like πυρρούλας, the words πυρρουλάς, ὕλας, πυρουλάς, and πυρρουράς are *hapax legomena*. — For the explanation of the sigla, see Aristotle 2002: 50–52; on the manuscript tradition of the *Hist. an.*, see Berger 2005. — Now that the first critical edition of the Arabic translation of the *Hist. an.*, by Laurus S. Filius, has been published, it is possible to take the Arabic tradition into consideration. Even though Filius' edition reads here one word, brūsūlās (Aristotle 2018: 280), it has an *s* in the middle (as it is also clear from Michael Scot's transliteration, *forozcheloz*, Aristotle 1994), which apparently indicated that the Greek text underlying the Arabic version indeed read πυρρὸς ὕλας. Filius used the conventionally accepted πυρρούλας for the Arabic-Greek glossary accompanying his edition (Aristotle 2018: 404), but his decision to spell and understand the word as one had been most probably based on the tradition of the Greek text accepted since Aldus.

⁹ The latter reading, clearly referring to ἐρυθρός ‘red’, is present in all manuscripts of the family α, except C^a (Aristotle 2002: 342).

reconstruct the Greek text that he was translating like this: “μελαγκόρυφος, X, Y, ἐρύθακος”. In his translation, he changed the word order, striving for rhetorical euphony (“*atricapilla*, *rubicilla*, *rubecula*, *silvia*”), whereas the correct order would have been “*atricapilla*, *rubicilla*, *silvia*, *rubecula*”).

In Vorobyev 2018 and 2019, I argued that Gaza’s X was πυρρός and Y was ὕλας (i.e. he read “πυρρός, ὕλας”), because ὕλας, as I then demonstrated, was what he rendered as *silvia*. I thought that Gaza’s *rubicilla* stood for πυρρός, considering *-cilla* just a diminutive suffix (Vorobyev 2018: 253, n. 27). However, I have to admit that I then misinterpreted *rubicilla* and *ruticilla* as diminutives and did not take into consideration the word *albicilla* at all¹⁰. Now, the analysis of *albicilla* and *ruticilla* (from πύγαργος and φοινίκουρος) makes clear that Gaza saw the root -ουρ- ‘rump, tail’ in the word X he was translating at line 592b22. Therefore, choosing out of the variants attested in the manuscript tradition, it must be accepted that X should have been πυρρουράς, i.e. Gaza must have reconstructed the Greek text as “μελαγκόρυφος, πυρρουράς, ὕλας, ἐρύθακος”.

This contaminated reading, barbarian from the point of view of modern philology, was supposedly, rather than due to a gloss incorporated into the text by a scribe in one of Gaza’s Greek *Vorlagen*, Gaza’s own intervention. Indeed, his propensity to manipulating the text is known (Perfetti 1995: 261–283), as is also known that he used several Greek manuscripts of Aristotle’s text (Dittmeyer 1902: 31–35; Berger 2005: 144, 155). Hence he must have realized that ὕλας was but a part of the reading πυρουλάς, for which πυρρουράς was a *varia lectio*.

1. 3. *Albicula* and *rubecula*

Similar contamination occurs at line 593b5 where, in a list of birds feeding by lakes and rivers, part of the codices (families β and γ) read ὁ τρύγγας, which is a *hapax legomenon*, while those from the family α have πύγαργος instead. Exactly as at line 592b22, Gaza includes both readings in his translation: “καὶ σχοινίκλος καὶ κίγκλος καὶ ὁ τρύγγας· οὗτος δὲ μέγιστος τῶν ἐλαπτόνων τούτων·

¹⁰ In Vorobyev 2015, it was missed out by oversight, as well as *albicula* that will be discussed below; only the transliterations *pigargus* and *pygargus* were registered then. — On the double diminutives in *-cillus*, *-cillum* (formed from diminutives in *-culus*, *-culum*), see e.g. Glare 2012: 344, s.v. *-cillum* and *-cillus*: *corcillum*, *oscillum*, *caesticillus*, *penicillus*.

ἔστι γὰρ οἷον κίχλη. Πάντες δ' οὔτοι τὸ οὐραῖον κινουῦσιν" (Aristotle 2002: 345); "ad haec *iunco*, *cinclus*, *albicula*, *tringa*, quae inter minora haec maiuscula est, turdo enim aequiparat. Omnibus his cauda motitat" (Aristotle 1476: f. 1 [9]r–v; ms. Vat. lat. 2094: f. 118r, ll. 3–4).

Apart from providing a perfect *comparandum* for the case of contamination at line 592b22, line 593b5 offers a new word, *albicula*, not attested elsewhere in Gaza's translation. As mentioned above at n. 5, in the other two passages where πύγαργος occurs, 563b6 and 618b19, Gaza renders it as *pygargus/pigargus* and, at 618b19, adds his Latin variant, *albicilla*. It seems that at line 593b5 πύγαργος is rendered as *albicula* on purpose, for Gaza might have wanted to distinguish between the πύγαργος that is mentioned here among small birds with frequently moving tail (one of the wagtails?) and the other πύγαργος which is explicitly described as a kind of eagle at 563b6 and 618b19. The fact that *albicula* is a rendering of πύγαργος makes clear that, apart from *-cill-*, Gaza considered *-cul-* as another root meaning 'rump, bird's tail', apparently from *cūlus* 'the posteriors, fundament' (therefore, we should pronounce *albicūla*, not *albiciūla*).

Now, the word *albicula* helps interpreting the origin of the above mentioned *rubecula*, a better known neologism of Gaza's coinage, present in today's scientific name of the robin-redbreast, *Erithacus rubecula* (Linnaeus, 1758)¹¹.

The Greek bird name ἐρίθακος is attested three times in Arist. *Hist. an.* (592b22, extensively discussed above, 632b28, and 632b29), as well as in other ancient sources. Sundevall considers it a composition of ἐρυθρός 'red' with θᾶκος 'seat, chair', interpreting the latter as 'rump, buttocks' (Sundevall 1863: 110–111), thus implying that the denotatum should be a bird with reddish tail- or rump-feathers (as in the vernacular names of the common redstart: English *redstart*, German *Rotsteiss* or *Rotschwanz*, Italian *codirosso*, Russian *зоруховосмка*, etc.). Indeed, he suggests identification with the common redstart in its summer feathering.

D'Arcy W. Thompson criticizes Sundevall's etymology as far-fetched, thus refuting the requirement for the species denoted by the Greek word to have a reddish rump or tail¹². Furthermore,

¹¹ Here and in the following, the references to the sources of taxa are provided in round brackets, with a comma before the year, whereas conventional bibliographical references are typed without the comma.

¹² A strong argument against Sundevall's etymology is the existence of the bird names ἐριθεύς and ἐρίθυλος, perhaps variants of the word ἐρίθακος

Thompson argues for the identification of ἐρίθακος with the robin-redbreast, for the latter corresponds better to Aristotle's description of the time of the year when the bird called ἐρίθακος can be seen (Thompson 1895: 57). Indeed, no etymological dictionary of Ancient Greek mentions Sundevall's derivation. Thus, Hjalmar Frisk includes in his entry ἐρίθακος also the term ἐριθάκη 'bee-bread' and considers both words, even though with reserve, derived from ἔριθος 'day-labourer, hired servant' (Frisk 1960–1972, vol. 1: 558, s.v. ἐρίθακος and ἔριθος). Chantraine repeats the same hypothesis in his dictionary but wonders what reasons might have led to such derivations (Chantraine 1999: 371, s.v. ἐρίθακος and ἔριθος). Beekes supposes pre-Greek substrate origin for ἐρίθακος, with a question mark though (Beekes 2010: 458).

In any case, Gaza translates ἐρίθακος with the Latin *rubecula*, apparently of his coinage¹³. Two interpretations of this word are possible. The first explains it as a diminutive, following the pattern of *vulpis* > *vulpecula*, or else *niger* > *nigriculus* or *pinguis* > *pinguiculus*¹⁴. The second interpretation, from *rubeus* 'red' and *cūlus* 'the posteriors, fundament', is analogical to the aforementioned *albicula*, for which this derivation is corroborated by the existence of the variant *albicilla*, as well as *ruticilla* (see above). If the latter explanation of Gaza's neologism *rubecula* is correct, it means that he understood the etymology of ἐρίθακος exactly as Sundevall did some four centuries later (and both were wrong, according to modern etymologists, see above). Indeed, even though rare, parallel compounds are attested, namely *sesquēcūlus*,

(Thompson 1895: 57). W. Geoffrey Arnott, in his 2007 encyclopedia *Birds in the Ancient World from A to Z*, conceived as an updated version of Thompson's *Glossary of Greek Birds*, does not discuss the etymology of these words (Arnott 2007: 72–73). — Albert-Gaston Camus, who edited the *Hist. an.* in 1783 with a French translation and a commentary, suggested derivation from ἔρις 'quarrel' alluding at the bird's propensity to 'quarrelling': "On pretend même que le nom grec lui (sc. au rouge-gorge) convient très bien, parce qu'il est fort querelleur", and in the footnote: "Le mot ἐρίθακος peut être derivé de ἔρις, qui signifie querelle, débat" (Aristotle 1783, vol. 2: 734). This suggestion, as far as I know, was not discussed by later authors, but it appears hardly plausible, for the second part of the word remains without explanation.

¹³ Yet, it is not excluded that Gaza could have encountered it in a certain manuscript glossary, since similar words, *rubiculus/rubicula*, are attested in medieval sources (Du Cange 1887: s.v.).

¹⁴ Theoretically, a better variant would have been probably *rubeus* > *rubeola*, like *aureus* > *aureola*, or *ruber* > *rubella*, like *pulcher* > *pulchella*, cf. Leumann 1977: 306–307.

obstipeculus, and *hirsuticulus*¹⁵. Gaza may have used one of those as the model for his derivation.

An argument against the interpretation of Gaza's *rubecula* as 'red-rump' might be provided by the following passage, the only one where the ἐρίθακος is described. At 632b27–30 Aristotle says that ἐρίθακος is the winter form (i.e. winter feathering) of the φοινίκουρος. Gaza's translation has an addition that, apparently, has never been taken into consideration:

Μεταβάλλουσι δὲ καὶ οἱ ἐρίθακοι καὶ οἱ καλούμενοι φοινίκουροι ἐξ ἀλλήλων· ἔστι δ' ὁ μὲν ἐρίθακος χειμερινόν, οἱ δὲ φοινίκουροι θερινοί, διαφέρουσι δ' ἀλλήλων οὐθὲν ὡς εἰπεῖν ἀλλ' ἢ τῇ χροᾷ μόνον (Aristotle 2002: 469).

Rubeculae et quae *ruticillae* appellantur invicem transeunt. Estque *rubecula* hiberni temporis, *ruticilla* aestivi. Nec alio fere inter se differunt, nisi pectoris colore et caudae (Aristotle 1476: f. o [9]v–[10]r; Vat. lat. 2094: f. 158v, ll. 3–6).

The addition of "pectoris et caudae" is, surely, one of the interpolations characteristic of Gaza's translation. Now, one might argue that, by this interpolation, Gaza meant that Aristotle's φοινίκουρος had reddish tail (which was evident from the form of the word) while ἐρίθακος had reddish breast. Still, another

¹⁵ As for *sesquiculus*, it is attested, as a further cognomen of Gaius Iulius Caesar Strabo Vopiscus, in Marius Victorinus' *Ars grammatica* 4, 3 (a thorough analysis of this word, with its variant *sesquiculus*, is provided in Dahlmann 1973: 19–22). *Hirsuticulus* is a translation of δασύπρωκτος and is transmitted in manuscripts as *hirsiculus*, *hirsuticulus* being an emendation; other emendations that have been proposed are *hirticulus* and *hystriculus*, a diminutive of *hystrix* 'porcupine'. For *obstipeculus*, a variant reading *obstipecollus* is attested (for *hirsuticulus* and *obstipeculus*, attested only in glossaries, see Bader 1962: 149). In any case, if Gaza was acquainted with at least one of these words in *-culus*, it should have been enough for him to deem their derivation pattern productive. — The explanation of *rubecula*, proposed by James A. Jobling, as a modification of *rubecola* that, in turn, is based on *rubus* 'bramblebush' and *-cola* 'dweller', is apparently not supported by any medieval or early modern text. Furthermore, Jobling does not refer to Gaza or any other source, just noting that it is a Medieval Latin word (Jobling 2010: 339). The spelling *rubecola* that, indeed, appears in some eighteenth- and nineteenth-century sources must be, on the contrary, a late distortion of *rubecula* (like, on the contrary, Gaza's *hiaticola*, from *hiatus* and *colere*, standing for χαράδριος at 615a1, was misinterpreted as diminutive and became *Charadrius hiaticula* in the modern bird nomenclature). Moreover, Gaza did coin a neologism from *rubus* 'bramble', but it is a completely different bird name: He translated the bird name βατίς (< βάτος 'bramble') as *rubetra* (attested just once, Arist. *Hist. an.* 592b17, not to be confused with βατίς 'skate, ray'), registered in Jobling 2010: 339, too.

interpretation is possible. Gaza could have imagined two Greek names, so to say ‘red-tail’ and ‘ruby-rump’, standing for two birds that both had reddish feathers but, in their winter and summer plumage, were still different in the hue of their breast and tail feathers. As far as I can judge, the above arguments for the interpretation of *rubecula* as a compound with *cūlus* are stronger than the counterargument provided by the passage at lines 632b27–30. Indeed, the function of Gaza’s interpolations was often rhetorically decorative rather than clarifying (cf. examples in Perfetti 1995: 274–280). In this case, the addition of “pectoris and caudae”, absent in the Greek original, may be a mere *amplificatio*.

Since the only source for the allegedly existing **-cilla* is Varro’s explanation of *motacilla*, Gaza was prudent enough to avoid applying it while naming other creatures than birds, even if the root ‘tail’ could be surmised in the Greek word. Thus, he rendered μελάνουρος (a fish, 591a15) as *oculata*¹⁶, ἵππουρος (a fish, 543a22–23, 599b3) as *equiselis*¹⁷, πάγουρος (a crustacean, 525b5) as *pagurus*¹⁸, αἴλουρος (‘cat’, 540a10, 580a23, 612b15) as *felis*, and λόφουρος (‘pack-animal’, 491a1, 493a31, 495a4, 501a6) as *iumentum*¹⁹.

No other animal names derived from **-cilla* or *cūlus* have been detected in Gaza’s translation.

The word *verticillus*, or *verticilla*, that Gaza uses for rendering the Greek insect name σφονδύλη (542a10, 604b19, 619b22) is attested in classical sources (e.g. Plin. *HN* 37, 37, 2) and is a calque, viz. σφονδύλη < σφόνδυλος ‘the whorl of a spindle’, *verticillus* ‘the whorl of a spindle’. Gaza was the first though to apply this Latin word to an animal.

The following animal names in Gaza’s text contain the component *-cul-*:

1) with the *-c* as a part of the root and the diminutive suffix *-ul-*: *lumbriculus* (< *lumbricus* ‘worm’), *falcula* (< *falx* ‘sickle’, a calque

¹⁶ The reason of this identification with the word attested in Pliny is still to be investigated.

¹⁷ On Gaza’s use of this word, attested as a variant reading in Plin. *HN* 18, 259, 6–9, I am currently preparing a separate study.

¹⁸ This transliteration is present in Pliny (in many other cases, Gaza substituted the Greek-sounding transliterations by neologisms, even in cases when they are present in Pliny and other classical Latin authors, as he did in cases of φοινίκουρος and ἵππουρος).

¹⁹ The words αἴλουρος and λόφουρος could be hardly defined as rare and were, therefore, easily rendered with well-known Latin words.

of δρεπανίς < δρεπάνη 'sickle', a bird, 487b27), *halecula* (< (h)alec, a fish, 569a18, for μαινίδιον < μαινίς, the latter regularly rendered by Gaza as *alec*), *graculus* (a fish, 543a31, named after the bird *graculus* as a calque of the Greek fish name κορακῖνος < κόραξ; for the etymology of *graculus*, see De Vaan 2007: 268; Ernout Meillet 2001: 279);

2) with the diminutive suffix *-cul-*: *pectunculus* (cf. *pecten* 'comb; scallop'), *pediculus* (< *pedis* 'louse'), *vulpecula* (ἀλώπηξ, a fish, 565b1, 566a31, and a bat, 490a7), *canicula* (σκύλιον, a fish, 565a22, 565a26, 565b3, 566a19), *fidicula* (κίθαρος, a fish, 508b17), *musculus* (μυστόκτητος, a fish, 519a23; Gaza identified it with Pliny's fish name *musculus*: *HN* 9, 186, 2; 11, 165, 6), *bucula* (< *bos*; for βοΐδιον, 522b14)²⁰, *tinnunculus* (a diminutive, from verb *tinnio*; attested in classical sources; used by Gaza for κεγχρηῖς/κεγχρίς, 509a6, 558b28, 594a2), *tristunculus* (in Plin. *HN* 10, 109, 2, a corrupted reading of the previous, used by Gaza also for κεγχρηῖς/κεγχρίς, 559a26);

3) other: *cuniculus* 'rabbit' (well attested in classical sources, of unclear etymology, perhaps Iberian, Ernout Meillet 2001: 157).

All these word, including those coined by Gaza, clearly could not have been derived from *cūlus*. Thus, apparently only Greek bird names with a component meaning 'rump' or 'tail' in their structure were rendered by Gaza with neologisms derived from **-cilla* or *cūlus*.

2. The afterlife of *rubecula*, *rubicilla*, *ruticilla*, *albicilla*, and *albicula*

2.1. *Rubecula*

In his *Cornu copiae*, conceived as a commentary to Martial but in fact a massive encyclopedia, or dictionary, one of the important sources of first Renaissance lexicographers (cf. Abbamonte 1998; Considine 2008: 30), Niccolò Perotti identified Aristotle's ἐρίθακος with the robin-redbreast: "Avis est, quam vulgo *pectus rubeum* vocant, ἀπὸ τοῦ ἐρυθραίνομαι, hoc est a rubescendo ἐρύθακος dicitur" (Perotti 1489: f. 103v)²¹. The vernacular name *pectus*

²⁰ Gaza spells *buccula*, but his use of geminates is generally inconsistent.

²¹ "There is a bird that is called in the vernacular *redbreast*; it is called ἐρύθακος, from ἐρυθραίνομαι, i.e. from *being red*". Before, Perotti explains that φοινίκουρος is the summer name of ἐρίθακος: "Idem [sc. the change of name with the change of season] erythacus [sic] facit. Hieme enim erythacus est, phenicurus [sic] aestate. Avis est quam vulgo...".

rubeum is clearly a reference to the Italian *pettirosso* ‘robin-redbreast’. Perotti’s identification seems absolutely deliberate, or perhaps stimulated by Gaza’s addition of *pectore* in Arist. *Hist. an.* 632b30, cited above. In any case, Perotti’s definition of ἐρίθακος as ‘robin-redbreast’ was adopted in one of the most popular Latin dictionaries of the sixteenth-century, reprinted many times (cf. Considine 2008: 29), namely that of Ambrogio Calepino (Calepino 1502: f. f[7]v, s. v. *erythacus*).

In 1544, the ornithologist William Turner, who was the first to attempt a systematic identification of ancient bird names with modern vernacular ones, adopted Perotti’s assumption in his *Avium praecipuarum, quarum apud Plinium et Aristotelem mentio est, brevis et succincta historia*: “Ερίθακος, ἢ ἐριθέα, *rubecula*, Anglice *a robin redbreast*, Germanice *eyn roßbrust* oder *eyn roßkelchen*” (Turner 1544: f. H [8]r)²².

Turner’s decision was adopted in the ornithological volume of Conrad Gessner’s milestone *Historia animalium*²³ and eventually became the standard Latin denomination of the robin-redbreast. Therefore, in 1758 tenth edition of Linné’s *Systema naturae*, the edition underlying the modern binary nomenclature of animals, the word *rubecula* was adopted for robin-redbreast, placed by Linné in the genus *Motacilla*, namely *Motacilla rubecula* (Linnaeus, 1758). Later on, in the appendix to the first volume of his *Leçons d’anatomie comparée*, George Cuvier suggested a new classification of the animals. There, he reduced the volume of the genus *Motacilla*, introducing new genera for the birds that had been considered in the genus *Motacilla* before. Thus, he introduced a new genus, *Erithacus*, which included the species *Erithacus rubecula*. The latter binary name is still valid in today’s scientific nomenclature.

²² On Turner, see Harrison 1954; Stresemann 1975: 13–16; Bäumer 1991: 333–335, as well as A. H. Evans’ introduction in Turner 1903. Turner’s treatise was the first reference book in ornithology. Gilbertus (Gybertus) Longolius’ *Dialogus de avibus et earum nominibus Graecis, Latinis et Germanicis* was published in the same year 1544, posthumously, by Turner, who was the author’s friend (Longolius 1544). Longolius’ book, apart from being written in the form of a dialogue, is generally less systematic, discusses less bird names, and its impact on the natural science can be hardly compared with that of Turner’s book (cf. Stresemann 1975: 14; Bäumer 1991: 333).

²³ On Gessner’s encyclopedic work, see e.g. Riedl-Dorn 1989; Friedrich 1995; Enenkel 2007. For the ornithological volume, see especially Springer, Kinzelbach 2009.

2. 2. *Rubicilla*

William Turner's book contains a chapter entitled *De rubicilla*, starting with the following list of synonyms: “πυρρούλας, *rubicilla*, Angli(ce) a *bulfinche*, Germa(nice) eyn *blødtfinck*”. Indeed, Turner understood Gaza's *rubicilla* as the rendering of πυρρούλας, the reading he knew from the editions of the Greek text. Apparently he considered both the Greek and the Latin words diminutives and deliberately, just on the basis of the color underlying their etymology, identified them with the bullfinch: “Ego, nominis etymologiam secutus, *rubicillam* Anglorum *bulfincam* et Germanorum *bloudvincam* esse conjicio” (Turner 1544: f. I 1v–2r)²⁴. Turner's identification was taken over by Gessner in the respective chapter, entitled *De rubicilla sive Pyrrhula* (Gessner 1555: 701–702).

Indeed, thanks to Turner, the transliteration of πυρρούλας, *Pyrrhula*, is now the valid name of the genus bullfinches. The word *rubicilla*, however, appears in modern nomenclature, since at least 1775, as the specific epithet in the name of the great rosefinch, *Carpodacus rubicilla* (Güldenstädt, 1775), a passerine spread in the Caucasus, as well as in certain regions Asia²⁵, unknown in Western Europe. When did the word *rubicilla* change its meaning? Its story is similar to that of the word *silvia* which was understood as ‘robin-redbreast’ since Turner and reinterpreted in the eighteenth century as ‘warbler’ (on it, see Vorobyev 2018: 254–258).

After the establishment of the Linnaean system, the bullfinch was known as *Loxia pyrrhula* (Linné 1758: 171–172; cf. Linné 1766, vol. 1: 300), so the word *rubicilla* remained its void synonym, without any use in the taxonomy. That is why, similarly to how the word *silvia* was recycled by Jacob Theodor Klein (Vorobyev 2018: 257), *rubicilla* was recycled by the Riga-born naturalist Johann Anton Güldenstädt when, after his 1768–1775 journey to the Caucasus, he published the first scientific description of the great rosefinch. He defined it as a new species in Linné's genus *Loxia*²⁶ and introduced for it the name *Loxia rubicilla*. He could do so, for the word *rubicilla*, at that time, was not assigned any denotatum in the nomenclature. In the description of this species, Güldenstädt

²⁴ “As for me, I guess, following the etymology of the word, that *rubicilla* is the *bullfinch* of the English and the *Blutfink* of the Germans”.

²⁵ For the range map, see Clement 2020.

²⁶ He used the twelfth edition of Linné's *Systema naturae* (Linné 1766–1768).

mentioned the bullfinch under the name *pyrrhula*, when he remarked that the voice of the great rosefinch (*Loxia rubicilla*) was similar to that of the bullfinch (*pyrrhula*) (Güldenstädt 1775: 463–465).

Later on, exactly as it happened with Linné's genus *Motacilla*, described above, Linné's genus *Loxia* was split. The genus *Pyrrhula* was separated from it by Mathurin-Jacques Brisson (Brisson 1760: 308) and *Carpodacus* by Johann Jakob von Kaup (Kaup 1829: 161)²⁷, while only the crossbills remained in the genus *Loxia*²⁸.

2. 3. *Ruticilla*

The fortune of the word *ruticilla* was similar. Apparently, no modern scholar has ever doubted that Aristotle understood a common redstart under φοινίκουρος (cf. Sundevall 1863: 111; Thompson 1895: 182).

William Turner, as we said, accepted Perotti's deliberate identification of ἐρίθακος with robin-redbreast. Therefore, analyzing the passage Arist. *Hist. an.* 632b27–30, quoted in the section 1.3 above, and knowing from his own field observations that robin-redbreast did not obtain reddish tail-feathers in summer, Turner stated that φοινίκουρος could not be the name of the ἐρίθακος in summer garment. Instead, he introduced to the ornithological literature the identification of φοινίκουρος with the common redstart: “Φοινικουρός (sic), et, ut alter textus habet, φοινικούργος

²⁷ Kaup explains there how he coined that name: “Von καρπός, Frucht, und δάκνω, beißen”.

²⁸ This actually corresponds to the original meaning of the name *Loxia*, a word coined by Gessner for denoting the crossbill, since he could not find any classical Greek or Latin name for it. Indeed, Gessner begins the chapter entitled *De Loxia* as follows “Hanc avem lingua Germanica *Krützvogel*, id est *cruciatam*, vel *Krummschnabel*, id est *curvirostram* appellat, Illyrica *krziwonoska*, id est *nasicurvam*, a rostra figura utraque. Sola enim haec avium summas rostri partes ac mucrones invicem transponit ac decussat, **quare nos loxian ab obliquitate nominavimus**” (Gessner 1555: 568). The etymology of Gessner's neologism, viz. from the Greek λοξός ‘slanting, crosswise, oblique’, is evident; yet, nobody in the modern literature, as far as I can judge, has acknowledged Gessner's authorship of this name (e.g. Springer and Kinzelbach erroneously explain it as an ancient name: “Der antike Name *loxia* (lat.) ist seit Linnaeus (1758) der gültige Gattungsname der Kreuzschnäbel” (Springer, Kinzelbach 2009: 372); Jobling provides the Greek etymology but, again, does not refer to Gessner (Jobling 2010: 231; Jobling 2020, s.v. *Loxia* and *loxia*). — On today's volume and vernacular names of the genera *Carpodacus*, *Pyrrhula*, and *Loxia*, see Boehme, Flint 1994: 436, 433, 435; Collar, Newton, Bonan 2020.

(sic), Plinio *phoenicurus*, Gazae *ruticilla*, Anglice *a rede tale*, Germanice *eyn roß stertz*” (Turner 1544: f. H [8]r)²⁹. This identification was easy, for the name of the common redstart in the European vernaculars was similar: ‘redstart’, ‘redtail’, ‘Rot-schwanz’, ‘codirosso’ etc. (cf. Gessner 1555: 699).

In the concurrence between *phoenicurus* and *ruticilla*, considered synonyms since Turner, the Latin one seemed winning. Conrad Gessner included both names in the title of the respective chapter in his *Historia animalium*, but *ruticilla* was first (*De ruticilla seu phoenicuro*), moreover the large running titles included only *De ruticilla* (Gessner 1555: 699–701). This was reflected in the major seventeenth-century reference books in zoology, too. Namely, Francis Willoughby preferred the variant *ruticilla* and entitled the respective chapter “*Ruticilla*. The Redstart. Φοινίκουρος Graecis” (Willoughby 1676: 159); John Ray’s posthumous *Synopsis methodica avium et piscium* also speaks of the redstart as of *ruticilla* (Ray 1713: 78). Still, nowadays, the common redstart is known under the scientific name *Phoenicurus phoenicurus* (Linnaeus, 1758). How did it happen and what was the eventual fortune of the word *ruticilla*?

In North America, a bird was observed that seemed similar to the common redstart to Mark Catesby, who, in his bilingual English-French *Natural history of Carolina, Florida and the Bahama Islands*, denoted that bird as *Ruticilla Americana* (also, *the redstart* in English and, in French, *Le rossignol de muraille de l’Amérique*³⁰). Catesby’s description is entitled in Latin, *Ruticilla Americana*, and begins as follows: “This bird is about the size of, or rather less than, our redstart” (Catesby 1729–1732: 67). George Edwards, in his 1743 *Natural history of uncommon birds*, approves of Catesby’s denomination: “He calls it the redstart, whose example I have taken, as I think the name very proper”. Edwards’ chapter is, indeed, entitled *The small American redstart* (Edwards 1743: 80). Now, Linné, in the 1758 edition of his *Systema naturae*, names the

²⁹ In three manuscripts of the *Hist. an.*, according to the apparatus in David Balme’s 2002 edition, the word appears in the form φοινικοῦργοι instead of φοινίκουροι, both at 632b28 and 632b29 (cf. n. 6 above). The readings in Pliny, in Hesychius, and in the *Geoponica* are unambiguous. Still, in the Aldine *princeps* of the *Hist. an.*, the rearing in -οῦργος was adopted and persisted apparently until Camus’ edition (Aristotle 1783, vol. 1: 638 and 756) who reads -ορπος.

³⁰ *Le rossignol de muraille* is one of the French denominations of the common redstart.

American bird described by Catesby and Edwards *Motacilla ruticilla*, apparently based on Catesby's naming (Linné 1758: 186). As for the Old-World redstart, i. e. common redstart, Linné calls it *Motacilla phoenicurus*, following not the examples of Willughby and Ray, who call it *ruticilla*, but that of a lesser-known naturalist Johann Leonhard Frisch who describes four Old-World kinds of the redstart, calling them all *phoenicurus* (Frisch 1734–1739: f. 20r). Thus, Linné decided to leave the name *ruticilla* to the American redstart that already had been registered under that Latin name by Catesby. As for the common redstart, Linné assigned to it the remaining name *phoenicurus*.

Therefore, it was Linné's decision to designate the common redstart with the Greek name and the American redstart with the Latin one. The distribution of species between genera, as it also happened in case of *Motacilla* and *Loxia*, changed due to the development of systematic, but the specific epithets remained the same. Indeed, for the common redstart, the currently valid name is *Phoenicurus phoenicurus*, for the American redstart it is *Setophaga ruticilla*. Both scientific names bear the reference "Linnaeus, 1758" in brackets.

2. 4. *Albicilla* and *albicula*

As for *albicilla*, in the chapter *De aquila*, Turner quotes Gaza's translation of Arist. *Hist. an.* 618b9, and adds a comment in which, using the name *pygargus*, he blames certain "Germanorum literatores" who identified *pygargus* with German *Trappe*. I was not able to identify the German author Turner criticizes but, what is important, Turner is sure that the German *Trappe* 'bustard' should correspond to Aristotle's τέτριξ, while for the *pygargus* he ventures another identification: "*Pygargus* Anglorum lingua, nisi fallar, *erne* vocatur", and provides in margin the English gloss "an erne" (Turner 1544: f. B [6]r). Since no argumentation is provided, we must conclude that Turner's identification was based on the etymology of the Greek word and the white tail of the bird he knew as *erne*, i.e. white-tailed eagle, or sea eagle. Gessner takes over Turner's identification, also cites Gaza's variant *albicilla* but follows Turner in using *pygargus* as the main denomination (the respective chapter is entitled *De pygargo*, the same is the text of the

running title, Gessner 1555: 199)³¹. Modern nomenclature follows Turner's identification, namely the word *albicilla* denotes the white-tailed eagle (sea-eagle), not the bustard: *Haliaeetus albicilla* (Linnaeus, 1758).

The word *pygargus*, yet, denotes a smaller bird of prey, a harrier: *Circus pygargus* (Linnaeus, 1758), today known in English as Montagu's harrier. The reason of this denomination is the alternative identification of Aristotle's πύγαργος, suggested in 1555 by the French zoologist Pierre Belon. His *L'histoire de la nature des oiseaux* was printed the same year when the ornithological volume of Gessner's *Historia animalium* appeared. The two works were written independently, as Gessner himself notices in the end of his preface³². What is important for us now is that Gessner made extensive use of Turner's 1544 treatise, while Belon used it irregularly, if at all³³. Thus, nothing prevented Belon from

³¹ For a brief overview of later authors who used this name, see Jobling 2010: 38, who acknowledges Gaza's authorship, which is not the case in numerous other neologisms of Gaza's coinage.

³² "Petri Bellonii Cenomani de avibus librum Lutetiae hoc ipso tempore excudi audio, qui forte iam absolutus est, ad nos quidem nondum pervenit" ("I hear that right now a book on birds by Pierre Belon of Le Mans is being printed in Paris, perhaps it is already finished but it has not yet arrived here", Gessner 1555: f. a [6]r).

³³ Whereas Gessner is always very accurate in providing the sources of the information he cites, Belon is not. Moreover, Gessner and Turner were friends (cf. Harrison 1954: 3; Stresemann 1975: 14) and Gessner willingly acknowledges this or that apt idea of the English naturalist. Belon, on the contrary, never names Turner's treatise explicitly. Once, he mentions Turner merely as the source of a taxidermic specimen of a canary ("le serin") that he, Belon, was once shown by a certain Flemish Antonius Martinellus in Padua: "Mais M. Antoine Martinellus flamand nous en montra un sec et salé à Padoue avant notre départ, disant qu'un sien ami M. Turnerus médecin anglais le lui avait envoyé" (Belon 1555: 355; orthography modernized). This passage could mean that Belon did not know Turner's ornithological book at all; still, Turner's output seems to be mentioned, apparently just once, concerning a species of the heron: "Il est assez commun par nos rivages, ayant témoins modernes qui ont écrit qu'on le voit aussi en Angleterre. De cette diligence ne voulons frustrer le devoir dû à monsieur Tournerus savant médecin" (Belon 1555: 191; cf. Turner 1544: f. C [1]v). Once more, Belon speaks of "certain modern authors", while probably criticizing Turner: "L'on trouve *quelques modernes* qui ont voulu dire qu'il y eût plusieurs espèces de cet oiseau et, en amenant deux ou trois espèces, les ont tous nommé *tyranni*. Mais l'on peut prouver <...> qu'il en est autrement" (Belon 1555: 345; it was Philippe Glardon, in Belon 1997: 467, who identified Turner 1544: f. I 5v as the source cited in this passage). The character of Belon's use of Turner's book should be

identifying Aristotle's πύγαργος with a white-rumped bird of prey different from the sea eagle, namely with *Jean-le-Blanc*, or *oiseau Saint-Martin*. Today these two French names designate different species, short-toed snake eagle (*Circaëtus gallicus*) and hen harrier (*Circus cyaneus*), but for Belon they stood for one. Belon's bird book was of no less authority than Gessner's. Indeed, Francis Willoughby, in his *Ornithologia*, published in 1676, posthumously, by John Ray, identifies Belon's *pygargus* with the hen harrier (Willoughby uses a now outdated form *henharrow*). It is no wonder that John Ray himself, in his 1713 *Synopsis methodica avium et piscium*, which was an important ornithological source for Linné, used the word *pygargus* twice, namely once as a synonym of *albicilla*, meaning the sea eagle (Ray 1713: 7, in the section *Aquilae*), and once as a denomination of a white-rumped harrier, now known as Montagu's harrier (Ray 1713: 17, in the section *Accipitres*)³⁴.

As for *albicula*, both the reason of its appearance in Gaza's translation and its denotatum remained obscure, so it enjoyed less attention than *albicilla* in the early modern time. Turner does not mention it. Gessner is puzzled why Gaza mentions *albicula*: "Theodorus Gaza in Historia animalium ex Aristotele translata lib(ro) 8 cap(ite) 3 *albiculam* numerat inter eas aves quae circa lacus

clarified but, apparently Belon did use it occasionally. Still, he does not mention Turner's identification of πυρρούλας with the bullfinch; for Belon, the bullfinch is Aristotle's συκαλῖς or μελαγκόρυφος, while πυρρούλας stands for 'robin-redbreast' and is a synonym of ἐρίθακος, whereas Turner, in contrast, rejects the identification of μελαγκόρυφος with the bullfinch, suggesting the black-cap instead (Belon 1555: 359; 348; Turner 1544: f. C 3v–4r; I 2r). As for ἐρίθακος and φοινίκουρος (Belon 1555: 348–349), the identifications proposed by Belon coincide with those of Turner, but it should not mean that Belon's choice was based on that of Turner. Indeed, the source of the identification of ἐρίθακος with the robin-redbreast, as shown above, was Niccolò Perotti's *Cornu copiae*, adopted in Calepino's popular dictionary. As for the identification of φοινίκουρος with the common redstart, the latter is, apparently, the most common passerine bird with a reddish tail in Europe, so it is no wonder that Belon's identification coincides with that of Turner. — On Belon's book, see Bäumer 1991: 335–344; Philippe Glargon's introduction in Belon 1997. For a comparison of Turner's, Belon's, and Gessner's methods in their ornithological reference books, see Stresemann 1975: 13–21; Bäumer 1991: 344–345.

³⁴ The distinction between the hen harrier, *Circus cyaneus* (Linnaeus, 1758), and Montagu's harrier, *Circus pygargus* (Linnaeus, 1766), was introduced later.

et fluvios victum quaerunt, ubi in Graecis nostris codicibus excusis nihil quod huic vocabulo respondeat invenio” (Gessner 1555: 208)³⁵.

Agostino Nifo, in his posthumously issued 1546 commentary to Aristotle's *Historia animalium*, suggested that Gaza's Greek *Vorlage* could have read λευκός here, omitted in the printed editions; Nifo thought it could stand for λευκός (sc. ἐρωδιός), white heron (Aristotle 1546: 230). Still, the white heron is mentioned shortly before in the same list of birds, wherefore Gessner 1555: 208 rejected Nifo's hypothesis³⁶. As shown above, Gaza's *albicula* in fact stood for πύγαργος, the alternative reading of ὁ τρύγγας, but this *varia lectio* appeared in print in 1811 for the first time³⁷. These textual problems and Gessner's perplexity about the origin of Gaza's *albicula* led to its failure to settle in the nomenclature. Unlike the similar cases of *silvia*, *rubicilla*, *ruticilla*, and *albicilla*, the word *albicula* was never used in the binary nomenclature of birds.

Pierre Belon, apparently based on Gaza's bird names *albicilla* and *albicula* and considering them mere diminutives rather than compounds, reused them in his book on fishes. In a chapter entitled *Leuciscus*, Belon identified the fish name λευκίσκος, attested in Hicesius, with several modern vernacular names. Even though in the text he constantly denoted that fish by the transliteration *leuciscus*, he deemed important providing a truly Latin equivalent. Namely, the full chapter title reads: *Leuciscus, hoc est Albicilla seu Albicula* (Belon 1553: 313), cited by Gessner: “De eodem Bellonius, qui *leuciscum* simpliciter hunc pisciculum nominat et Latine inquit *albicillam* vel *albiculam* dici posse” (Gessner 1558: 31). Still, the word *albicula* reached the binary nomenclature neither as a bird, nor as a fish name.

³⁵ “Theodore Gaza, in his translation of Aristotle's *Historia animalium*, book 8, chapter 3, mentions *albicula* among those birds that search for food by lakes and rivers, at which place I can find nothing in our Greek printed books that would correspond to this word”; cf.: “...*albicula* (quod huic nomen in exemplaribus nostris Graecis respondeat nullum est)” (Gessner 1555: 593).

³⁶ Belon, on the contrary, repeated Nifo's suggestion, without naming Nifo as his source though (Belon 1555: 191, 195). Julius Caesar Scaliger was also puzzled why Gaza had added *albicula* (“ascripsit *albiculam* sed in nostro codice deerat”, Aristotle 1619: 891). — On Nifo's commentary, see Perfetti 1996; Perfetti 2000.

³⁷ Johann Gottlob Schneider was apparently the first to discuss this textual problem. In his Greek text, he opted for the reading πύγαργος, adding “καὶ ὁ τρύγγας” in brackets (Aristotle 1811, vol. 1: 357; vol. 2: 354; vol. 3: 596).

3. Conclusions

Theodore Gaza's neologisms *albicilla*, *rubicilla*, and *ruticilla*, rather than diminutives, are derived from a phantom word **-cilla* 'rump, bird-tail'; his neologisms *albicula* and *rubecula* are, most probably, derived from *cūlus* 'the posteriors, fundament' and should be, therefore, pronounced *albicūla* and *rubecūla*, which is relevant for the latter, denoting the robin-redbreast in today's scientific nomenclature (*Erithacus rubecula*).

As the analyzed cases demonstrate, the identifications proposed in the first modern reference book in ornithology, William Turner's *Avium praecipuarum, quarum apud Plinium et Aristotelem mentio est, brevis et succincta historia*, were willingly taken over in Conrad Gessner's authoritative *Historia animalium*, whence, through a chain of intermediary reference books, they influenced the lexical choice of eighteenth-century authors responsible for the elaboration of modern binary nomenclature. The presence of a transliterated Greek word alongside with its Latin translation in the zoological reference books often led to the situation when just one of such synonyms was taken over in the nomenclature, while the second one remained without denotatum. These void names were reused later for designating newly introduced taxa.

References

- Abbamonte 1998: Abbamonte, G. Le ultime ricerche sull'attività lessicografica di Niccolò Perotti. *Roma nel Rinascimento*, 45–58.
- Aristotle 1476: Gaza, T. (transl.). Aristoteles. *De animalibus*. Venice (GW 2350).
- Aristotle 1497: Aldus Manutius (ed.). Aristoteles. *Opera*. Vol. 3. Venice (GW 2334).
- Aristotle 1546: Gaza, T. (transl.), Nifo, A. (comm.). *Expositiones in omnes Aristotelis libros de historia animalium, de partibus animalium et earum causis, ac de generatione animalium*. Venice.
- Aristotle 1619: Scaliger J. C. (ed., transl., comm.). Aristoteles. *Historia de animalibus*. Toulouse.
- Aristotle 1783: Camus, A.-G. (ed., transl., comm.) [*Histoire des animaux d'Aristote*]. Vol. 1. *Histoire des animaux d'Aristote avec la traduction française*. Vol. 2. *Notes sur l'histoire des animaux d'Aristote*. Paris.
- Aristotle 1811: Schneider J. G. (ed., comm., rev.). Scaliger J. C. (transl.). Aristoteles. *De animalibus historiae*. Vols. 1–4. Leipzig.
- Aristotle 1994: Hünemörder C. (ed.). Aristoteles. *De animalibus libri XIX in der Übersetzung des Michael Scotus. Nach der Handschrift Rom, Bibliotheca Apostolica Vaticana, Chigi E VIII 251 (s. XIII), fol. 1ra-108rb, mit Textkorrekturen aus den Handschriften Nürnberg,*

- Stadtbibliothek, Cent. VI 10 und Pisa, Bibliotheca di Santa Caterina, Cod. 11. Buch I–XIV. [Eichstätt–Munich].
- Aristotle 2002: Balme, D. M. (ed.). Aristotle. *Historia animalium*. Vol. 1: Books I–X: Text. Prepared for publication by Gotthelf, A. Cambridge.
- Aristotle 2018: Filius, L. S. (ed.) *The Arabic version of Aristotle's Historia animalium. Book I–X of Kitāb al-Hayawān*. Leiden–Boston.
- Arnott, W. G. 2007: *Birds in the ancient world from A to Z*. London; New York.
- Bader, F. 1962: *La formation des composés nominaux du latin*. Besançon.
- Bäumer, Ä. 1991: *Geschichte der Biologie*. Vol. 2: *Zoologie der Renaissance — Renaissance der Zoologie*. Frankfurt a.M. etc.
- Beekes, R. S. P. 2010: *Etymological dictionary of Greek*. Vols. 1–2. Leiden; Boston.
- Belon, P. 1553: *De aquatilibus*. Paris.
- Belon, P. 1555: *L'histoire de la nature des oyseaux*. Paris.
- Belon, P. 1997: Glardon, Ph. (introd. and comm.). Belon, P. *L'histoire de la nature des oyseaux* (facsimile edition of Belon 1555). Genève.
- Berger, F. 2005: *Die Textgeschichte der Historia Animalium des Aristoteles*. Wiesbaden.
- Beullens, P., Gotthelf, A. 2007: Theodore Gaza's translation of Aristotle's *De animalibus*: content, influence and date. *Greek, Roman and Byzantine studies* 47. 469–513.
- Beullens, P. 2008: Aristotle, his translators, and the formation of ichthyologic nomenclature. In: M. Goyens, P. De Leemans, A. Smets (eds.), *Science translated. Latin and vernacular translations of scientific treatises in Medieval Europe*. Leuven. 105–122.
- Boehme, R. L., Flint, V. E. 1994: *Pyatiiazychnyi slovar' nazvanii zhivotnykh. Ptitsy, Latinskii-russkii-angliiskii-nemetskii-frantsuzskii* [A five-language dictionary of animal names. Birds. Latin, Russian, English, German, French]. Moscow. Бёме, Р. Л., Флинт, В. Е. 1994: *Пятиязычный словарь названий животных. Птицы. Латинский-русский-английский-немецкий-французский*. М.
- Brisson, M.-J. 1760: *Ornithologie, ou méthode contenant la division des oiseaux en ordres, sections, genres, espèces et leurs variétés*. Vol. 3. Paris.
- Calepino, A. 1502: *Dictionarium*. Reggio [Emilia].
- Catesby, M. 1729–1732: *The natural history of Carolina, Florida and the Bahama Islands*. Vol. 1. London.
- Chantraine, P. 1999: *Dictionnaire étymologique de la langue grecque. Histoire des mots*. Paris.
- Clement, P. 2020: Great Rosefinch (*Carpodacus rubicilla*). In: HBW (<https://www.hbw.com/node/61402>, accessed on 05.01.2020)
- Collar, N., Newton, I., Bonan, A. 2020: Finches (*Fringillidae*). In: HBW (<https://www.hbw.com/node/52376>, accessed on 05.01.2020).
- Considine, J. 2008: *Dictionaries in Early Modern Europe. Lexicography and the making of heritage*. Cambridge.
- Dahlmann, H. 1973: Varronianism. In: Temporini, H. (ed.). *Aufstieg und Niedergang der römischen Welt. Geschichte und Kultur Roms im*

- Spiegel der neueren Forschung. I. Von den Anfängen Roms bis zum Ausgang der Republik.* Vol. 3. Berlin. 3–25.
- De Vaan, M. 2008: *Etymological dictionary of Latin and the other Italic languages.* Leiden; Boston.
- Dittmeyer, L. 1902: *Untersuchungen über einige Handschriften und lateinische Übersetzungen der Aristotelischen Tiergeschichte. Programm des Königlichen Neuen Gymnasiums zu Würzburg für das Studienjahr 1901/02.* Würzburg.
- Du Cange, Ch. [et al.] 1883–1887 (¹1678): *Glossarium mediae et infimae latinitatis.* Niort (<http://ducange.enc.sorbonne.fr/>, accessed on 24.11.2019)
- Edwards, G. 1743: *A natural history of uncommon birds and of some other rare and undescribed animals.* Vol. 1. London.
- Enenkel, K. A. E. 2007: Zur Konstruierung der Zoologie als Wissenschaft in der Frühen Neuzeit: Diskursanalyse zweier Großprojekte (Wotton, Gesner). In: Enenkel, K. A. E., Smith, P. J. (eds.). *Early modern zoology. The construction of animals in science, literature and the visual arts.* Leiden; Boston. 15–74.
- Ernout, A., Meillet, A. ⁴2001: *Dictionnaire étymologique de la langue latine. Histoire des mots.* Paris.
- Friedrich, U. 1995: *Naturgeschichte zwischen artes liberales und frühneuzeitlicher Wissenschaft. Conrad Gessners Historia animalium und ihre volkssprachliche Rezeption.* Tübingen.
- Frisch, J. L. 1734–1739: *Vorstellung der Vögel in Teutschland.* Berlin.
- Frisk HJ. *Griechisches etymologisches Wörterbuch.* Vols. 1–3. Heidelberg, 1960–1972.
- Gessner, C. 1555: *Historia animalium.* Vol. 3: *De avium natura.* Zurich.
- Gessner, C. 1558: *Historia animalium.* Vol. 4: *De piscium et aquatilium animantium natura.* Zurich.
- Glare, P. G. W. ²2012: *Oxford Latin dictionary.* Oxford.
- Grimm, J. 1826: *Deutsche Grammatik.* Pt. 2. Göttingen.
- Güldenstädt, J. A. 1775: Sex avium descriptiones. *Novi commentarii Academiae Scientiarum Imperialis Petropolitanae* 19 (1774), published in 1775. Saint Petersburg. 463–475.
- Harrison, Th. P. 1954: William Turner, naturalist and priest. *The University of Texas Studies in English* 33, 1–12.
- HBW 2020: del Hoyo, J. et al. (eds.). *Handbook of the birds of the world alive* (<https://www.hbw.com>, accessed on 02.03.2020).
- Helander, H. 2014: On neologisms in Neo-Latin. In: Ford, P., Bloemendal, J., Fantazzi, Ch. (eds.), *Brill's encyclopaedia of the Neo-Latin world.* 2 vols. Leiden; Boston. Vol. 1, 37–54.
- Jobling, J. A. 2010: *The Helm dictionary of scientific bird names. From Aalge to Zusii.* London.
- Jobling, J. A. 2020: Key to Scientific Names in Ornithology. In: HBW (<https://www.hbw.com/dictionary/key-to-scientific-names-in-ornithology>, accessed on 02.03.2020).
- Kaup von, J. J. 1829: *Skizzirte Entwicklungs-Geschichte und natürliches System der europäischen Thierwelt.* Vol. 1. Darmstadt.
- Leumann, M. 1977: *Lateinische Laut- und Formenlehre.* Munich.

- Liddell, H. G., Scott, R., Jones, H. S. ⁹1940: *A Greek-English lexicon*. Oxford (<https://logeion.uchicago.edu>, accessed on 02.03.2020).
- Linné von, C. ¹⁰1758: *Systema naturae*. Vol. 1. Stockholm.
- Linné von, C. ¹²1766–1768: *Systema naturae*. Vols. 1–3.
- Longolius, G. 1544: *Dialogus de avibus et earum nominibus Graecis, Latinis et Germanicis*. Cologne.
- Monfasani, J. 1999: The Pseudo-Aristotelian *Problemata* and Aristotle's *De Animalibus* in the Renaissance. In: Grafton, A., Siraisi, N. (eds.). *Natural Particulars. Nature and the disciplines in Renaissance Europe*. Cambridge [Mass.]–London. 205–247.
- Niedermann, M. 1897: *Ē und ĭ im Lateinischen. Ein Beitrag zur Geschichte des lateinischen Vocalismus*. Darmstadt (Diss. Basel).
- Perfetti, S. 1995: 'Cultius atque integrius'. Teodoro Gaza, traduttore umanistico del *De partibus animalium*. *Rinascimento* 35. 253–286.
- Perfetti, S. 1996: Metamorfosi di una traduzione: Agostino Nifo revisore dei 'De animalibus' gaziani. Medioevo. *Rivista di storia della filosofia medievale* 22. 259–301.
- Perfetti, S. 2000: *Aristotle's zoology and its Renaissance commentators, 1521–1601*. Leuven.
- Perotti, N. 1489: *Cornu copiae*. Venice (GW M31093).
- Pliny 1857: Bostock, J., Riley, H. T. (transl.). *The Natural history of Pliny*. Vol. 6. London.
- Pliny 1897: von Jan, L., Mayhoff, K. (eds.). C. Plinius Secundus. *Naturalis historia*. Vol. 4. Leipzig.
- Ray, J. 1713: *Synopsis methodica avium et piscium*. London.
- Riedl-Dorn, C. 1989: *Wissenschaft und Fabelwesen. Ein kritischer Versuch über Conrad Gessner und Ulisse Aldrovandi*. Wien; Köln.
- Springer, K. B., Kinzelbach, R. K. 2009: *Das Vogelbuch von Conrad Gessner (1516–1565). Ein Archiv für avifaunistische Daten*. Berlin; Heidelberg.
- Stresemann, E. 1975. *Ornithology. From Aristotle to the present*. Cambridge [Mass.]–London.
- Sundevall, C. J. 1863: *Die Thierarten des Aristoteles von den Klassen der Säugethiere, Vögel, Reptilien und Insekten*. Übersetzung aus dem Schwedischen. Stockholm.
- Thompson, D. W. ¹1895, ²1936: *A glossary of Greek birds*. Oxford.
- Turner, W. 1544: *Avium praecipuarum, quarum apud Plinium et Aristotelem mentio est, brevis et succincta historia*. Cologne.
- Turner, W. 1903: Evans, H. A. (ed., introd., transl.). *Turner on birds. A short and succinct history of the principal birds noticed by Pliny and Aristotle, first published by Doctor William Turner*. Cambridge.
- Vorobyev, G. 2015: [Theodore Gaza's neologisms in his translation of Aristotle's *De animalibus* and their reception in modern zoology]. *Indoeuropeyskoe yazykoznanie i klassicheskaya filologiya [Indo-European linguistics and classical philology]* 19. 158–168.
- Воробьев Г. М. 2015: Неологизмы Феодора Газы из его латинского перевода «De animalibus» Аристотеля в современной зоологической номенклатуре. *Индоевропейское языкознание и классическая филология* 19. 158–168.

- Vorobyev, G. 2018: *Sylvia*: Zur Entstehung des wissenschaftlichen Namens der Grasmücke (Arist. *Hist. an.* 592b22). *Philologia Classica* 13(2). 247–264.
- Vorobyev, G. 2019: Einige Sperlingsvögel und eine Schlange. Noch einmal zu Arist. *Hist. an.* 592b22. *Indoevropeyskoe yazykoznanie i klassicheskaya filologiya* [*Indo-European linguistics and classical philology*] 23. 178–191.
- Walde, A. 1938–1954: Lateinisches etymologisches Wörterbuch. 3. neubearbeitete Auflage von J. B. Hofmann. Vols. 1–2. Heidelberg.
- Willoughby, F. 1676: *Ornithologiae libri tres*. London.