

THE MEANING OF ΧΕΛΙΔΩΝ IN HESIOD

BY

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Abstract

It is argued that Hesiod in line 568 of his *Works and Days* is referring to a star or constellation with the name Χελιδών rather than to an actual swallow, as hitherto assumed. The traditional interpretation is examined and shown to be faulty from two points of view, the philological and the ornithological. The interpretation here offered is then argued for on astronomical, philological, mythological, and iconographical grounds. It is concluded further that the myth of Pandion's daughters, the source of the star's name, was of greater significance in the Archaic period than has been recognized.

INTRODUCTION

The interpretation presented here of Χελιδών as the name of a star, or constellation,¹ is based on lines 564–570 in Hesiod's *Works and Days* and, for the sake of the argument, they are quoted below, with a literal translation:

Εὐτ' ἂν δ' ἐξήκοντα μετὰ τροπὰς ἡλίοιο
 565 χειμέρι' ἐκτελέσει Ζεὺς ἤματα, δὴ ῥα τότε ἄστῆρ
 Ἄρκτουρος προλιπὼν ἱερὸν ῥόον Ὠκεανοῖο
 πρῶτον παμφαίων ἐπιτέλλεται ἀκροκνέφαιος·
 τὸν δὲ μετ' ὀρθογῆ Πανδιονίς ὄρτο Χελιδών
 ἐς φάος ἀνθρώποις, ἕαρος νέον ἴσταμένοιο.
 570 τὴν φθάμενος οἶνας περιταμνέμεν' ὥς γὰρ
 ἄμεινον.²

When Zeus brings to an end sixty wintry days after the solstice, just then the star *Arcturus* leaving the holy stream of Ocean, shining brightly, rises for the first time at twilight; after him the truly grieving daughter of Pandion, *Swallow*,³ rose to the light for mortals, when spring is newly begun; prune the vines before she comes; for it is better so.

These lines have engaged the interest of scholars primarily because of the reference to the acronychal rising of *Arcturus*, promising as it does the means for calculating when the poem was written. Scholars since the Renaissance have attempted to calculate the date of Hesiod from this passage.⁴ *Arcturus* is said here to rise at twilight sixty days after the winter solstice. This would be on the nineteenth of February, counting the days according to our calendar. In practice the computation is extremely complex and will be described briefly below. It is useful to note here that the dates computed for the Archaic period, using reasonable

parameters, place the acronychal rising of *Arcturus* at a time well before what would correspond to the end of our February.

I would like to thank my colleagues in the seminar of the Department of Classical Archaeology and Ancient History, Uppsala University, for many helpful suggestions. I am especially grateful to Professor Tullia Linders, Professor Jan Fredrik Kindstrand, and Docent Marianne Wifstrand Schiebe for saving me from errors in my translations, and to Dr. Göran Henriksson for his help with the astronomical section. They are not to blame if I have not always taken their advice. It is my hope that Dr. Henriksson will publish an account of his methods and the results of his calculations for the sake of other classical scholars dealing with this very difficult material. I would also like to thank my husband, Peter Blomberg, for his support in so many ways.

Abbreviations used other than those in the *American Journal of Archaeology* 95, 1991, 4–16 and the *Oxford Classical Dictionary*:

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|-----------------------|--|
| <i>Scholia vetera</i> | <i>Scholia vetera in Hesiodi Opera et Dies</i> , (Pubblicazioni dell'università cattolica del S. Cuore, N.S. 53), ed. A. Pertusi, Milano 1955. |
| Ungnad | A. Ungnad, 'Babylonische Sternbilder oder der Weg babylonischer Kultur nach Griechenland', <i>Zeitschrift der deutschen morgenländischen Gesellschaft</i> 77, 1923, 81–91. |
| van der Waerden | B.L. van der Waerden, <i>Science awakening II: The birth of astronomy</i> , Leyden 1974. |
| Weidner | E. Weidner, 'Zur Babylonischen Astronomie, 10: Der Schwalbenfisch', <i>Babyloniaca</i> 6, 1912, 147–163. |
| Werner & Schmeidler | H. Werner & F. Schmeidler, <i>Synopsis of the nomenclature of the fixed stars</i> , Stuttgart 1986. |
| West | Hesiod, <i>Works & Days</i> , ed. by M.L. West, Oxford 1978. |

¹ To avoid the tedious repetition of *star* or *constellation*, the word *star* is used for both unless otherwise indicated.

² West's edition, but with the exchange of ὀρθογῆ for ὀρθρογῆ and with a capital X in Χελιδών. The translations are my own.

³ Generally, *Swallow* is written with capital *S* and in italics when the star is meant (but also in some quotations), with capital *S* for the mythological figure, and small *s* for the bird or both.

⁴ West, 299f.

AGAINST THE TRADITIONAL INTERPRETATION AS THE BIRD

Philological arguments: All scholars who have commented on line 568, as far as I have been able to determine, have taken the phrase *Pandion's daughter, Swallow*, as a poetic metaphor for the bird and have understood Hesiod to mean the actual swallow as the herald of spring.⁵ Yet an investigation of the texts produced through the years by the editors of *Works and Days* and also of the commentaries on this line indicates that there is a problem with this interpretation of Χελιδών. It is the doubt which has arisen as to the adjective employed by Hesiod to describe *Swallow* which indicates the difficulty, whether he used ὀρθογότη or ὀρθρογότη (*truly grieving* or *early grieving*, as I would translate these words).⁶ The problem has, it seems, two aspects: one deriving from the first part of the adjective, ὀρθο-/ὀρθρο-, and the other from the second part, γότη.

Considering the first part of the adjective, most editors have chosen ὀρθογότη on the authority of the manuscript tradition and the Proclan scholium.⁷ Some have chosen ὀρθρογότη,⁸ probably on the authority of the non-Proclan *scholia vetera*,⁹ but ultimately because it makes more sense as the description of a bird.

The Proclan scholium (fifth century A.D.) explains the choice of ὀρθογότη as follows:

ὀρθογότη δὲ ἡ χελιδών διατὸν μῦθον, ὡς φασι ν οἱ παλαιοὶ αὐτὴ τὴν λύπην ἄδειν τὴν Φιλομήλαν οὖσαν Ἀττικὴν. Πλάτων δὲ οὐδὲν ζῶον λυπούμενον ἄδειν φησίν, οὐδὲ αὐτὴν τὴν χελιδόνα καὶ τὴν ἀηδόνα καὶ τὸν ἔποπα.¹⁰

the truly grieving swallow because of the myth, as the ancients say that Philomela from Attica sings from very grief. But Plato says that no living being sings when feeling pain, not the swallow itself nor the nightingale nor the hoopoe.

Here, in what is one of our earliest sources, we have the solution to the difficulty. Proclus explains the adjective as describing the mythological figure, which he takes Hesiod to use metaphorically to signify the bird. That the adjective describes the daughter of Pandion is, of course, correct and the appropriateness of ὀρθογότη therefore is independent of whether a bird or a star is meant by Hesiod.¹¹ In lines 598 and 615 of *Works and Days*, Hesiod describes Orion in a similar way when he mentions the star named after him: *strong Orion* (σθένος Ὠρίωνος). Here, as in the case of *Swallow*, it is the mythological figure which is described, not the star.

Surprisingly, in the other scholia, where we have what is perhaps the earliest mention of ὀρθρογότη, we find no reference to the myth, but instead the following explanation, which must refer to the bird:

ἡ ὑπὸ τὸν ὀρθρον θρηνοῦσα¹²

she who wails towards dawn.

The modern translators who chose ὀρθογότη do not translate ὀρθο- with any of its usual meanings of *rightly, uprightly, justly, truly*, etc. They choose instead words like *shrilly, high* and *treble*, being convinced, as the non-Proclan

⁵ For example, West, 301, commentary to line 569.

⁶ The verb γοῶν does not occur in Hesiod other than here in line 568. The possible translations for it in Homer are *to weep, mourn, grieve* or *lament*, but not *to wail* (*Il.* 5.413, 6.373, 14.502, 16.857, 18.315, 21.124, 22.353, 363, 476, 23.106, 24.665; *Od.* 4.721, 800, 8.92, 9.467, 10.209, 567, 12.234, 19.119, 210, 264, 513, 24.190). When Odysseus in the assembly of the Phaeacians hides his face to conceal his tears, he can hardly be considered to wail (*Od.* 8.92-93).

Also Electra's concealed grieving is described with the same verb (Aesch. *Cho.* 449); and Sophocles contrasts the piercing wailing (ὄξυτόνους ῥῥῶς θρηνήσει) of Ajax's mother with the pitiable grieving (οἰκτρᾶς γόου) of the nightingale (*Aj.* 629-631). I am very grateful to Professor Kindstrand for drawing the Sophocles passage to my attention.

⁷ For example, *Hesiodi Opera et Dies*, ed. A. Colonna, Milan 1959, 56; Hesiod, *The Homeric hymns and Homerica*, ed. H.G. Evelyn-White, London 1914, 44; Hésiode, *Théogonie — Les travaux et les jours — Le bouclier*, ed. P. Mazon, Paris 1928, 107; *Hesiodi carmina*, ed. A. Rzach, Leipzig 1913³, 84; Hesiod, *Works and Days*, ed. T.A. Sinclair, Hildesheim 1966, 60f.; Hesiodos, *Erga*, ed. U. v. Wilamowitz-Moellendorff, Berlin 1928, 32. For the Proclan scholium see *Scholia vetera*, 185.

West's admirable account of the manuscript tradition of the *Works and Days* allows us to follow the fluctuations in the choice of these two adjectives. He has collated or classified all the medieval manuscripts down to the end of the fourteenth century, having found that manuscripts later than about 1340 contribute nothing of significance to the readings. The oldest extant manuscripts have ὀρθογότη: Codices Parisinus graecus 2771 (middle-late tenth century), Laurentianus 31.39 (twelfth century), and Messianus Fondo Vecchio 11 (late twelfth century). West assumes it for the lost source excerpted in the *Etymologica Gudianum, Genuinum, Magnum, Symeonis, and Tittmanni*, his source *e* which he considers to be not later than the tenth century. See M.L. West, 'The Medieval manuscripts of the *Works and Days*', *CQ* 24, 1974, 161-185; West, 75-86.

None of the ancient papyri which contains the *Works and Days* have line 568, West, 75-77.

⁸ For example, 'Hesiodou ποιήματα. *Hesiodi carmina*, ed. F.S. Lehrs, Paris 1878, 41; *Hesiodi Theogonia, Opera et Dies, Scutum*, ed. F. Solmsen, Oxford 1983², 74; West, 123.

After the twelfth century both ὀρθογότη and ὀρθρογότη occur in the manuscripts, West, 123, notes to line 568.

⁹ *Scholia vetera*, 185.

¹⁰ *Scholia vetera*, 185. Proclus is referring to Pl. *Phd.* 85a:

οὐδὲν ὀρνέον ἄδει, ὅταν πεινῆ ἢ ῥιγοῖ ἢ τινα ἄλλην λύπην λυπῆται, οὐδὲ αὐτὴ ἢ τε ἀηδών καὶ χελιδών καὶ ὁ ἔποπ, a bird does not sing when it is hungry or cold or feeling any other pain, not the nightingale nor the swallow nor the hoopoe,

where Plato must have the myth of Pandion's daughter and the passage in Hesiod in mind.

¹¹ Hesychius of Alexandria (probably fifth century A.D.) has ὀρθογότη with χελιδών as synonym, *Hesychii Alexandrini lexicon*, ed. Kurt Latte, Copenhagen 1953-1966, vol. 2, 774. The *Suidas*, quoting *Anth. Pal.* 6.247 (infra n. 14), has ὀρθρογότη and the same synonym, *Suidae lexicon (Lexicographi Graeci 1)*, ed. A. Adler, Leipzig 1933, vol. 3, 559.

¹² *Scholia vetera*, 185. On the date of the *scholia vetera* see West, 69.

scholiasts, that it is the voice of the bird which is meant, ignoring, as it seems, the mythological figure.¹³

As for ὀρθρογῶν, Livrea, in a persuasive study, gives the following arguments which, in his opinion, justify the choice of it: (1) the exchange between ὀρθρ- and ὀρθ- is very common in the tradition; (2) ὀρθρος, with its temporal meaning, is in full agreement with the time-giving function of the passage; (3) there are two references to the early calling of swallows in the *Anthologia Palatina* which he considers to be imitations of this line in Hesiod.¹⁴ His arguments are based also on the opinion that it is the voice of the actual bird which is intended. In view of these considerations it may seem surprising that ὀρθρο- does not occur earlier and more often in the manuscripts.

The point brought to light by the Proclan reference to Plato brings us to the consideration of the other difficulty presented by the adjective used to describe *Swallow*, that due to the second part of the adjective, the part derived from the verb γοᾶν.

Generally speaking ancient authors choose other verbs than γοᾶν to describe the sound of the swallow's voice except when they feel constrained by the authority of Hesiod, as the non-Proclan scholiasts for example, or when drawing an analogy to the sorrowing figure of Swallow in the myth, as Agathias does:

ἀλλ' Ἴτυλον κλαίετε κατ' οὔρεα καὶ γοάοιτε
εἰς ἔποπος κραναῆν αὐλιν ἐφεζόμεναι¹⁵

but weep for Itylos in the mountains and *grieve*
sitting near the hoopoe's rocky roost (my italics).

This, to my mind, is quite simply due to the fact that wailing, complaining, or lamenting, the most usual translations of γοᾶν,¹⁶ are not accurate descriptions of the morning call of swallows. Real swallows do not wail or lament, neither at dawn nor at any other time. Although swallows are up and flying about early, their cry cannot be described realistically with any of the meanings of γοᾶν. They twitter (λάλουσι) or sing (ᾄδουσι), to use the greek verbs usually employed by ancient authors, as we saw in the quotations from the Proclan scholium above on p. 50 and from *Anth. Pal.* 6.247.¹⁷ Homer also uses the verb *to sing* when he likens the sound made by Odysseus' bowstring to the swallow's voice:

καλὸν ἄεισε, χελιδόνι εἰκέλη αὐδῆν.¹⁸

it sang beautifully, like the swallow's voice.

Hellquist, it seems, also was troubled by this since in his translation of *Works and Days* he chooses *sings*, despite the Greek.¹⁹

Another consideration, there is no good reason for Hesiod to choose the swallow as the early bird since it is not unique in calling at dawn; it is a feature characteristic of many species that they begin to chirp and twitter when the sun goes up. Curry-Lindahl gives a fine description of the behaviour of birds at the moment of sunrise.²⁰

The root of the problem is the assumption made by everyone except Proclus, as far as has been determined, that

the adjective refers to the bird; they fail to mention Pandion's daughter in connection with it. Moreover, as we have seen, both ὀρθρογῶν and ὀρθρογῶν, are inappropriate as adjectives describing the swallow as a bird, not only because of the first part of the word but also, and even more so, because of the second part.

Ornithological arguments: Another problem with taking Χελιδών as referring to the bird is the fact that the swallow (in all probability *Hirundo rustica* or chimney swallow²¹) is seen only rarely in Greece before the end of February, the time in Hesiod's day of the acronychal rising of *Arcturus* (see below). The ring-marking of birds and the recording of their migration habits is a well-organized activity which engages the cooperation of hundreds of professional and amateur ornithologists. Thousands of *Hirundo rustica* have been ringed and considerable numbers of these have been recovered later in different parts of Europe. They over-

¹³ Evelyn-White (*supra* n. 7), 45: *shrilly wailing*; Mazon (*supra* n. 7), 107: *gémissement aigu*; Sinclair (*supra* n. 7), 60, commentary to line 568: *shrill notes*; Hesiod and Theognis (Penguin Classics), tr. D.S. Wender, London 1973, 77: *high-voiced*.

¹⁴ E. Livrea, 'La rondine in Esiodo, *Erga* 568', *RivFil* 95, 1967, 40f. Similar to Livrea's third argument is the explanation of the non-Proclan scholia vetera, the early wailing of swallows at dawn (*supra* p. 50). It should be noted however that the verb in *Anth. Pal.* 6.247 which describes the sound of the swallows is λαλεῖν (to chatter or chirp), not θρηνεῖν or γοᾶν.

Anthologia Graeca, ed. H. Beckby, Munich 1957, vol. 1, 518 & 574:

6.160: Κερκίδα τὰν ὀρθρινὰ χελιδονίδων
ἄμα φωνᾷ μελπομέναν
The pin beater singing early together
with the sound of swallows

6.247: Κερκίδας ὀρθρολάλοισι χελιδόσιν εἰκελοφώνους
the pin beaters with voices like the early
chattering swallows.

For the translation of κερκίς as pin beater see G.M. Crowfoot, 'Of the warp-weighted loom', *BSA* 37, 1936-1937, 44f.

¹⁵ *Anthologia Graeca* (*supra* n. 14), vol. 1, 368 no. 237.

¹⁶ Evelyn-White (*supra* n. 7), 45, *shrilly wailing*; Mazon (*supra* n. 7), 107, *gémissement aigu*. Hesiodos, tr. R. Peppmüller, Halle 1896, 232, *früh klagend*; Hesiod, *Theogony & Works and Days*, tr. M.L. West, Oxford 1988, 54, *laments in the morning twilight*.

¹⁷ *Supra* n. 14. Other verbs with similar meanings are also used, see for example Arr. *Anab.* 1.25.6, τρύζειν, *to chatter*; Nonnus, *Dion.* 3.13, λάλος τρύζουσα χελιδόν, *the chattering twittering swallow*. Also πιπιρίζειν, εὔστομεῖν. This is, of course, a subjective opinion. Anyone wishing to decide for himself can listen to *Field guide to the bird songs of Britain and Europe* recorded by Sveriges Radio, Stockholm 1972.

¹⁸ *Od.* 21.411.

¹⁹ Hesiodos' *Verk och Dagar*, tr. E. Hellquist, Lund 1923, *sjunger i ottan* (sings at dawn).

²⁰ Kai Curry-Lindahl, 'Roosts of swallows (*Hirundo rustica*) and house martins (*Delichon urbica*) during the migration in tropical Africa', *Ostrich* 34, 1963, 99f.

²¹ Hom. *Od.* 22.239f. D.W. Thompson, *A glossary of Greek birds*, Oxford 1895, 186-192; J. Pollard, *Birds in Greek life and myth*, London 1977, 30-33. Ancient authors do not always distinguish between *H. rustica*, *D. urbica* (house martin), and *H. rupestris* (cliff-swallow). See, for example, Arist. *H.A.* 487b24-27, 612b.

winter today in tropical and southern Africa and begin their long flight back north at the end of February.²² The journey to northern Europe takes about two months and long series of observations indicate that the various species may appear year after year within the same week and often return to the same nesting place.²³ Swallows appear over Crete at the end of March and over Attica at the beginning of April.²⁴ The other migrating species of *Hirundo* leave Africa later.²⁵ The appearance of an actual swallow in February would be an unusual event today and could be due to the overwintering which occasionally results when the birds are surprised by a sudden cold wave. They seek refuge then in caves instead of migrating.²⁶ There are indications in ancient authors that the early sighting of swallows was 'are then also, the passage in Ovid's *Fasti*,²⁷ for example, and the well-known proverb:

μία γὰρ χελιδὼν ἕαρ οὐ ποιεῖ²⁸

for one swallow does not make spring.

The English version of this proverb: "One swallow doesn't make a summer", also indicates awareness of a rather late arrival for the swallow.

Should we ignore the evidence that ancient authors were conscious of the later arrival of swallows and consider the possibility of a climatic change for the worse since antiquity as explanation for the present time of return from Africa, we would find that the opinion of experts on the subject is, instead, that there was a "drastic deterioration of climate over all northern and central Europe between about 1000–500 B.C." followed by "a long slow recovery".²⁹

To sum up, both the philological evidence and the observed migratory habits of swallows speak against the assumption that by Χελιδὼν Hesiod meant the bird.

FOR THE PROPOSED INTERPRETATION AS A STAR

Astronomical arguments: If Hesiod does not mean the bird, then the only alternative in view of the context is a star, one known to the ancients as Χελιδὼν or *Swallow*. Two expressions in Hesiod's text support this interpretation: ὄρωτο Χελιδὼν ἐς φάος ἀνθρώποις, *Swallow rose to the light for mortals* and τὸν δὲ μέτ', *after him (Arcturus)*. These two phrases together indicate that Hesiod is referring to the heliacal rising of a star—interpreting *to the light* as its appearance just before the sun—on the day after the acronychal rising of *Arcturus*, or at least within a very few days after him, a time that would correspond to our twentieth of February or a little later, if it were only a matter of counting the days from our winter solstice. However the calculation of the twilight rising of *Arcturus* in the Archaic period is much more complicated than so.

Leaving aside for the moment the question as to whether Hesiod is using sixty as a round number, as some have argued,³⁰ Henriksson's calculations give the result that *Arcturus* rose sixty days after the winter solstice at Hesiod's latitude (38°20') in the years around 800 B.C. (Fig. 1).³¹ In

a tradition where observations were made over a long period of time there would be no difficulty for a careful and practiced observer to determine with simple instruments and the unaided eye the very days on which the solstices occur.³²

If we assume a date of 700 B.C. for Hesiod,³³ we find that *Arcturus* rose at twilight in that year sixty-two days after the winter solstice or on the day corresponding to our nineteenth of February (twentieth in leap years),³⁴ taking *Arcturus* to be at 2.0° above the horizon in the east and the sun 6.3° below the horizon in the west, the optimal positions for observing the acronychal rising of *Arcturus* at the given latitude. These values have been reached on the basis of parameters calibrated according to the results of Ljunghall's study of twilight intensity at Helsingborg, Sweden and Helwan, Egypt as well as the better visibility in Greece.³⁵ Also taken into account are the observations of Schmidt as to the visibility of stars at the horizon in Greece,³⁶ the differences in the brightness of the sky in the east and west at dawn and at twilight, and the results of Siedentopf's studies concerning the ability of the human eye to observe stars against different background conditions.³⁷

The importance which Hesiod attaches to performing tasks on particular days of the month suggests that he does mean exact days for certain work, such as the winnowing of grain at the appearance of *Orion* and the cutting of grapes

²² Curry-Lindahl (supra n. 20), 100.

²³ K. Curry-Lindahl, *Bird migrations in Africa*, vol. 1, 197; J. Dorst, *The migrations of birds*, London 1962, 215f.

²⁴ Dorst (supra n. 23), 217–223 and personal communication from Roland Staaf of the ring-marking bureau (Ringmärkningscentralen), National Museum of Natural History, Stockholm. I would like to thank Mr. Staaf for his help with this question.

²⁵ Curry-Lindahl (supra n. 23), vol. 1, 213, table I.

²⁶ Dorst (supra n. 23), 281.

²⁷ *Fast.* 2.853.

²⁸ Arist. *Eth. Nic.* 1098a18.

²⁹ H.H. Lamb, review of R. Carpenter, *Discontinuity in Greek civilization*, *Antiquity* 41, 1967, 233; *idem*, *Climate, history and the modern world*, London 1982, 131–145. See also B. Frenzel, 'Climatic change in the Atlantic/sub-Boreal transition on the Northern Hemisphere: botanical evidence', *World climate from 8000 to 0 B.C.* (Proceedings of the international symposium held at Imperial College, London, 18 and 19 April 1966), London s.a., 99.

³⁰ West, 300; van der Waerden, 12.

³¹ Dr. Göran Henriksson, Department of Astronomy, Uppsala University, has devoted a great deal of research to refining his computer program and calculating results proceeding from the information in Hesiod.

³² There is a tradition that Anaximander (c. 550 B.C.) constructed a gnomon which showed the solstices (Diog. Laert. 2.1).

³³ Astronomers in their calculations use the year 0, so that —700 is actually 701 B.C. All tables have been calculated on this basis.

³⁴ All dates are those of the Gregorian calendar.

³⁵ A. Ljunghall, 'The intensity of twilight and its connection with the density of the atmosphere', *Meddelanden från Lunds astronomiska observatorium*, ser. 2, vol. 13, no. 125, 1949.

³⁶ J.F. Schmidt, 'Ueber die Dämmerung', *Astronomische Nachrichten* 63, 1865, article no. 1495. Schmidt made his observations in Athens in the 1860s.

³⁷ H. Siedentopf, 'Neue Messungen der visuellen Kontrastschwelle', *Astronomische Nachrichten* 271, 1941, 193–203.

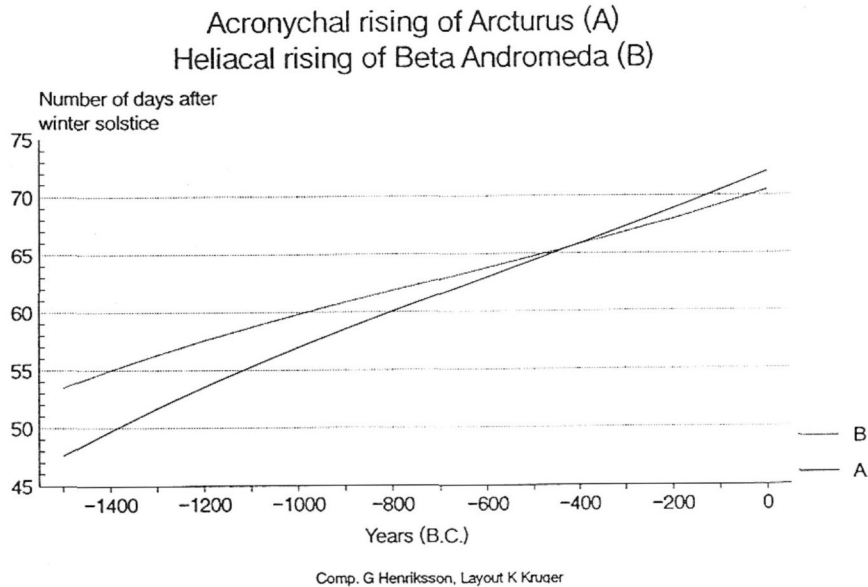


Fig. 1.

upon the heliacal rising of *Arcturus*.³⁸ Such days would probably have been more easily determined by ordinary farmers through observations of certain bright stars than of the sun. In good weather the rising of stars like *Arcturus* (magnitude 0.2) are readily noticed.³⁹

Although the actual result of sixty-two days, for the year 700 B.C., could indicate that Hesiod uses sixty as a round figure, it is possible that he is repeating a tradition going back to about 800 B.C., or even that he lived earlier than is now believed, but not earlier than Herodotus was willing to accept.⁴⁰ We observe in later almanacs that some authors seem to be repeating older data while others, those with advanced astronomical knowledge such as Euctemon and Eudoxus, made their own observations and did their own calculations from them.⁴¹ I think it likely that Hesiod is but one in a long series of authors of calendars, the fragments of some of which will be discussed below. The importance of such calendars for an agricultural-pastoral economy is self-evident and the regularity of the motions of the heavenly bodies provides convenient and exact means for keeping track of the changing seasons. These combination almanacs and weather forecasts from antiquity reveal a wide acquaintance not only with the motions of the stars but also with the habits of animals and other forms of life.

Several of such almanacs give an interval after the winter solstice similar to Hesiod's for the appearance of *Arcturus* and *Swallow*, taken separately or together. When converted to our calendar, they all occur well before the arrival of actual swallows.⁴² There are, for example, fragments of the calendars of Euctemon (late fifth century B.C.), Callipus and Eudoxus (both mid-fourth century B.C.) preserved in the *Calendarium* of Geminus Astronomicus:

Τοὺς δὲ ΙΧΘΥΑΣ ὁ ἥλιος διαπορεύεται ἐν
ἡμέραις λ'.

Ἐν μὲν οὖν τῇ β' (Εὐκτῆμονι) Χελιδόνα ὥρα
φαίνεσθαι· καὶ ὄρνιθια πνέουσι. Καλλιπῶ δὲ
Λέων δύνων λήγει· καὶ Χελιδών φαίνεται· . . .

Ἐν δὲ τῇ δ' . . . Εὐδόξῳ δὲ Ἄρκτουρος
ἀκρόνυχος ἐπιτέλλει· καὶ ὑετὸς γίνεται. καὶ
Χελιδών φαίνεται· καὶ τὰς ἐπομένας ἡμέρας λ'
βορέα πνέουσι, καὶ μάλιστα οἱ προορνιθία
καλούμενοι.⁴³

The sun goes through *Fishes* for 30 days.

On the second (in Euctemon) is the time for *Swallow* to appear; and the bird-bringing winds blow. In Callipus the setting of *Leo* comes to an end; and *Swallow* appears; . . .

(17 February)

On the fourth . . . in Eudoxus the acronychal *Arcturus* rises; and the rain begins. And *Swallow* appears; and the north winds blow the following thirty days, especially those which are called the *proornithiai*.⁴⁴

(19 February)

³⁸ Hes. *Op.* 598 & 610.

³⁹ Werner & Schmiedler, 92. *Arcturus* is there *a Bootis*. The lower the number for the magnitude, the brighter the star. The figures here are according to Harvard Photometry and are given in Werner & Schmiedler. The importance to farmers of determining seasonal dates has been discussed recently by A.T. Reiche, 'Fail-safe stellar-dating: forgotten phases', *TAPA* 119, 1989, 37-53.

⁴⁰ Hdt. 2.53.

⁴¹ van der Waerden, 38-40, 289f.

⁴² For the texts quoted I have tried to convert the dates to the Gregorian calendar. Since the results all are well before the time when swallows return from their migrations south, no great accuracy is required here.

⁴³ *Gemini. Elementa astronomiae*, ed. C. Manitius, Leipzig 1898, 226. See also *Die Fragmente des Eudoxos von Knidos*, ed. F. Lasserre, Berlin 1966, 90, F 229a.

⁴⁴ The meaning of this word is unclear. Its structure suggests *the winds which prevail before the bird-bringing ones*, but from the texts the two seem to blow at the same time. It may be a synonym for ὄρνιθια.

and fragments of Phillipus (mid-fourth century B.C.), Callipus, and Eudoxus preserved in Ptolemy's *Appearances of the fixed stars*:

Mechir κθ' . . . Αἰγυπτίοις καὶ Φιλίππῳ καὶ Καλλιπῳ Χελιδῶν φαίνεται, καὶ ἀνεμώδης καράστασις. Κόνωνι βορέαι ἄρχονται πνεῖν ψυχροί. Εὐδόξῳ ὑετὸς ἐπὶ Χελιδόνι' καὶ ἐπὶ λ' ἡμέρας βορέαι πνέουσιν οἱ καλούμενοι ὀρνιθίαι.⁴⁵

Mechir 29: in the Egyptians, Philippus, and Callippus *Swallow* appears, also the windy season. In Conon the cold north winds begin to blow. In Eudoxus the rain together with *Swallow*; and for thirty days the north winds blow, those called the bird-bringing ones. (18 February).

In these texts Euctemon reports the appearance of *Swallow* on the seventeenth of February and Eudoxus sights both *Arcturus* and *Swallow* on the nineteenth, according to Geminus. In the fragments of Philippus, Callipus, and Eudoxus preserved in Ptolemy, all three observe *Swallow* on the eighteenth, but no mention is made of *Arcturus*.

Surprisingly, similar dates are given by Roman authors although *Arcturus*, due to the precession of the equinoxes, would be rising ten days later for them. For example, *Arcturus* rose according to Columella (c. 60–65 A.D.) on the nineteenth of February, although this star at that time went up in fact on the first of March:

X kal. Martias Leo desinit occidere; venti Septentrionales, qui vocantur ὀρνιθίαι, per dies triginta esse solent; tum et hirundo advenit. IX kal. Martias Arcturus prima nocte oritur, . . . VII kal. Martias ventosa tempestas, hirundo conspicitur.⁴⁶

On the tenth day before the kalends of March *Leo* ceases to set; the north winds, which are called the bird-bringing winds, are accustomed to exist for thirty days; and the swallow also arrives. On the ninth before the kalends of March (19 February) *Arcturus* rises at twilight, . . . On the seventh before the kalends of March the weather is windy, *Swallow* is seen (21 February).

Pliny's date for the appearance of *Swallow* also must be corrected, from the twentieth to the twenty-eighth of February:

Favonium quidam a. d. VIII kalendas Martias Chelidonian vocant ab hirundinis visu, nonnulli vero Ornithian ab adventu avium uno et LXX die post brumam flantem per dies novem.⁴⁷

Some call the west wind *Chelidonias* on the eighth day before the kalends of March from the appearance of *Swallow* (20 February), some in fact *Ornithias* from the arrival of the birds on the seventy-first day after the winter solstice, when it blows for nine days.

The same holds true for Germanicus (Caesar), as reported by Pliny:

A favonio in aequinoctium vernali Caesari significat XIV kal. Mart. triduum varie, et VIII kal. hirundinis visu et postero die arcturi exortu vesperino⁴⁸

From the time of the west wind to the spring equinox, the fourteenth day before the kalends of March (14 February) means to Caesar three changeable days, also the eighth day before the kalends (20 February) when *Swallow* appears and the following day when *Arcturus* rises at twilight.

From these three accounts, with their too early appearances of *Arcturus*, it seems certain that the authors are repeating earlier observations.

In the ancient sources we also have what seems to be contradictory information. In the fragment of Eudoxus preserved in Geminus, we have for the nineteenth of February: "Swallow appears; and *the north winds blow the following thirty days, especially those which are called the pro-ornithia*" (my italics). In the version of the same fragment cited by Ptolemy we have for the eighteenth of February, "the rain together with *Swallow*; and for thirty days the north winds blows, those called the bird-bringing ones" (my italics). If the north winds blow for thirty days beginning in the last week of February, then migrating birds cannot arrive until afterwards. This is clearly acknowledged in the alternate name for these winds, "those called the bird-bringing winds". Columella gives us more specific information, and here we have a text where the distinction between swallow as star and as bird is made explicit: the bird arrives thirty days after the north winds have ceased (about the twentieth of March); the star appears on the twenty-first of February. The texts thus indicate a date late in March for the arrival of swallows, the same time in fact as the modern observations of migrating birds; whereas the star is seen on the twenty-first of February, a date which must be corrected by ten days, as we noted, but which still falls before the return of swallows from Africa.

To my mind the texts do more than support the argument that *Swallow* in Hesiod is a star. The passage from the calendar of Geminus, with the fragments of Euctemon, Callipus, and Eudoxus, not only gives support for the view that Hesiod means the heliacal rising of the star *Swallow*, but also helps us towards the location and possible identification of it in the morning sky. We read that *Swallow* appears at the time when the sun rises in the constellation *Fishes*. In the year 700 B.C., the sun passed close to β *Piscium*, the leading star in the southern *Fish*, on the twenty-seventh of January.⁴⁹ A consequence of this is that

⁴⁵ *Die Fragmente des Eudoxos von Knidos* (supra n. 43), 91, F 229b.

⁴⁶ Columella, *Rust.* 11.2.21f.

⁴⁷ Pliny, *HN* 2.122.

⁴⁸ Pliny, *HN* 18.237.

⁴⁹ According to Columella, *Rust.* 11.2.20, the sun entered *Fishes* on the date corresponding to our fourteenth of February (*XV cal. Martii*). For Pliny, *HN* 18.237, the northern *Fish* rises on our ninth of March (*VIII idus* (Mart.)), which means that the southern *Fish* would have risen earlier.

stars in or near the forward part of *Fishes* will have risen heliacally towards the middle of February. Do we have a candidate for *Swallow* among these stars?

There are several references from antiquity where the word swallow as the name of a star appears in connection with *Fishes*. We find in the scholium to Aratus 242:

τοῦτον τοίνυν τὸν βορειότερον Ἰχθὺν χελιδόνος ἔχειν τὴν κεφαλὴν φασι. ὃν Χαλδαῖοι καλοῦσι χελιδονίαν Ἰχθῦν. τὸ μέντοι σῶμα πλὴν τῆς κεφαλῆς.⁵⁰

Moreover they say that this northern *Fish* has the head of a swallow. Which one the Chaldaeans call *Swallow Fish*. But the body is without the head.

The Chaldaeans' *Swallow Fish* apparently did not include the star or stars which made up the head of the Greek northern *Fish* (thus interpreting the last sentence in the scholium), probably those which were then part of *Fishes*, but are now part of *Andromeda* (see below). Other details in the larger context of this passage make it unlikely that the southern and northern *Fishes* have been confused. *Swallow Fish* is also the name for the northern *Fish* in a Greek horoscope from Egypt dating to the year 81 A.D.⁵¹

Swallow appears even as the name of a star in the area of *Fishes* in the Near Eastern sources, but there are conflicting traditions and interpretations as to the names and the locations of star groups in this region of the sky. In the Assyrian and Babylonian lists from c. 1100 B.C. onward, the constellations *SHIM.MAH* (*Great Swallow*) and *Anunitum* occur and are described as connected by *tails* or bands, as the Greek *Fishes*.⁵² In three of the texts *Anunitum* is mentioned together with *Shinunutum* (*Swallow*); so it seems that the latter member of the pair also could be known simply as *Swallow*.⁵³ *Swallow* and *Anunitum* were in addition designated as the Euphrates and Tigris stars respectively and both seem to have been regarded in some sense as fish.⁵⁴ Until the publication of the text VAT 4956, Weidner was certain about the location of *Swallow* in the northern *Fish* and *Anunitum* in the southern one.⁵⁵ The publication of that text led him to completely reverse his position regarding the locating of the two constellations.⁵⁶ It should be noted, however, that VAT 4956 is a much later copy of a text from 566 B.C. and that both the Chaldaean and the Egyptian Roman traditions speak against the reversal of location which Neugebauer and Weidner based on the text. *Swallow* is now considered to have occupied the area of the southern *Fish* plus the stars ϵ and θ of *Pegasus*, and *Anunitum* the area of the northern *Fish* plus β , μ , ν , π , δ , and ζ of *Andromeda*.⁵⁷ Later, perhaps in connection with the adoption of the Zodiac system—not earlier than the Neo-Babylonian period which began 626 B.C.—the *Tails* (*zibbāti^{mes}*) connecting the two constellations seem to have been used to signify the entire group; for *Anunitum* and *Swallow* are no longer mentioned.⁵⁸

In addition to the Chaldaean and Babylonian traditions there is a third, according to which there was a single constellation in the northern area called *Fish* by the Arabs which included at least one of the stars in *Andromeda*, the

bright star β .⁵⁹ This, in part, may be the same constellation as that of the Chaldaeans.

It may be rash of one not acquainted with the languages involved to offer an explanation for the different names used in the Near East for the constellations in the area of the *Fishes*. The surviving lists, however, indicate that in early times different cities and folk groups had their own names for the stars. There is some evidence of *Fishes* as a name also in Mesopotamia, in connection with a myth about the Tigris and Euphrates or some other body of water.⁶⁰ It may be from here that the Greeks took the name when they adopted the system of the Zodiac. There is no Greek myth associated with this constellation as there is with all of the other Zodiac signs,⁶¹ a fact which indicates that the name is not native to Greece. According to Ungnad, the name *Swallow* for a star is Sumerian and may have its origin in Eridu where the god Ea's daughter Nina sometimes assumed the form of this bird.⁶² The name was later used by other groups, for example the Amurru, and appears in the important series of lists of star names known as ^{mul}APIN where it seems to have signified a star in the region of *Fishes*.⁶³

To summarize, it may be argued that the Greek *Fishes* was newly delineated, largely following the shape of the Mesopotamian constellations *Anunitum* and *Swallow* with their bands, but taking another Mesopotamian name, *Fishes*—which may have been very similar in shape—at the time when the Zodiac was adopted in Greece.⁶⁴ The in-

⁵⁰ *Scholia in Aratum vetera*, ed. J. Martin, Stuttgart 1974, 195f.

⁵¹ *Greek papyri in the British Museum*, ed. F.G. Kenyon, London 1893, 136.104: χελιδονιαίου ιχθυός. Perhaps it should be mentioned here that there are references in the literature to a flying fish with the name χελιδών, but it seems not to occur before the first century A.D. (Pliny *HN* 9.89); D.W. Thompson, *A glossary of Greek fishes*, London 1947, 285–287. The name for the fish may be connected with the eastern tradition of a constellation named *Swallow fish*.

⁵² On the name see Weidner, 148, 150, 159 (transliterated *SIM-MAH*). According to Weidner *SIM* is the ideogram for *sinunutum*, *Schwalbe*; for *MAH* he gives the meaning of *erhaben*, and *Anunitum* is a manifestation of Ishtar. *Sinunutum* is also a female name according to Ungnad, 81 n. 2.

⁵³ Weidner, 160; van der Waerden, 71, in the series of texts known as ^{mul}APIN. Transliterated also as *shinunutum*.

⁵⁴ Weidner, 160–162; see also Ungnad, 81f.

⁵⁵ Weidner, 159f., 163.

⁵⁶ P.V. Neugebauer & E.F. Weidner, 'Ein astronomischer Beobachtungstext aus dem 37. Jahre Nebukadnezars II. (–567/66)', *Berichte über die Verhandlungen der königlich sächsischen Gesellschaft der Wissenschaften zu Leipzig* 67, 1915, 85.

⁵⁷ van der Waerden, 64f., 68, 72–74.

⁵⁸ van der Waerden, 80; Weidner, 150. On the date of the Zodiac see van der Waerden, 125.

⁵⁹ Paul Kunitzsch, *Arabische Sternnamen in Europa*, Wiesbaden 1959, 67, no. 7.

⁶⁰ Weidner, 161f., Ungnad, 82.

⁶¹ Roscher, *Lex.* 6.980.

⁶² Ungnad, 82.

⁶³ van der Waerden, 68, table 2 & 71.

⁶⁴ G.J. Toomer, *Ptolemy's Almagest*, London 1984, 379–381. Compare the stars in *Fishes* given by Ptolemy with those in van der

roduction of the signs is traditionally credited to Cleostratus of Tenedos (second half of the sixth century B.C.),⁶⁵ and the first mention of *Fishes*, as far as we know, was in the calendar of Democritus (late fifth century B.C.).⁶⁶ It seems probable that the stars in the area of *Fishes* had different names in Greece before the Zodiac system was adopted, names taken from Greek mythology. These would have been the names known to Hesiod. It is suggested that we have in Hesiod and the later Greek authors of calendars a tradition that there was a star known as *Swallow* which rose heliacally shortly after the twilight rising of *Arcturus*. Further, from the evidence of the later calendars, that *Swallow* was located in the *Fishes*, and from the Aratus scholium and some of the Near Eastern sources there survives a tradition of a star named *Swallow* in the area later occupied by the northern *Fish*. The survival of the name *Swallow* in the calendars after the adoption of *Fishes* would have been due to the great weight of tradition—so striking in the Roman authors—just as that of the *Pleiades* and the *Hyades* survived after a new delineation of *Taurus* when the Zodiac signs were introduced. The changes in the risings and settings of stars due to the precession of the equinoxes are also likely to have caused adjustments in the heavens.

Among the stars in the area of *Fishes* which rise heliacally just after *Arcturus*, there are two possible candidates for *Swallow*: γ *Piscium* (magnitude 3.8),⁶⁷ the brightest star in the head of the southern *Fish*, and β *Andromedae* (magnitude 2.4),⁶⁸ which originally may have been in the northern *Fish*, to judge from the descriptions of the Mesopotamian and the Arabic constellation.⁶⁹ A number of factors make it more likely that β *Andromedae* was either *Swallow* or the brightest star in a constellation *Swallow*: none of the stars in the present day *Fishes* are bright.⁷⁰ β *Andromedae* has a magnitude as great or greater than the other stars whose risings and settings were used in the ancient calendars. It rose heliacally in the year 700 B.C. on the twentieth of February, the day after the twilight rising of *Arcturus*, a fact which accords well with the passage in Hesiod. The calculations here are calibrated in the same way as in the case of *Arcturus* above. The optimal values are 4.2° above the horizon for β *Andromedae* and 9.2° below for the sun.

Three additional tantalizing facts are that in the period 500–300 B.C., β *Andromedae* rose heliacally on the same day as *Arcturus*, as reported by Eudoxus above; in the same passage where he incorrectly reports *Swallow* as appearing on the twentieth of February, Pliny has the birds arriving very nearly on the day when β *Andromedae* rose heliacally in his time, seventy-one days after the solstice; and, in the first half of the first century A.D., β *Andromedae* rose a day or two before the acronychal rising of *Arcturus*, as we read above in Pliny's account of Germanicus (*Fig. 1*). It is difficult to know what to make of these coincidences. In Eudoxus's case, we find what we might expect of a man with his reputation, an accurate account of the facts. Pliny, on the one hand, seems to be faithfully reporting the traditional date for the appearance of *Swallow* while, on the other hand, disclosing a correct awareness of the facts by

having the birds return at the same time as the star's actual appearance, as if the return of the birds and the star in some way has become inextricably associated. As for Germanicus, he does not have a reputation for accuracy, but here at least he seems to be correct.

Philological arguments: In Hesiod and Homer $\phi\acute{\alpha}\omicron\varsigma$ is always to be translated as light, normally as light from a physical source such as the light of the sun or of fire.⁷¹ Purely metaphorical uses are rare.⁷² This has caused problems of translation for those who have understood $\chi\epsilon\lambda\iota\delta\acute{\omega}\nu$ to mean the bird. For example, Evelyn-White and Hellquist ignore $\phi\acute{\alpha}\omicron\varsigma$ while West translates it with *sight*.⁷³ The phrase $\epsilon\acute{\kappa}$ $\phi\acute{\alpha}\omicron\varsigma$ often has the meaning *into the light of day*, as it does here in line 568.⁷⁴

The choice of verbs used with swallow in the sources above is consistently different for the bird and for the star. When the star is meant the verb $\phi\alpha\acute{\iota}\nu\epsilon\tau\alpha\iota$ (*appears*) is used by authors writing in Greek. By Latin authors *conspicitur* (*is seen*) and *visu* (*appearance*) are used for the star, whereas *advenit* (*arrives*) and *adventu* (*arrival*) are used for the return of the bird (*supra pp. 55f.*).

Thus in Hesiod and in a number of other ancient texts, there are both astronomical and philological arguments which support the hypothesis that *Swallow* was the name of a star.

Mythological arguments: The coincidence of names for the same Babylonian and Greek stars has long been recognized and its significance lively discussed.⁷⁵ In nearly every case the Greek names are firmly anchored in the earliest Greek traditions. If the argument presented here is accepted, that there was a star *Swallow* known to Hesiod, then we can be sure, despite the coincidence of the name in Mesopotamian sources, that for the Greeks the star represents the mythological figure Philomela, daughter of Pandion, who helped her sister Procne cook and serve Procne's young son Itys to his father Tereus as revenge for the rape and mutilation of Philomela. Tereus pursued the sisters with murder in mind and by divine intervention they were all changed to birds, Tereus to a hoopoe, Procne to a nightingale and Philomela to a swallow, to recount the best-known ver-

Waerden, 72 fig. 7 and with those in the present day constellation in Werner & Schmeidler, 391–396.

⁶⁵ Pliny. *HN* 2.31.

⁶⁶ *Gemini. Elementa astronomiae* (*supra n.* 43), 226.

⁶⁷ Werner & Schmeidler, 392.

⁶⁸ Werner & Schmeidler, 52.

⁶⁹ van der Waerden, 72 fig. 7; Kunitzsch, 67 no. 7.

⁷⁰ Werner & Schmeidler, 391–396.

⁷¹ For example, Hes. *Op.* 155, Hom. *Il.* 5.120 (the sun); Hes. *Th.* 451 (Dawn).

⁷² There are two, both describing Telemachus as $\gamma\lambda\upsilon\kappa\epsilon\rho\acute{\omicron}\nu$ $\phi\acute{\alpha}\omicron\varsigma$ (sweet light): Hom. *Od.* 16.23 & 17.41.

⁷³ Evelyn-White (*supra n.* 7); Hellquist (*supra n.* 19); West (*supra n.* 16).

⁷⁴ For other examples see: Hes. *Th.* 157, 626; Aesch. *Pers.* 222, *Cho.* 459.

⁷⁵ van der Waerden, 73.

sion.⁷⁶ At least two versions were current in the early Archaic period and additional ones are found later in the Greek tragedians.⁷⁷

The transformation of Procne, Philomela, and Tereus to stars—all three are likely to have undergone this metamorphosis—following the change to birds has an analogy in the fate of Callisto who first was changed into a bear and then into a star. In both myths we find among the different sources other suggestive similarities. In each case there is a version in which Artemis is responsible for the transformation to the animal form.⁷⁸ Both myths also may be etiological for the names of geographical areas. Callisto as the mother of Arcas provides the ancestor after whom Arcadia was named and Philomela, in whose case the evidence is vaguer, may be the namesake for Chelidonia, an area in Attica near Kephisia. The name for this area is known from about the fourth century A.D. and still is used.⁷⁹ Another similarity are the indications that both Callisto and Philomela figured in Greek cult. For Callisto we have the grave near Megalopolis—said to be hers—where there was a sanctuary to Artemis Calliste,⁸⁰ and the large statue dedicated to her at Delphi by the Arcadians, following the battle of Leuctra.⁸¹ For Philomela the evidence is again weaker, but nevertheless exists. There was the festival known as the Chelidonia in connection with which special vases may have been used.⁸² In the Delian inventories there are a number of references to phiales and kylikes described with the adjective *χελιδόνειος*; sometimes the adjective and the noun *χελιδόνας* occur alone. The vases are from the Hieropoion, the Andrion Oikos, the temple of Apollo, and the Artemision where 64 are mentioned.⁸³ Tréheux studied these vases in his dissertation and concluded that they were all, in fact, kylikes and were described as swallow-like because of handles which resemble the tails of swallows.⁸⁴ Tréheux's point is well made; he draws parallels to other vase shapes which have received their names on the basis of a resemblance to the namesake, as the mastos, and there are handles which resemble swallow-tails in the museum on Delos. Still, it seems another view is possible; vases have received their names in other ways, the therikleia, for example, after the craftsman Thericles.⁸⁵ Also, the shape of the handles may have been inspired by the use for which the vases were intended. Suggestive here is that so many of these vases come from the Artemision and perhaps may indicate a continuing association of Philomela with Artemis, as in the case of Callisto at Brauron.

Iconographical arguments: Specific evidence that Philomela as Swallow was an important figure in Greek myth in the Archaic period is provided by her appearance on one of the metopes of Temple C to Apollo at Thermon, painted near the middle of the seventh century B.C., where she is identified by name.⁸⁶ She appears there in the company of Perseus and Orion, both of whom have given their names to constellations in the same part of the sky.⁸⁷ Swallow, like them, figures in a myth which seems to go back to the Mycenaean period, if we accept the case for Perseus presented by Nilsson.⁸⁸ More recently Burkert has argued for continuity from the Mycenaean Age in the use of cultic

areas and implements, iconography, architecture, and to some degree mythology.⁸⁹

To summarize, on philological and ornithological grounds it seems most unlikely that Hesiod was referring to a swallow in line 568 of his *Works and Days*. Astronomical, philological, mythological, and iconographical considerations indicate, instead, that *Swallow* was a star, named after the younger of Pandion's daughters. Parallels exist in Callisto who first was transformed into an animal and then into a star; in Orion and Perseus who also were the namesakes of stars and who, as Swallow, were represented on metopes of the temple to Apollo at Thermon; and in the Hyades and the Pleiades who survived as star names although they were parts of another constellation. From these factors we may also conclude that the myth of Pandion's daughters is likely to have had greater significance for the Greeks than has been recognized hitherto.

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⁷⁶ Apollod. *Bibl.* 3.14.8.

⁷⁷ Our passage in Hesiod and Hom. *Od.* 19.518–523 & 20.66–78. We meet two other versions in Aeschylus (*Supp.* 60–67) and Sophocles (ffr. *Tereus* in *Tragicorum graecorum fragmenta* 4, ed. S. Radt, Göttingen 1977, 435–445. The version in Antoninus Liberalis seems also to be very old. The myth is extremely complex and, in my opinion, has its origins in the Indo-European period; a separate study of it is planned. K. Meuli's research also indicates that myths dealing with the close connection between the human and animal worlds are generally to be regarded as very old and have been present in Greece from very early times; see, for example, 'Odyssee und Argonautika', *Gesammelte Schriften* 2, Basel & Stuttgart 1975, 593–676.

⁷⁸ Callisto: Hes. fr. 163; Philomela: Ant. Lib. *Met.* 11.

⁷⁹ Arcadius of Antiocheia, *de accentibus*, 99.15. The Athenian family who owned the hotel in Raphina in which I stayed while last in Greece (1990) knew the name and the location immediately, but they knew no explanation for the name.

⁸⁰ Paus. 8.35.8.

⁸¹ Paus. 10.9.5.

⁸² Ath. 8.360.

⁸³ *JG* XI,2, 145,46 (301 B.C.), 154,B6 (296 B.C.), 203,B29 & B31 (270 B.C.), 205, A3 (267), 224, B26 (259 B.C.); *Inscriptions de Délos* I. *Comptes des Hiéropes*, ed. F. Durrbach, Paris 1926, 298, A108, 162, 165, 166, 167, 168 (239 B.C.).

⁸⁴ J. Tréheux, *Études critiques sur les inventaires de l'Indépendance délienne* (thèse dactylographiée), Paris 1959, 353–373. I am very grateful to M. Tréheux for kindly giving me access to these pages from his dissertation.

⁸⁵ Ath. 11.470.

⁸⁶ Humfry Payne, 'On the Thermon metopes', *BSA* 27, 1925–1926, 125f.; *idem*, *Necrocorinthia. A study of Corinthian art in the Archaic period*, Oxford 1931, 96 n. 31; R. Hampe & E. Simon, *The birth of Greek art*, London 1981, pls. 107 & 110.

⁸⁷ *Orion*, as is well-known, occurs both in Hesiod (*Op.* 598, 609, 615, 619) and in Homer (*Il.* 18.486 & 488, *Od.* 5.121 & 274, 11.310 & 572).

⁸⁸ M.P. Nilsson, *The Mycenaean origin of Greek mythology*, Cambridge 1932, 40–42. The high antiquity of the Perseus myth is an important element in Nilsson's argument for the Mycenaean origin of Greek mythology.

⁸⁹ W. Burkert, *Greek religion*, Cambridge 1985, 43–53.