

Systematic notes on Asian birds. 61.
New data on taxonomy and nomenclature of the Common Sand
Martin *Riparia riparia* (Linnaeus, 1758) and the Pale Sand
Martin *R. diluta* (Sharpe & Wyatt, 1893)

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The main diagnostic characters of *Riparia riparia* and *R. diluta* are discussed based on fresh examinations of extensive material. The opinion of Zarudny that his subspecies *innominata* belongs to *R. riparia* is validated, but the series of syntypes of *R. riparia innominata* includes birds of both these sand martin species, and a lectotype is designated for *R. r. innominata* Zarudny 1916.

Introduction

Loskot & Dickinson (2001) examined some nomenclatural problems concerning the Common Sand Martin *Riparia riparia* (L.) and the Pale Sand Martin *R. diluta* (Sharpe & Wyatt), evaluated names introduced by Zarudny (1916), and corrected the synonymy of these two species in light of the findings of Zarudny and later workers, especially Gavrillov & Savchenko (1991) and Goroshko (1993).

In particular, after examination of the type specimens of *R. diluta* (Sharpe & Wyatt) in the British Museum (Natural History) collection, at Tring, they confirmed that *R. r. plumipes* Zarudny, 1916, is a synonym of *R. diluta* (Sharpe & Wyatt), and that the name *R. r. innominata* proposed by Zarudny (1916: 36) is the valid name for what Zarudny (1916: 31-34) had called '*R. r. diluta*' [nec Sharpe & Wyatt]. It was emphasized that the original diagnosis of this subspecies, with its smaller size, the coloration of the upper-parts and of the breast-band, and the nature of the tarsal feathering (Zarudny, 1916: 34), requires that the subspecies *innominata* be attached to *R. riparia* (L.) and not to *R. diluta* (Sharpe & Wyatt). Birds from south-eastern Kazakhstan described as southern sand martin *R. r. dolgushini* Gavrillov & Savchenko, 1991, fit this diagnosis and as a result Loskot & Dickinson (2001) placed *R. r. dolgushini* Gavrillov & Savchenko, 1991, in the synonymy: *R. r. innominata* Zarudny, 1916.

Gavrillov (2002) disagreed and made the following important remarks:

1. On average, the wing lengths of *R. r. riparia* (measurements of 36 specimens in Zarudny, 1916: 30-31) and of *R. r. dolgushini* (measurements of 13 specimens¹ in

¹ Gavrillov (2002) erroneously cited 10 specimens.

Gavrilov & Savchenko, 1991, tab. 3, p. 40) do not differ. For this reason *R. r. dolgushini* must be seen as a junior synonym of *R. r. riparia* and the conclusion of Loskot & Dickinson (2001) that *R. r. dolgushini* is a synonym of *R. r. innominata* is "deeply incorrect".

2. *R. r. riparia* ($n = 36$ specimens in Zarudny, 1916) is considerably larger than *R. r. diluta* ($n = 17$ in Zarudny, 1916: 32-33), *R. r. plumipes* ($n = 24$ in Zarudny, 1916: 35) and *R. diluta diluta* ($n = 10$ in Gavrilov & Savchenko, 1991, tab. 3, p. 40). Average wing of *R. r. riparia* is 6 mm longer. The latter three forms do not differ significantly in wing length; therefore *R. d. diluta* = *R. r. diluta* = *R. r. plumipes*. So *R. riparia diluta* of Zarudny (1916) belongs to *R. diluta* (Sharpe & Wyatt), and not to *R. riparia* (L.). This conclusion agrees with the opinion of Peters (1960) and is inconsistent with the above mentioned views of Loskot & Dickinson (2001).
3. Tarsal feathering of *R. riparia* and *R. diluta* is "... a heritage of the ancestral form which had a feathered tarsus". This feathering in part of *R. diluta* is similar to that in *R. riparia*, i.e., it is expressed only as a small tuft above the base of the hind toe (and apparently Gavrilov considered the diagnostic value of this character not to be significant).

Thus Gavrilov (2002) resurrected some questions about the taxonomy and nomenclature of these two sand martins. The questions that require answers are:

1. Which characters most reliably distinguish *R. riparia* from *R. diluta*?
2. Which subspecies of *R. riparia* nest in southern Kazakhstan and Middle Asia?
3. To which species, *R. riparia* or *R. diluta*, do the martins described by Zarudny (1916) as *R. riparia innominata* belong?

Material and methods

Plumage coloration and variation in body dimensions were compared among 118 bird skins from the collections of the Zoological Institute of Russian Academy of Sciences (ZISP: 79 specimens) and Zoological Museum of Moscow University (ZMMU: 39 specimens). The specimens studied belong to *R. diluta* (11 adults and 12 juveniles) from Kazakhstan and Middle Asia, *R. r. riparia* (35 ad. and 12 juv.) from the same area, and *R. r. riparia* (39 ad. and 9 juv.) from Europe. Most birds were collected from June to the beginning of August in their breeding range.

In looking at variation of plumage coloration the following important diagnostic characters were studied:

1. depth of ground colour of upperparts;
2. darkness of breast band, its tint and the sharpness of its borders;
3. throat colour;
4. depth and contrast of colour of the ear coverts;
5. development of light feather-fringes on upperparts and wing and their colour.

Variation of linear measurements was studied using a dial caliper with 0.1 mm precision. Each specimen was characterized by three variables: wing length, tail length and depth of tail fork – the difference in length between the sixth and first rectrices.

The degree of development of tarsal feathering was studied not only in all these 118 specimens but also in sand martins of other subspecies: *R. diluta gavriloovi* (17 specimens

including the holotype and 12 paratypes), *R. d. tibetana* (lectotype and 19 paralectotypes), *R. riparia kolymensis* (23 specimens), *R. r. ijimae* (41 specimens) and *R. r. taczanowskii* (lectotype, four paralectotypes and 11 other specimens). Skins of all these birds are kept in the ZISP collection.

The sand martins described in detail by Zarudny (1916: 29-36), some of which are now kept in the collection of Tashkent State University (TASU), were of special interest for this revision. Unfortunately it was not possible to obtain these skins on loan, but Roman Kashkarov, the curator of the TASU collection, kindly agreed to make the required comparisons. Of the 77 birds², listed by Zarudny (1916), the following are preserved: 32 of 36 specimens of *R. r. riparia*, 12 of the 17 syntypes of *R. r. innominata*, and 11 of the 24 syntypes³ of *R. r. plumipes*. Using my comparison protocol, Kashkarov examined the syntypes of *R. r. innominata* with great care and compared them with *R. r. riparia* and *R. r. plumipes* from Zarudny's collection. This protocol called for the use of all the important diagnostic traits of colour and pattern of plumage, as well as tarsal feathering. The location of small feathers on the hind and inner sides of the tarsus was established by means of a 10 $\times$ magnifying glass. At Kashkarov's request, his assistant Maxim Mitropol'skiy examined the birds independently following the same protocol. The results of his examination, and Kashkarov's, coincided, making the taxonomic and nomenclatural conclusions based on their data more reliable. Kashkarov also took digital photographs showing the main types of variation in coloration in the birds examined (Plate IV).

Diagnostic characters

Plumage coloration

Plumage colour and pattern are most important in diagnosing all forms of sand martins. The brief original description by Sharpe & Wyatt (1893) already contained the two main characters that allow one to distinguish most specimens of *R. d. diluta* easily and reliably from *R. r. riparia*: "Adult male. Similar to *C. riparia* but very much paler brown above and the breast-band also very light brown and overshadowed by ashy, so that the collar is not distinct. Adult female. Similar to the male". These characters also allow one to distinguish Common and Pale Sand Martins in juvenile plumage, though individual variation is greater in this age group than in adult birds.

However, among *R. r. riparia*, especially near the southern boundary of the breeding area, there are individuals with paler upperparts which can not be readily distinguished from the darkest specimens of *R. d. diluta*.

Goroshko (1993: 311) suggested three additional characters of plumage coloration for distinguishing *R. riparia* and *R. diluta*, placing them in order of decreasing significance.

1. The border between ear coverts and throat is distinct in *R. riparia* and less clear in most *R. diluta*.

² Loskot & Dickinson (2001, p. 169) erroneously gave 87 specimens.

³ Loskot & Dickinson (2001, p. 169-170) erroneously gave 34 birds.

2. The ear coverts are slightly lighter than the crown, with a brownish tint in *R. riparia*, and much lighter than the greyish crown in *R. diluta*.
3. The small (outermost) primary is dark and of the same or nearly the same colour as the outer vane of the second primary in *R. riparia*; it is much lighter in *R. diluta*.

Goroshko (1993: 313) also mentioned differences in throat colour, which is pure white, with a yellow tint in some *R. riparia*, and often greyish in *R. diluta*.

The above-mentioned characters are usually well expressed in specimens of both species with typical coloration. But in such cases the two taxa can be easily differentiated by the colour of their upperparts and breast-bands. These additional characters are not so useful for identifying paler *R. riparia* and darker *R. diluta* individuals, as the intensity of pigmentation changes in the all parts of plumage including those mentioned by Goroshko. In addition, Goroshko (1993: 313) himself noted the considerable individual variation of all these characters (save the first).

When describing the geographical variation, some authors have mentioned a cline of paling of plumage coloration from north to south in *R. r. riparia* (Vaurie, 1951, 1959; Cramp, 1988; Gavrilov & Savchenko, 1991; Goroshko, 1993). Gavrilov & Savchenko even treated paler (and smaller) birds from south-eastern Kazakhstan as distinct and named them *R. r. dolgushini*. However, I have not discovered any essential differences in plumage coloration between *R. riparia* from Kazakhstan and Middle Asia and from Europe (for sample sizes see Table 1). The upperparts and breast-bands in southern Asiatic birds are as dark as in northern European sand martins. For example, a female, ZMMU No. R – 42975, collected 10 June 1935 from a breeding colony on the Murgab River near Iolotan', Turkmenistan ⁴ (wing length 104.9 mm), does not differ in plumage from birds nesting near St. Petersburg.

The southern breeding boundary of *R. r. riparia* in the southern Transcaspian region remains unclear. It may run along the northern foothills of the eastern Elburz, Kopetdagh and Paropamis Mts. Paler sand martins of the southern subspecies *R. r. innominata*, which will be considered below, may occur there.

Dimensions

Variation in the three traditional dimensions is set out in Table 1 for the six groups of birds mentioned under Methods. Since it is well known that differences in size between the sexes of sand martins are not significant (Cramp, 1988; Gavrilov & Savchenko, 1991; Goroshko, 1993) sex is not here taken into consideration.

The data concerning variation in size by age are somewhat contradictory. Cramp (1988) considered the juvenile wing, tail and tail fork to be significantly shorter than adult ones. Gavrilov & Savchenko (1991) found that adults of *R. riparia riparia*, *R. diluta diluta* and *R. diluta* from Middle Siberia (*R. d. gavrilo*) are significantly ($p < 0.001$) heavier than juvenile birds, but only the juveniles of *R. r. riparia* (not juveniles of *R. diluta*) appeared to have a shorter wing. My investigation shows that the juvenile tail is

⁴ Goroshko (1993) erroneously included this locality in the Pamir Mts., where this bird does not nest.

Table 1. Summary statistics for measurements (in mm ± standard error)) of the adult and juvenile *Riparia diluta diluta* and *R. riparia riparia* from various parts of their breeding areas.

Taxon	Variable		
	Wing length	Tail length	Tail fork
<i>R. d.diluta</i> ad	101.16 ± 1.95, n = 11 98.1 – 104.1	48.45 ± 2.08, n = 11 45.7 – 52.5	5.49 ± 0.80, n = 11 3.8 – 6.5
<i>R. d. diluta</i> juv	99.78 ± 2.26, n = 12 96.1 – 104.8	46.23 ± 1.35, n = 12 44.7 – 48.8	5.60 ± 1.17, n = 12 3.7 – 7.4
<i>R. r. riparia</i> ad	106.38 ± 2.61, n = 35	53.84 ± 2.45, n = 35	9.17 ± 1.78, n = 35
Kazakh. & Mid. Asia	100.8 – 110.6	47.8 – 59.1	5.1 – 12.9
<i>R. r. riparia</i> juv	103.30 ± 2.54, n = 12	49.38 ± 1.69, n = 12	6.69 ± 0.91, n = 12
Kazakh. & Mid. Asia	98.9 – 106.9	45.7 – 51.6	5.0 – 8.3
<i>R. r. riparia</i> ad Europe	106.31 ± 2.26, n = 39 101.7 – 111.2	53.45 ± 2.27, n = 39 47.2 – 56.9	9.25 ± 1.69, n = 39 6.0 – 12.2
<i>R. r. riparia</i> juv Europe	102.08 ± 3.62, n = 9 96.6 – 108.4	47.91 ± 2.81, n = 9 44.2 – 52.4	6.13 ± 1.57, n = 9 4.3 – 8.4

also shorter than that of adults ($p < 0.001$ or 0.01) in all three groups examined (*R. d. diluta* and *R. r. riparia* from Kazakhstan and Middle Asia, and from Europe), but wing and tail fork are shorter than in adults only in the two groups of juveniles of *R. r. riparia* ($p < 0.001$), not in *R. d. diluta* (Table 1).

Goroshko (1993) placed tail fork as fifth among important diagnostic characters of *R. riparia* and *R. diluta*: the tail fork depth is usually larger than 7 mm in *R. riparia* and smaller than 7 mm in *R. diluta*. But he noted the considerable individual and geographic variation of this character. The data in Table 1 show that, on average, the depth of fork in adult *R. d. diluta* is significantly shorter than in *R. r. riparia* ($p < 0.001$), but in juveniles these differences in fork depth are not so strongly pronounced ($p < 0.01$). The extreme values of this character overlap widely, hence its diagnostic importance is not great. It can be noted only that birds with a fork depth larger than 8 mm most likely belong to *R. r. riparia*, and not to *R. d. diluta*.

On average, the wing, tail and fork in *R. d. diluta* are shorter than in *R. r. riparia* (Table 1), which confirms the well known smaller size of *R. d. diluta* (Zarudny, 1916; Meklenburzev, 1954; Cramp, 1988; Gavrilov & Savchenko, 1991; Gavrilov, 2002). But even when the largest (nominate) subspecies of *R. riparia* is compared with the smallest subspecies of *R. diluta* (*R. d. diluta*), most birds fall within zones of overlap in size: 37 of 70 birds (53%), in wing length and 44 of 70 (63%) in tail length. (Fig. 1). It can be noted only that birds with wings longer than 105 mm most likely belong to *R. r. riparia* and not to *R. d. diluta* (Table 1). Moreover, in larger northern and eastern subspecies of *R. diluta* the wing is longer than in the nominate subspecies. The maximum wing length reaches 109.3 mm in *R. d. gavrilo* (Gavrilov & Savchenko, 1991), 108 mm in *R. d. transbaycalica*, and 110 mm in *R. d. tibetana* (Goroshko, 1993, p. 319). Thus, the zone of overlap in extreme values of wing length in *R. riparia* and *R. diluta* is exceedingly wide, and the diagnostic value of this character is low. The data for specimens of *R. r. riparia* from Kazakhstan and Middle Asia when compared with birds from Europe show their similarity in all three characters studied (Table 1). These data do not support suggestions of a mainly clinal southward decrease in size in *R. r. riparia* (Cramp, 1988; Gavrilov & Savchenko, 1991; Goroshko, 1993), and they fit with Gavrilov’s conclusion that sand

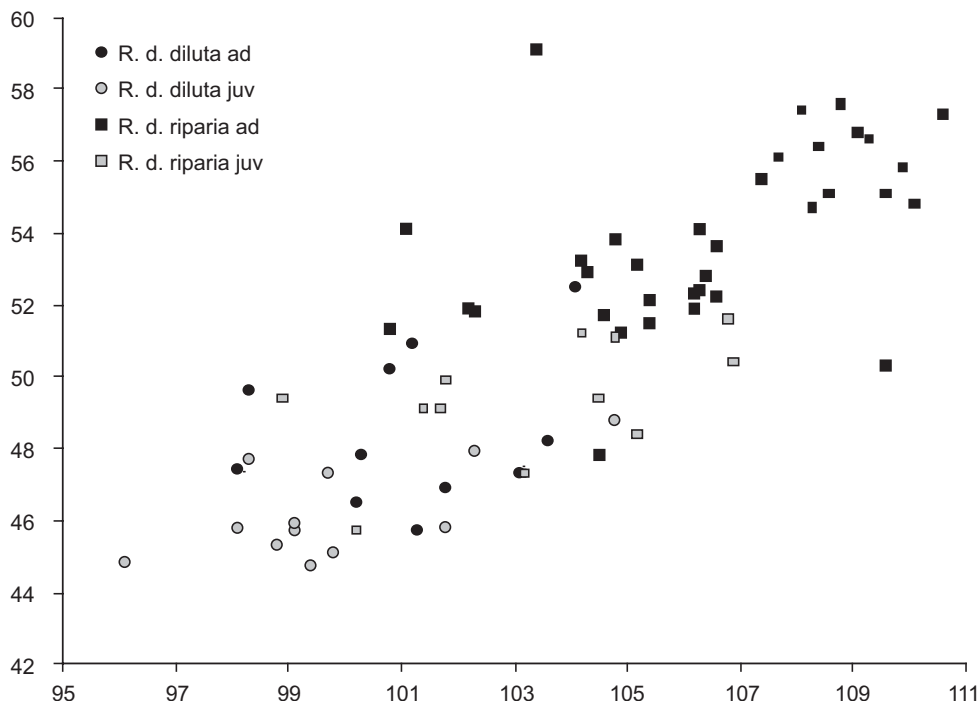


Fig. 1. Size-distribution (mm) of *Riparia diluta diluta* ($n = 23$) and *R. riparia riparia* from Kazakhstan and Middle Asia ($n = 47$), based on wing (basal axis) and tail (left hand axis) lengths.

martins from south-eastern Kazakhstan (*R. r. dolgushini*) do not differ in wing length from *R. r. riparia* (Gavrilov, 2002).

Tarsal feathering

Zarudny (1916) was the first to notice the difference in the degree of development of tarsal feathers in various forms of sand martins, and described the subspecies *R. r. plumipes* (rough-legged sand martin). His 24 specimens had "abundant feathers on the hind and inner sides of the tarsus, the feathers extend from the upper part of the base of the hind toe to the ankle joint where they merge with the feathers of the fibula, either continuously or leaving a small bare area usually in mid tarsus" (Zarudny, 1916: 34). The tarsus of the lectotype and paralectotype of *R. diluta* turned out to have similar feathering (Loskot & Dickinson, 2001). By contrast, in *R. riparia* the "feathers of the tarsus form only a small tuft above the base of the hind toe" (Zarudny, 1916: 34). Goroshko (1993: 310, fig. 7) illustrated this essential difference in tarsal feathering of *R. diluta* and *R. riparia*, but placed these characters only in last (sixth) place in his list of important diagnostic traits (op. cit. p. 311, table 3). Gavrilov (2002) did not consider tarsal feathering to be an important diagnostic trait.

Examining the small tarsal feathers on dry museum skins is not easy. The feathers of the belly often cover the short tarsi (about 10 mm), to which one or two museum la-

bels may be tied. In skins stored for long periods of time, damage to, or even loss of, some tarsal feathers may occur, especially in the middle part of the tarsus.

Despite these difficulties, it is usually possible to examine the tarsal feathering on at least one tarsus by means of a 10^x magnifying glass. The examination of this character in 60 specimens of three subspecies of *R. diluta* (*R. d. diluta*, *R. d. gavrilovi*, *R. d. tibetana*) and in 175 specimens belonging to four subspecies of *R. riparia* (*R. r. riparia*, *R. r. kolyomensis*, *R. r. ijimae*, *R. r. taczanowskii*) showed that every specimen could be identified at the species level. Characters of species in respect of difference in tarsal feathering are already distinctly expressed in nestlings of 7-12 days age (ZISP, *R. r. riparia*: Nos 65607 and 65608/187-950; *R. d. gavrilovi*: Nos 115870-115872).

In some specimens of *R. riparia*, one or two small feathers may be present above the feather tuft near the base of the hind toe, but these never reach the middle of the tarsus, and the upper half of the tarsus always remains bare. This examination has not revealed significant individual or geographic variation of the character as was suggested by Goroshko (1993: 313). Thus, after plumage colour, tarsal feathering is one of the most important diagnostic characters.

To conclude, the analysis of morphological variation presented here indicates that the combination of the following characters is most useful for differentiating *R. riparia* and *R. diluta*: the colour of upperparts and of the breast-band, the contrast of the breast-band, and the nature of tarsal feathering.

A revision of Zarudny's material

Among 77 sand martins from Russian Turkestan, Zarudny (1916) assigned the 36 darkest and largest birds with a small tuft of feathers above the hind toe to *R. r. riparia*. Another series including the 24 palest and smallest birds with "abundant feathers on the hind and inner sides of the tarsus" were described as a new subspecies: the rough-legged sand martin, *R. r. plumipes*. These latter birds without doubt belong to *R. d. diluta* (Hartert & Steinbacher, 1935; Loskot & Dickinson, 2001).

Birds with plumage coloration and size intermediate between *R. r. riparia* and *R. r. plumipes* were assigned by Zarudny to *R. r. diluta* (Sharpe & Wyatt). It should be emphasized that Zarudny had no access to the *Monograph on the Hirundinidae* by Sharpe & Wyatt (1893) and used the diagnosis of *Cotile diluta* from Bianchi (1907) who wrote that the individual variation of plumage coloration in *R. riparia* is so considerable "that *C. diluta* does not deserve to be separated . . . even as a subspecies". Menzbier (1914) apparently agreed with that view, and *R. diluta* (or *R. r. diluta*) was not included in his list of the birds of Turkestan.

Zarudny (1916) disagreed. He thought that the birds described by Sharpe & Wyatt formed a "clear subspecies" abundant at breeding time in the region of Amudarya (Bukhara possessions) and Syrdarya rivers. From *R. r. riparia* these birds differed in their smaller size and "in the greater paleness and greyer tone of coloration of the upperparts, and in the more greyish tint of the breast-band which is not so very clear-cut in most birds". But these birds were similar to *R. r. riparia* in having "feathers on the tarsus forming only a small tuft above the base of the hind toe". Zarudny italicized this part of his diagnosis, considering it particularly important. It should be noted here that

this diagnosis is somewhat contradictory as it includes characters of both *R. riparia* and *R. diluta*.

Later, Zarudny (in Bil'kevich & Zarudny, 1918) changed this diagnosis somewhat. He identified as this subspecies three females collected in the Bol'shoy Balkhan Mts., near Ashkhabad (Bagir) and Geok-Tepe. These were birds of middle size or rather larger, with wing length 102.0, 106.3, and 108.5; tail length 53.0, 54.7, and 56.0 mm, with "tarsal feathering expressed by a tuft of feathers above the hind toe. The coloration was paler than in European *R. riparia riparia*; the breast-bands clear-cut". According to this diagnosis, *R. r. diluta* of Zarudny differs from *R. r. riparia* only in its paler colour. The other characters mentioned (tarsal feathering, contrast of breast-band, and size of at least two specimens) show that these birds belonged to *R. riparia*, and Dement'ev (1952) correctly assigned them to this species.

When *R. r. plumipes* Zarudny was ultimately synonymized with *R. diluta*, the name *R. r. innominata* proposed by Zarudny (1916: 36) became the valid name for what Zarudny had incorrectly called *diluta* (see Loskot & Dickinson, 2001), and hereafter I shall use *innominata* only.

Gavrilov (2002) synonymized *R. riparia innominata* with *R. diluta diluta* based only on the similarity of their wing length, disregarding the distinct characters of *R. riparia* which were present in the descriptions by Zarudny (1916) and by Bil'kevich & Zarudny (1918) of *R. r. innominata*. Thus, according to Gavrilov, Zarudny (1916) had described birds belonging to the same subspecies (*R. diluta diluta*) under two different names: *R. riparia innominata* and *R. riparia plumipes*.

The contradictory original diagnosis suggests that the type series of *R. r. innominata* is a mixed one and consists of birds belonging to *R. riparia* and *R. diluta*. This is already apparent from the list of syntypes in Zarudny (1916: 32-33). Most birds of this list (12 of 17) were said to be adults⁵; five of them (Nos 1, 2, 6, 7, 10, 13) were collected from 21 April to 1 May⁶ near Tashkent, Keles and Chinari, and one female (No 5) also near Tashkent on 31 August. The dates of collecting do not rule out that some were migrants, and the large size of two males (Nos 1, 2), with wing length 106.0 and 105.6 mm, show that these were more likely to belong to *R. riparia* than to *R. diluta*.

Eleven other birds were collected at their breeding sites: not more than three adults and not less than six juveniles, from 21 June to 17 August in south-western Tajikistan, and two birds (ad. and juv.), in June, in eastern Iran.

The examination of 12 syntypes⁷ of *R. r. innominata* performed by R. Kashkarov and M. Mitropol'sky confirmed my expectation that the type series included birds of different species.

Characters of the tarsal feathering and plumage coloration allowed ad. No 17 and juv. Nos 3, 4, 8, 15 to be identified as *R. riparia*; and ad. Nos 5, 9, 11, 12 and juv. No 16 are

⁵ Actually, there are no more than 10 adults. Digital pictures of upperparts of six specimens of *R. r. innominata* and two of *R. r. riparia* demonstrate that three of them (Nos 4 and 8 in Zarudny's list of *R. r. innominata* and No 29 in the list of *R. r. riparia*) are juveniles, not adults. All three of Zarudny's lists may contain erroneous determinations of age.

⁶ Zarudny used the Julian Calendar (for details see Loskot & Dickinson, 2001).

⁷ Five of 17 syntypes, adults mentioned above and collected in spring, are not now held at TASU.



Pl. IV. Variation of coloration and contrast of breast-band in birds from three samples of Zarudny (1916). Left to right: juvenile and adult *R. r. riparia* Nos. 29 and 1; juvenile *R. r. innominata* Nos. 3, 15; adult *R. r. innominata* Nos. 9, 11; juvenile *R. r. plumipes* Nos. 21 and 16.

identifiable as *R. diluta*. Because of the poor condition of the skins, however, juvenile birds Nos 6 and 14 could not be identified to species.

Plate IV illustrates variation of coloration and contrast of breast-band in eight birds (TASU, Nos 11531, 11534, 11578, 11577, 11586, 11585b, 11572, 11567) from three samples of Zarudny (1916). The first two birds, juv. No 29 and ad. No 1, were said to belong to *R. r. riparia*; the third to sixth birds, juv. Nos 3, 15 and ad. Nos 9 and 11, to *R. r. innominata*; and the seventh and eighth birds, juv. No 21 and 16, to *R. r. plumipes*. The breast-bands of the third and fourth sand martins are no less dark than those of the first and second ones, and are noticeably darker than in the fifth and sixth ones which are very similar to the seventh and eighth ones. So, recalling that *plumipes* is a synonym of *R. diluta*, it is apparent that the third and fourth birds belong to *R. riparia* and the fifth and sixth birds to *R. diluta*.

The discovery that the type series of syntypes of *R. r. innominata* contains representatives of two different species requires the designation of a lectotype. Based on Zarudny's descriptions of this subspecies (Zarudny, 1916; Bil'kevich & Zarudny, 1918) I select specimen No. 17 in the list of syntypes and designate this as the lectotype.

Lectotype details: "Female, ad, Dzhelalabad (Seistan), 17 [30]⁸. VI. 1901" N. Zarudny (TASU, No 11581). Wing length 99.2 mm, tail length 47.0 mm; tail fork 6 mm (measurements of Zarudny).

This bird is similar to *R. r. riparia* but differs in having paler upperparts. The breast-band is as in *R. r. riparia*: dark brown, without grayish tint, clear-cut and obviously darker than in *R. d. diluta*.

⁸ 17 was the date in the Julian calendar; 30 is its equivalent in the Gregorian calendar.

The breeding area of *R. r. innominata* is situated mainly in Iran. The birds from Luristan (vicinity of Borudjerd) which Vaurie (1951) considered "intermediate between *diluta* and nominate *riparia*" belong to this subspecies, as well as the six Iranian *R. riparia* from the British Museum (Natural History) (Tring) examined by Goroshko (1993: 315).

The subspecies determination of the remaining four paralectotypes identified as *Riparia riparia* needs further investigation. Among them, TASU Nos 11578, 11584, 11580, 11577; (juv. Nos 3, 4, 8 and 15 in Zarudny's list) may be paralectotypes of *R. r. innominata*, as well as paralectotypes representative of *R. r. riparia*.

Paralectotypes certainly not representative of R. r. innominata:

Riparia diluta diluta: ad. Nos 5, 9, 11, 12 and juv. No 16 in Zarudny's list (TASU Nos 11579, 11586, 11585 b, 11582, 11574).

As only 12 of 17 type specimens of *R. r. innominata* Zarudny, 1916 in TASU were examined the other five, if they can be found, should be re-evaluated.

Overall, this re-investigation of the taxonomy and nomenclature of these two species of sand martins seems to answer the critical remarks of Gavrilov (2002). It is possible that one of the reasons that Gavrilov, already perhaps confused by composite descriptions, considered *R. r. innominata* as a junior synonym of *R. d. diluta*, is that *R. r. innominata* does not breed at all in Kazakhstan and may occur in Middle Asia only in its most southern parts.

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