On Forsskål's Work with the Gathering and Philological Treatment of Arabic Names for Plants and Animals

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Abstract

One of the main goals stipulated in the Royal Instruction to the members of the Royal Danish expedition 1761-1767 to Arabia was the gathering of local names and designations for plants and animals. Peter Forsskål, the appointed naturalist of the expedition, had specifically been given the task of noting local names for botanical and zoological species met during the expedition. Forsskål acquitted himself scrupulously of this task and his notes are of great academic value. The philological difficulties, methods and implications of Forsskål's material are discussed and compared with the author's own experience with collecting and analysing Arab names for plants and animals. During field work involving the gathering of local names of such organisms, the researcher may encounter the following main categories of difficulties: (1). Doubt about the botanical/zoological identity of the species in question. The informant may not always be able to distinguish similar species or know their precise designation. (2). Linguistic imprecision. The researcher may be unable to differentiate or recognise the different linguistic features of the provided names or designations, or may not be able to understand precisely what the informant means. Even if the spelling of the collected species name is controlled by the informant, spelling mistakes may occur. These difficulties are illustrated and discussed through six examples, gathered from Forsskål's philological material and the author's own field research.

Introduction

The expedition "The Arabian Journey 1761-1767", in which Forsskål took part, was designed as a multidisciplinary undertaking. Even though the initial scope of the expedition had been to gather new data in order to make advances in the philological treatment of and research in the text of the Bible, the final impact of it was much wider. It included, among other responsibilities, the gathering of as many different plant and animal species as at all possible, as well as scholarly registration of these species and the scientific description of the species, which were considered new to science, *i.e.* the species which were not listed and described in Carl von Linné's 10th edition of his *Systema Naturae.*[1]

In the Royal Instruction of the expedition of 15 December 1760, it is stipulated in the §§ 17-19, that the tasks of Forsskål were both philological and biological. He had to gather and systematically describe all new species and to record their local names both in Arabic and in Latin characters. He furthermore had to compare the information he acquired with the in-

1. See discussion of what Forsskål used for identification of species in the field by Hepper and Friis (1994, pp. 25-29).

formation given by Classical Arabic authors on subjects of nature and natural history, and with the linguistic and philological information provided by the main Arabic lexica, which were used by his contemporary Europeans scholars.[2]

Philological treatment of Arabic species names

The treatment of Arabic species names represents a specific problem. In most cases the identity given by a particular name for an animal or plant is either not known or rather vague. There are several reasons for this:

1. The names of species were never philologically standardized in Classical Arabic literature.
2. The names vary with local use.
3. In Classical Arabic science, which was the reference source in the Arabic speaking countries until the modern *nahdah*, *i.e.* the "renaissance" of science and letters which started in the nineteenth century and was both provoked and enhanced by the increased contacts with Europe,[3] the concepts of biological species were not adequately defined. Hence there was not even an approximation of consensus about the concepts of the individual species. Some species were unanimously accepted, while the opinions about the delimitation of other species varied tremendously.
4. The great majority of Classical Arabic texts of good quality on zoological and botanical matters still await a serious interdisciplinary study.

When Forsskål left for the expedition, he was thus asked to solve a problem, which was already realized to be complicated. He acquitted himself scrupulously of this task and brought home a very substantial material of local zoological and botanical names in Arabic. In § 18 of the Royal Instruction Forsskål was explicitly ordered to write down the local names with both Arabic and Latin characters and, if the names varied from one locality to another, to record the local variation in the use of names. As a consequence of this instruction Forsskål recorded the names with the local dialectical pronunciations. In the Arabic-speaking domain there is in most cases a significant difference between the official written language and the spoken ones.[4] Forsskål was a fine philologist, and he knew which grammatical features corresponded to each other in the dialects and in the official Classical Arabic language. It is admirable that he carefully wrote down the notes on local Arabic names of animals and plants and never tried to alter them into Classical Arabic.

Forsskål's publications with Arab names of plants and animals

As is well known from the literature, Forsskål died during the expedition, perishing of malaria in the town of Yerim in Yemen on the 11th of July, 1763. If his works were to be of scientific use, they had thus to be published posthumously, and this task was meticulously carried out by Carsten Niebuhr (1733-1815), who was the sole survivor of the expedition.

Two books authored by Forsskål but published by Carsten Niebuhr appeared in 1775: A botanical work *Flora Aegyptiaco-Arabica*, was published early 1775.[5] Probably later 1775, Niebuhr published the zoological work, *Descriptions Animalium*.[6] In these books the notes gathered by Forsskål regarding the local names are listed and published, usually in association with a scientific treatment of the species they have been recorded to designate. It must be noted that Forsskål provided all the local names he encountered, not only those in Arabic. Thus he has also noted local names in Greek and Turkish gathered during the expedition's stay in Constantinople and in other places in the

2. Rasmussen (1990), p. 70.
3. Merad (1995).
4. Moscati et al. (1980) § 4.5- § 4.6; Bergsträsser (1995) § 6/1.0- § 6/2.4.
5. Forsskål (1775a). See note about date of publication in Hepper and Friis (1994).
6. Forsskål (1775b).

Mediterranean. In Malta he compiled a list of fish species, with their local names in the Maltese Arabic dialect.[7] In 1776 the drawings of animals and plants, which had been effectuated on Forsskål's requirement by Georg Wilhelm Baurenfeind, the illustrator of the expedition, were published in a third volume that combined drawings of animals and plants and was entitled *Icones Rerum Naturalium.*[8]

In approximately 2/3 of the cases Forsskål gave the Arabic names for plants and animals with both Arabic and Latin characters, but in the remaining cases he used only Latin characters. Therefore, his notes may give problems in the philological treatment and, provided no specimen was preserved and could be associated with the Arabic name, also in the identification of the species denoted. These problems may be attributed to the fact that Forsskål made his notes for his own personal use, and that he intended himself to carry on with further orthographic and linguistic adjustments and corrections before the observations were published. He thus did not make explicitly known how his transliterations should be read. This gives problems in the philological treatment, as Forsskål did not make any difference between plain consonants and their emphatic counterpart,[9] nor did he note the letter "ayn," ع.[10] His notation of vowels may also be ambiguous when the species name in question is to be set in relation to the Classical language. It is to be noted that these shortcomings are to a large extent due to the fact that a scientific system of transliteration had not yet been developed at that time. In fact Forsskål noted the names as he had, or believed to have, heard them as best he could with the characters of the classical Latin alphabet.

7. Forsskål (1775a), pp. XVIII-XIX.

8. Forsskål (1776).

9. In Arabic the consonants "d" (د), "d̲" (ذ), "h"(ه), "k" (ك), "s" (س) and "t" (ت) have a secondary pronunciation, transcribed as ḍ, ẓ, ḥ q, ṣ, and ṭ, which is clearly differentiated from their non emphatic correspondents, and which is phonemic in nature. In Arabic they are consequently written with their own letters, namely ض ظ ح ق ص ط

10. However, this letter is often indicated in the notes as a doubling of the vowel.

However, when it comes to the identity of the species in question, the biological part of the name treating is scientifically correct, even though many species have shifted their taxonomic position in the zoological or botanical systems during the course of the 250 years, which have passed since the expedition worked in the field, and hence also the scientific nomenclature has changed significantly.

The difficulties in gathering and treatment of Arabic species names

This leads us to the main problem, which is being discussed here, namely how the informants understood the question about the name of a given animal or plant asked by Forsskål, or how they themselves viewed the specific identity of the animal or plant in question. I have asked Arabic speaking persons for species names in the same way as Forsskål and met the same kind of difficulties as he did.

These difficulties may be summed up like this:

1. Understanding the informant
The informant may know the identity of the animal or plant very well and say that the species is *ma'rūf, i.e.* well known in his surroundings, but when asked about the name his dialectical pronunciation may be blurred or difficult to discern for a non-native speaker. This difficulty may to a certain extent be avoided if the informant is literate and asked to control the spelling of the notes taken down by the researcher. This does not of course eliminate spelling errors, but it may to a wide degree rectify misunderstandings in the auditive reception of the names by the researcher. As the orthography of words in the dialects has never been officially standardized, different informers may legitimately provide different spellings.

2. The informant's knowledge of the subject matter.
The informant may not know which species he/she is being asked about or have only vague knowledge of how it is delimitated from similar species, and thus misunderstandings may occur. For instance a more widely conceived group designation may be misun-

Fig. 1. Type of *Anisotes trisulcus* (Forssk.) Nees (original name: *Dianthera trisulca* Forssk.; family Acanthaceae) at the Natural History Museum of Denmark (Forsskål 1222 in *Herbarium Forsskaolii* at C). Collected by Forsskål at Wadi Surdud in Yemen; described in *Flora Aegyptiaco-Arabica*, p. CIII, No. 28; 7 (Cent. I, No. 20). Photo by the Natural History Museum of Denmark.

derstood as a species name. It may happen when the organism is a grass, an insect or a fish, or another similarly widely defined group, and the name of such a group is given by the informant. This difficulty may to a certain extent be avoided by choosing the informant with care, *i.e.* discussing the subject with him in order to gauge his knowledge of it, or choose a person whose activities involve knowledge about the species or subjects in question. For example, it is to be expected that a fisherman's knowledge of the fish-fauna is much richer than that of layperson, and that this rich knowledge of the subject will be translated into knowledge of the pertaining vocabulary. The main problem, though, may not be that the informant *per se* has a bad knowledge of the species in question, but that the name or designation he indicates may have varied with time and place. Usage of names may show significant variation both in the Classical language and in dialects, compared to the actual use when the question about the name is asked. Another problem may be that different names can be used for different stages in the life cycle of a species, or for male or female specimens, and that this information is not conveyed to the researcher because the informant is not sufficiently aware of these complications or take general knowledge about them for granted.

Actual examples of difficulties in the treating of the linguistic material

1. Understanding the informant. Three examples will illustrate this kind of difficulty.

a. The plant species *Anisotes trisulcus*[11] (family *Acanthaceae*) is noted by Forsskål as having two different pronunciations in Arabic, namely "maẓ" and "maḍ". As the letter "ḍād", ض, is often pronounced as the letter "ẓā", ظ, in many parts of Yemen the two ways of spelling are both possible.[12] However, the fact that Forsskål noted the spelling 'maḍ' might indicate that the original form was correctly rendered as "maḍ".[13]

b. Four plant species have been given the name *wuzar* in Arabic by Forsskål, but his transcriptions in Latin characters are *vusar, uusar* and *vuzar*.[14] This reflects his scrupulous aim to reproduce the pronunciation as faithfully as possible, as a native speaker may pronounce the first syllable of the name *wuzar* either with a "w" or a long "ū" or with both. The fact that the dental "s" is written both as voiced and non voiced reveals the fact that this pronunciation may be floating or the difference may be hard to discern when heard. Another problem, though, is that Forsskål never explained how his transcriptions should be read.

c. The fish species Variegated Lizardfish (*Synodus variegatus*)[15] has the Arabic name *hārit̲* in southern Sinai.[16] This name was given to me by two members of the Muzīn tribe in Southern Sinai in 1992. These two Bedouins controlled my spelling as I wrote it down. Even if the letter "t̲" was not pronounced too clearly by the Bedouins, my two informants nevertheless insisted that it should be written as *hārit̲*. Without their remark I would have written *hārif*.[17] In Hurghada this fish name is pronounced *hārit*,[18] but the lack of the final interdental is due to the Egyptian dialect. The Bedouins of Sinai have retained the interdentals.

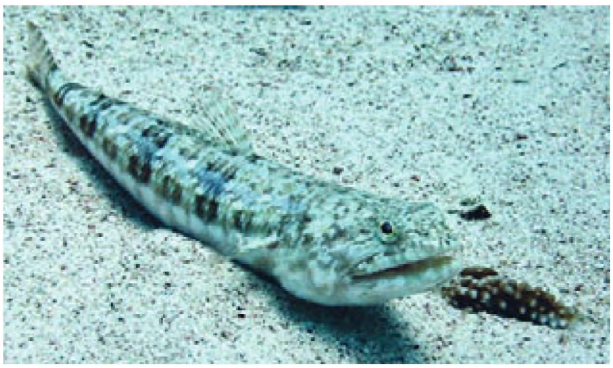

Fig. 2. *Synodus variegatus* (Grinners; family Aulopiformes). Photo taken April, 2007, in the Red Sea at Dahab, Egypt, by Alan Slater; reproduced via Wikimedia Common.

2. The informant's knowledge of the subject and/or variations in the use of the names in question. Three further examples will illustrate this type of difficulties.

a. Forsskål noted the names *sawsan* and *sūsan* for the plant species *Pancratium maritimum*.[19] This name is well known in different versions from both Classical Arabic and from other Semitic languages. Forsskål mentions that this plant name may be the

11. Fig. 1.
12. Cf. Behnstedt (1987) §1. 2. 3.
13. Provençal (2010) p. 15. Prof. Loutfy Boulos, Cairo, has also proposed the spelling "maḍḍ".
14. These plant species are: *Hypoestes forskalei, Justicia caerulea, Justicia resupinata* (all three family Acanthaceae) and *Sida ciliata* (family Malvaceae). Furthermore Forsskål noted: "Arab. *Vusar.* (...) nomen familiæ Justiciarum" (Forsskål 1775b), p. 4. This indicates that the name, according to Forsskål, could be used for several species of the genus *Justicia* and related genera, including *Hypoestes*.
15. Fig. 2.
16. Provençal (1997), No. 30.
17. Provençal (1997).
18. Provençal and Skaarup (manuscript in prep.).
19. Fig. 3.

Fig. 3. *Pancratium maritimum* (family Amaryllidaceae). Photo taken July, 2006, at Paestum, Campania, Italy, by Stemonitis; reproduced via Wikimedia Common.

same as the Classical Hebrew *shūshan* or *shōshannā*,[20] and that this plant is often said to be the white lily (*Lilium album*).[21] Forsskål further notes: "Its similarity is great with this *Pancratium* as in pure whiteness

20. Forskål (1775b), p. 209.
21. This plant is now called *Lilium candidum*; Fig. 4.

Fig. 4. *Lilium candidum* (family Liliaceae). Photo taken July, 2005, at VanDusen Botanical Garden by Stan Shebs; reproduced via Wikimedia Common.

it supersedes that of the lilies....".[22] The names *shōshan* and *shōshannā* are also found in Aramaic in the forms *shūshantā* and *shōshantā*.[23]

The two flowers in question, the Sea Lily (*Pancratium maritimum*) and the White or Madonna Lily (*Lilium candidum*) seem indeed superficially to be rather similar.[24] Flowering plants bearing the name *sūsan*, *sawsan* or *shōshan*, etc. have a long history in Semitic literature.[25] Up to now no certain indications for the botanical identity of the Classi-

22. "Ad Hebræorum שוש ? Illum plantam Doctiss. Celsius Lilium album putat. Similitudo magna est cum hoc Pancratio, quod candore superat Lilia & omnem albedinem tinctoria arte provocatam. Candidus vestium color Sacrificulis olim reservatus erat; an vero hinc concludi potest, regale illum fuisse ornamentum, præter purpuram?"
23. Löw (1881, nr. 323).
24. Cf. Blamey and Grey-Wilson (1993, No. 2148 and No. 2270).
25. Fig. 5.

Biblical Hebrew: šōšannā, šūšan, שׁוֹשַׁנָּה - שׁוּשָׁן

Aramaic : šūšantā, šōšantā שׁוּשַׁנְתָּא

Arabic: sūsan sawsan سوسن

Fig. 5. Semitic names used for "white lilies"

cal Hebrew *shūshan* or *shōshannā* are available.[26] In Aramaic and Arabic translations of Greek works on pharmacology and other topics the Madonna Lily (*Lilium candidum*) as well as other flowers such as certain irises have been translated with this name.[27] It is therefore natural that the names *sawsan* and *sūsan* as recorded by Forsskål should be associated with *Pancratium maritimum*.

b. Regarding fish names, the big Coral Grouper (*Plectropmomus pessuliferus*), often called the Roving Grouper, or the Roving Coral Grouper, is called *nājil* at many places along the Red Sea. This name was noted by Forsskål and confirmed to me during my investigations in Hurghada in May 2011.[28] Nevertheless, in Sinai this name was used by the Bedouins of the Muzīn tribe for the Lyretail Grouper (*Variola louti*).[29] As the Lyretail Grouper is the only grouper in this region which has a lunate caudal fin,[30] it is unlikely that the species were mistaken for the Roving Grouper, especially as my informant was a fisherman. We have thus here apparently an instance where a name may shift from one species to another. It must be noted, that both species are large carnivorous fish, that are closely related to each other and have similar ways of living, and that their physical appearance shows their close relationship even though the form of the caudal fin in the respective species is conspicuously different.

Fig. 6. Several species of Coral Groupers (family Serranidae) for sale at the fish market in the Egyptian town of Hurghada on the Red Sea Coast. Forsskål must have collected specimens and vernacular names for fish from local fishermen and at fish markets at the Red Sea. Photo by P. Provençal.

Fig. 7. The Lyretail Grouper (*Variola louti*; family Serranidae) in its natural habitat at a coral reef in the Red Sea. Photo by P. Provençal.

c. In Hurghada the name *kushar* is the common name for groupers (family *Serranidae*) sold in the

26. Provençal (2001), pp. 210-211.
27. Cf. Löw (1881), No. 323; Leclerc (1883), art. 1253.
28. Forsskål (1775b, p. 42 No. 41, c); Provençal and Skaarup (manuscript in prep.); see in Fig. 6 various species of Groupers for sale in a fish market in Hurghada at the Red Sea.
29. Provençal (1997); see the fish photographed in its natural habitat in Fig. 7 and Forsskål's original collection, the type specimen, in Fig. 8.
30. Cf. Randall (1992, pp. 44-51).

Fig. 8. Type of *Variola louti* (Forsskål, 1775) (family Serranidae; original name: *Perca louti* Forsskål) at the Natural History Museum of Denmark, ZMUC, no. P43566 in Forsskål's "Fish Herbarium." It was collected by Forsskål at Jidda in Saudi Arabia or Luhaiya in Yemen and described in *Descriptiones Animalium*, pp. XI and 40, no. 40. Photo coutesy the Natural History Museum of Denmark, ZMUC, by Marcus Anders Krag.

fish market.[31] According to the informants, they unanimously told that *kushar* is a group name including five different species. In Sinai it was a name used for both the groupers, the Coral Hind (*Cephalopholis miniata*) and the Peacock Grouper (*Cepholopholis argus*). Forsskål mentions this name as the species name for the Brown Marbled Grouper (*Epinephelus fuscoguttatus*), and he writes that this name is from Jiddah (*Djiddæ*).[32] In Suez this species is called *kassjara,* following Forsskål's own notation.[33] Forsskål thus clearly thinks that this common denomination is a species name. However, it is a common name for a range of different species of groupers in Jiddah,[34] and thus Forsskål has thus apparently misunderstood the real meaning of the name.

Conclusion

It is clear from the above that both a taxonomic and a philological treatment of this kind of linguistic data is necessary in order to determine precisely the meaning of information collected during field work.

Furthermore it is clear, that in treating Arabic botanical or zoological texts one must be aware of the variation in both pronunciation and concepts of the informants. As the species names used in Classical Arabic texts in the vast majority of cases are names adopted from the local population and used by the respective authors it thus becomes imperative to determine how the author of an Arabic text understood the species designations he used. What was the informant's or author's scholarly, sociological and geographical background? How well informed was he?

An interdisciplinary approach to the treatment of the linguistic material, whether notes collected in the field from the verbal information of local people or longer Arabic texts, thus becomes imperative in order to determine the subject matter of the text or the precise content of the species names. This is the only way by which a precise appraisal of the sometimes very detailed information provided in Classical Arabic biological texts will be possible. The interpretation of Arab plant and animal names is like assembling a big game of jigsaw puzzle, but Forsskål has certainly given his important contribution to many pieces in that puzzle.

31. Provençal and Skaarup (manuscript in prep.); Fig. 6.
32. Forsskål (1775a), p. 42 No. 42 b.
33. Forsskål (ibid.).
34. Neve and Aiidi (1972), No. 34. As Neve and Aiidi (1972) noted the local dialectical pronunciation, they write the name as *kshar*, but the root consonants in the name are the same.

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