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I. E Harting

1868.

A Monograph of the TRINGEÆ of North America.

BY ELLIOTT COUES.

In the latter part of 1860, during the examination at the Smithsonian Institution of an extensive and valuable collection of birds made by Messrs. Robert Kennicott and Bernard R. Ross in the vicinity of Great Slave Lake and McKenzie's River, my attention was directed to a Sandpiper, nearly allied to *Actodromas maculata* and *Bonapartei*, but differing from both in many important features. Subsequent examination having proved it to be without doubt distinct from these, or any other North American Sandpipers, I was authorized by the Secretary of the Institution to describe and name it. To do so properly, necessarily involving a somewhat extended study of the North American Sandpipers, I was induced to undertake a monographic sketch of the section, as well as of the particular genus to which the new species belongs.

In the following pages it has been attempted to present the leading features of the group; to give the diagnosis of the several genera and species, with a detailed description when such appeared necessary; together with the synonymy of each species and a discussion of doubtful points of nomenclature and affinity. In how far, however, this aim has been accomplished, must be left for others to judge.

It is with great diffidence that on some points I dissent from such high authority as that of the author of the *Tringæ* in the General Report; but when compelled to do so, the reasons are fully stated, which, it is hoped, will be found satisfactory.

To Professor Henry, Secretary of the Smithsonian Institution, my grateful acknowledgments are due for the opportunity of examining at leisure the entire Smithsonian collection of Sandpipers, and also for access to those works necessary to the compilation of the list of synonyms. The references have all been personally made and verified, except in a few cases for which the authority is given. Though the list is necessarily incomplete, it is believed that no important synonym is omitted. Should, however, errors be detected in this or in any other portion of the article, it is hoped that they will be found to be others than those of negligence or carelessness.

By many modern ornithologists the Sandpipers are considered as a subfamily *Tringinæ* of *Scolopacidae*, equal in rank to the *Scolopacinae* and *Totaninae*. But the relationships of the two former in all essential points are very intimate, and the transition from the one to the other, through such genera as *Macroramphus* and *Micropalama*, very gradual, while at the same time the differences from the *Totaninae* are marked and decided. In view of these considerations, it may be more natural to consider the Sandpipers as a section of *Tringæ* of equal rank with *Scolopaceæ*, uniting both under the subfamily *Scolopacinae*. Upon this basis the different groups may be distinguished by the following brief characters, taken chiefly from the General Report.

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Family *SCOLOPACIDÆ*.

Bill variable in length, but at least as long as the head, grooved to beyond the middle. Legs with transverse scutellæ before and behind, (except in *Numenieæ*.) Toes not broadly margined to the tips, with or without a basal web. Hind toe generally present.

*Scolopacinae*. Bill covered with soft skin to the sensitive, vascular, usually more or less laterally expanded tip. Gape of mouth very small, not extending beyond the base of the culmen. Bare portion of tibiae short. Legs generally rather short and stout. Toes usually cleft to the base. Body stout, neck rather short.

*Totaninae*. Bill covered with soft skin only towards the base, the terminal portion being hard, horny, and usually unexpanded and attenuated. Gape of mouth considerable, extending beyond the base of the culmen. Tibiae bare for a considerable distance. Legs slender and lengthened. Toes usually with a basal web.

Subfamily *SCOLOPACINÆ*.

*Scolopaceæ*. Bill much longer than the head or naked leg, extremely sensitive. Upper mandible with a longitudinal furrow near the end, and its tip thickened and bent down over the lower. Roof of mouth not excavated to the tip. External ear beneath or anterior to the eye. Tail usually banded.

*Tringæ*. Bill shorter than the naked leg, the tip less sensitive than in the preceding, more or less laterally expanded, but not thickened. Roof of mouth excavated to the tip. Culmen without a decided longitudinal groove. External ear posterior to the eye. Tail usually without bands.

The preceding diagnoses indicate, in a general way, the principal characters of the several groups, and distinguish the *Tringæ*. The latter, at least as far as North American forms are concerned, may be thus more definitely characterized.

The bill is straight or slightly decurved, at least as long as the head, and sometimes considerably exceeding it; rather slender, usually more or less compressed, seldom much depressed. The tip is usually more or less expanded, and sensitive and vascular, that of the upper mandible bent a little over that of the lower. The grooves in both mandibles extend to the expansion of the tip; that of the upper is much the widest, but both are deep and distinct. In some genera there are decided indications of a longitudinal furrow on the culmen near the end. The nostrils are linear, pervious, very narrow, situated in the sinus of the upper mandible, usually very near its base, but sometimes considerably advanced. The angle formed by the rami of the lower jaw is very small, the enclosed space being long and narrow, and the groove marking the line of union of the rami usually extending about two-thirds the length of the bill, but sometimes nearly to the tip. The extent of the encroachment of the feathers on the bill varies in the different genera; but, except perhaps in *Ancylochenus*, it is always greater between the rami than on the sides. The wings are long, pointed and powerful; the first primary is usually the longest, but the second is nearly, sometimes quite, equal to it. The rest are all rapidly graduated. The secondaries are very short and inconspicuous. The edge of the outer vane is obliquely incised at the extremity. The tertials are usually long, slender and tapering, sometimes nearly equaling the primaries in length. The tail is rather short, usually doubly emarginate, the central feathers pointed, and projecting somewhat beyond the others. The legs and feet vary greatly in their character in the different genera, always, however, being constant in each. Except in *Arquatella* and *Tringa*, the tibiae are always exposed for a considerable portion of the length of the tarsus, and in those genera the bare portion is considerable. Except in *Arquatella*, *Actodromas*, and perhaps *Ereunetes*, the tarsus is always decidedly

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longer than the middle toe and claw. The toes are usually long and slender, more or less margined at the sides, and flattened underneath; free at the base, or with a very rudimentary membrane, except in *Micropalama* and *Ereunetes*. The lateral are nearly equal to the middle, the outer slightly longer than the inner. The hind toe is present, except in *Calidris*. The claws vary considerably in length, acuteness and amount of curvature, but they are always dilated on the inner edge.

With respect to coloration, the *Tringae* of North America, with scarcely the exception of *Arquatella maritima*, present a general similarity in the pattern and disposal of the markings of most of the parts. The feathers of the upper parts have their centres very dark, and are margined with some shade of reddish, yellowish, or white, the color being deepest on the scapulars. The primaries are uniformly deep dusky, without spots or bars, and are darkest at the tips and on the outer vanes. The shafts of all are white for some portion, usually the central. The secondaries are ashy-gray, bordered to a greater or less extent with white. The central tail feathers are usually considerably darker than the lateral; but neither show any approach towards the transverse bars so universal among the *Scolopaceæ* and *Totaniceæ*. Any attempt, however, at a generalization of the color of the under parts seems impossible, since, as will be seen in the diagnoses of the species, they are found of very various patterns and colors.

The species inhabiting North America are divisible into eight well-marked genera, among which are comprised nearly all the more important ones, though some, such as *Eurinorhynchus* and *Limicola*, have no representatives. The most extensive of these, *Actodromas*, seems to contain two well-marked groups, at least sub-generically distinct. Each of the others comprises but a single admitted North American species; and of some, such as *Tringa*, *Arquatella*, and *Ancylochenius*, but one species is at present known. The characters of the most importance among the *Tringae* seem to lie in the legs. The proportions of tibia, tarsus and middle toe, and their relations to the bill, readily characterize definitely the groups. They are also the most constant, being subject to very little variation in each species. This is as might be expected, from their radical nature, since the most important and essential character in any group should be the least subject to variation. The bill, on the other hand, differs much in length in the same genus or species; it reaches its maximum of variation in *Ereunetes*, and is most constant throughout the genus *Actodromas*. The wings and tail vary somewhat, but within very narrow limits.

The North American genera of *Tringae* may be readily characterized by the proportions of bill, tarsus and toe, without reference to the tail or wings, though these of course furnish additional characters. The following schedule, in which the characters are purposely made as brief as possible, will serve to define the genera as adopted.

#### *Synopsis of Genera.*

##### A. Toes with a decided basal web.

Bill equal to tarsus, both very long; exposed portion of tibia equal to middle toe, which is not quite two-thirds the tarsus,

*Micropalama*.

Bill equal to tarsus, both moderate; tibia exposed for two-thirds the middle toe, which nearly equals the tarsus,

*Ereunetes*.

##### B. Toes cleft to the base, or with a very rudimentary membrane.

###### I. Bill longer than the tarsus.

1. Bill straight; tibia moderately or scarcely at all exposed.

Tarsus longer than the middle toe, hind toe present, *Tringa*.

As in *Tringa*; hind toe absent, *Calidris*.

Tarsus shorter than the middle toe, *Arquatella*.

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2. Bill decurved ; tibia much exposed.  
 Bill compressed ; legs long, slender ; middle toe  
 not quite three-fourths the tarsus, *Ancyclocheilus.*  
 Bill depressed ; legs moderate, stout ; middle toe  
 nearly or about equal to tarsus, *Pelidna.*
- II. Bill equal to the tarsus.  
 Tarsus equal to middle toe, *Actodromas.*

The most natural succession of the genera appears to be that presented above, viz.: *Micropalama*, *Ereunetes*, *Tringa*, *Calidris*, *Arquatella*, *Ancyclocheilus*, *Pelidna*, *Actodromas*. *Micropalama*, in its long, slender, sensitive bill, somewhat furrowed culmen and digital web, seems to form the natural connecting link between *Scolopaceæ* and *Tringæ*, through *Macroramphus*. *Ereunetes* is next most closely allied, having also the membrane to the toes ; but here the bill and feet are shortened, and have nearly the proportions of *Tringa*, which most naturally succeeds. *Calidris* is in all essentials like *Tringa*, except the absence of the hind toe. In *Arquatella* the bill is sometimes very slightly decurved ; in *Ancyclocheilus* and *Pelidna* it is successively more so. In the latter the middle toe becomes nearly or quite equal to the tarsus, opening the way for *Actodromas*, where the slender, attenuated bill, and much denuded tarsus, seem to lead directly to the *Totaninae*.

If so great a subdivision of the *Tringæ* as is here presented be objected to, it is replied that the variations in external form are so great that a single genus, in the modern acceptation of the term, cannot contain them all ; and if more than one genus be adopted for those with fully-cleft anterior toes, it is not easy to stop short of the number here adopted. Ornithologists have indeed perceived how unnatural was the association of all the species under *Tringa*, and at different times, some of them very early, names have been proposed for all the groups. As early as 1800, the absence of the hind toe caused *Calidris* to be separated ; and, in 1811, the webbed feet of *Ereunetes* were made the grounds of generic distinction. *Pelidna* of Cuvier, instituted in 1817 for the slender-toed smaller Sandpipers, was a further attempt at division ; but that genus, as left by its author, still contained species very dissimilar ; and, in 1829, *Ancyclocheilus* and *Actodromas* were characterized. The great peculiarities of *Tringa himantopus* Bon. caused it, soon after its first discovery, in 1828, to receive subgeneric distinction from *Tringa*. It was not, however, till 1858, that *Arquatella*, a peculiar form, was characterized. But while in other groups, particularly among the smaller land birds, the divisions have been minute and greatly extended, there seems to have been a general reluctance on the part of ornithologists with regard to recognizing these divisions. It may be that in this group Nature allows more external variation in forms very closely allied than is usual ; but until this is proved to be the case, it seems necessary, to keep pace with the progress of ornithology, to consider the characters of the different sections as of full generic value.

Having, it is thought, dwelt sufficiently upon the general features of the group, we proceed at once to characterize the different genera and species.

#### MICROPALAMA Baird.

*Hemipalama*, Bonaparte, Syn. 1828, 316. *Typus Tringa himantopus*, Bon. nec Bon. Obs. Wils. 1825. (*Typus T. semipalmata*, Wils.)

*Micropalama*, Baird, Gen. Rep. 1858, 726. *Typus T. himantopus*, Bon.

*Char.* Bill long, equalling the tarsus, straight or very slightly decurved, slender, very much compressed, tip much expanded and vascular for some distance. Culmen on the terminal half depressed, with two rudimentary, longitudinal furrows. Groove on the lower mandible narrow and indistinct. Wings moderate, pointed, first primary a little the longest. Tail of twelve 1861.]

feathers, short, nearly even or slightly doubly emarginate, the central feathers projecting but little. Legs very long; tarsus equal to the bill; exposed portion of tibia equal to middle toe, which is not quite two-thirds the tarsus. Toes with a decided basal membrane; flattened beneath, but only moderately margined. Hind toe well developed. Body slender; neck long.

A marked and very peculiar genus of Sandpipers, of which the most characteristic feature, in addition to the long compressed bill, is the remarkable elongation of the tibia and tarsus. The former is exposed for fully the length of the middle toe, and is bare for a tenth of an inch or more further. The tibial feathers are very short. The tarsus is nearly a third longer than the middle toe. The basal membrane of the toes, which, though much emarginated, is very considerable and decided, is greatest between the outer and middle toe, where it extends to the first joint. The wings and tail are moderate, and present no special peculiarities.

In the lengthened sensitive bill, basal membrane of the toes, and some other characters, *Micropalama* seems to have a close affinity to *Macroramphus*, and in a measure to connect by means of that genus *Scolopaceæ* and *Tringæ*, possessing, nevertheless, all the distinguishing features of the latter section. Among the *Tringæ* it comes nearest to *Ereunetes*, which has the basal web and the same relative free portion of bill and tarsus. The other characters, however, are widely different.

*Hemipalama* was proposed by Bonaparte in 1825 as a subgenus for the *Tringæ semipalmata* of Wilson, but was subsequently used for the present bird. But as the generic characters are very different, the name cannot be used in this connection. *Micropalama* of Baird has as its type the *T. himantopus* of Bonaparte, and is the name which should be employed.

**MICROPALAMA HIMANTOPUS, (Bon.), Baird.—Stilt Sandpiper.**

*Tringa himantopus*, Bonaparte, Ann. N. Y. Lyc. ii. 1826, 157, [fide Gen. Rep.] Lesson, Manual Ornith. 1828, ii. 284. Swainson, F. B. A. 1831, ii. 380. Bonaparte, Am. Orn. 1833, iv. 89, tab. 25, fig. 3. Audubon, Orn. Biog. 1838, iv. 332, tab. 344; Id. Syn. 1839, 235; Id. Birds Amer. 1842, v. 271, tab. 334. Giraud, Birds L. I. 1844, 232.

*Tringa Douglassii*, Swainson, F. B. A. 1831, ii. 379, tab. 66.

*Tringa (Hemipalama) Douglassii*, Nuttall, Man. Orn. 1834, ii. 141, [cum fig.] *Tringa (Hemipalama) himantopus*, Bonaparte, Spec. Comp. 1827, 61; id. Syn. 1828, 316. Nuttall, Man. Orn. 1834, ii. 138.

*Tringa (Hemipalama) Audubonii*, Nuttall, Man. Orn. 1834, ii. 140, [juv.]

*Hemipalama himantopus*, Bonaparte, Comp. List. 1838, 49. Dekay, N. Y. F. 1844, 235, tab. 86, fig. 196.

*Hemipalama multistriata*, "Licht." Gray, Genera, 1849, iii. 578.

*Totanus himantopus*, Lambeye, Av. Cubae, 1850, 95.

*Micropalama himantopus*, Baird, Gen. Rep. 1858, 726.

*Sp. Char.* Bill much longer than the head, very slightly decurved, much compressed; the tip flattened, expanded, punctulate. Wings moderate or rather long, first primary longest, the rest successively more rapidly graduated. Tail rather short, slightly doubly emarginate, the central feathers projecting but little. Legs very long; exposed portion of tibia equal to middle toe, which is two-thirds the tarsus. *Adult in spring*.—Upper parts very dark brownish black, deepest on the scapulars, each feather edged and tipped with white, light yellowish or reddish, which on the scapulars makes two or three deep indentations. A dusky line from bill to eye, and a light one over the latter to the occiput. Auriculars, and a continuous line beneath and in front of the eye, light chestnut red. A broad stripe of bright chestnut on each side of the occiput, confluent on the nape. Rump dusky; upper tail coverts white, transversely barred with wavy lines of deep dusky. Primaries deep dusky, the tips blackish. Tail ashy grey, central feathers scarcely darker, the mar-

gins of all and a central field along the shaft white. Under parts white, the throat and jugulum streaked, and the other parts thickly and uniformly waved with transverse dusky bars, bordered with light reddish. Bill, legs and feet, dark greenish black. *Young.* Upper parts a uniform light greyish ash, the blackish feathers appearing at intervals; these and the dusky scapulars and wing coverts bordered with white. Upper tail coverts white, scarcely marked with dusky. Primaries as in the adult. Under parts white, the jugulum with an ashy suffusion, and obsoletely streaked. Slight traces of the reddish auriculars. Bill dusky black, legs and feet light greenish yellow.

Length 9·25, extent 16·75, wing 5·1, tail 2·3. Tarsus 1·6, middle toe 1, tibia exposed 1 inch.

*Habitat.*—North America, east of the Rocky Mountains.

The preceding diagnosis would characterize the species sufficiently well for ordinary purposes; but in view of the uncertainty whether there are not two or more species to be enumerated as inhabitants of North America, a somewhat more extended description may not be considered unnecessary. The following is taken from a very perfect male from Great Slave Lake in spring plumage; and the description of the supposed young is from a specimen from the Red Fork of the Arkansas.

The feathers extend on the lower mandible nearly in the form of a right angle, their upper outline being about parallel with the culmen, to a distance beyond those on the upper equal to half the distance of those between the rami. The crown of the head is blackish, streaked with white and with reddish. An ill-defined light line over the eye commences about half way between the eye and bill, and extends to the occiput, widening posteriorly. There is a dusky line between the eye and bill. The auriculars are light chestnut red, which color extends as a line beneath and before the eye to the white stripe above; interrupted by this, it commences above the stripe and passes over the side of the occiput to the nape, where it is confluent with the one on the opposite side. The hind neck is simply streaked with dusky and whitish. The middle of the back is black, each feather edged and tipped with light yellowish, which encroaches upon the central black in two or three irregular indentations. On the scapulars the edgings are tinged with reddish, and the indentations are more numerous and regular. The long tertials are blackish, evenly edged with chestnut passing into whitish at the tip. All the feathers of the back have a greenish gloss. The secondaries and greater coverts are light ashy edged with white, the lesser coverts darker with light borders. The primaries are dusky, their tips black, the shaft of the first brown passing into white, of the others black passing into brown; the tips of all black. The centre of the rump is dusky, the sides nearly white; the upper tail coverts white with numerous sagittate or wavy bars of deep dusky. The tail is very light ash, the central feathers scarcely darker, all with the margins and a central shaft field white, most of the inner vane of the two outer being white. The under parts are white; the throat very sparsely marked with minute dusky streaks, which on the jugulum are much larger and more numerous; these streaks on the breast change to transverse wavy bars of dusky bordered with reddish, which uniformly cover the whole under parts. These lines are thickest and most distinct on the breast, growing more obsolete in the middle of the belly, and are largest on the sides under the wings, where the reddish margins fill up the space between the bars on the same feather. There is little reddish on the under tail coverts, where the bars become more or less sagittate.

The young is very different from the adult in color, but presents much the same form and size. The upper parts are of a uniform light ashy, the blackish of the adult appearing in irregular patches. These dark feathers, as well as the scapulars, wing coverts and tertials are edged with white, the latter

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slightly tinged with reddish. The wings and tail are much as in the adult, the upper tail coverts, however, scarcely barred. The under parts are white; the jugulum, and, to some extent, the sides under the wings with a lighter wash of the color of the back, and with very obsolete streaks of dusky. The under tail coverts laterally are slightly streaked with dusky. There is an indistinct white line over the eye, and a dusky one between the eye and bill. The auriculars show traces of the reddish, but there is none to be perceived on the nape or sides of the occiput. The bill is black, as in the adult, but the legs are very different, being light greenish yellow.

The synonymy of this Sandpiper, in consequence of its very remarkable form and colors, is definite and well determined, though, as will be seen by the list given, various names have been applied to it by different authors. It was first introduced to the scientific world in 1826, by Bonaparte, in the Annals of the N. Y. Lyceum, under the name of *Tringa himantopus*. By the same author it was afterwards placed in his subgenus *Hemipalama*, (subsequently erected into a genus.) The type of this, however, being, as already stated, the *T. semipalmata* of Wilson, the name cannot of course be retained. Nearly all authors who speak of it employ *Hemipalama*, giving it either subgeneric or full generic rank. Lambe, however, places the bird in *Totanus*, probably with reference to the long legs and the webbing of the toes. *Tringa Douglassii* of Swainson, is undoubtedly the present bird in mature plumage, though the figure indicates a more rufescent state of plumage than I have ever seen. The *Tringa himantopus* "Bon." of the same author, Nuttall, (page 40 of the Manual,) very precipitately "ventures to consider as a distinct species from the preceding" (*T. himantopus*), and names it *Tringa (Hemipalama) Audubonii*, though retaining both the *T. himantopus* Bon. and *Douglassii* Sw. I have little doubt, however, that all three names refer to the same bird, the *Micropalama himantopus* of Baird (General Report, page 726) and of the present article.

#### EREUNETES Illiger.

*Ereunetes*, Illiger, Prod. 1811, 262; typus *E. petrificatus*, Ill.

*Hemipalama*, Bonaparte, Obs. Wils. 1825, 88. Typus *T. semipalmata*, Wils. Nec syn. 1825.

*Heteropoda*, Nuttall, Man. Orn. 1834, ii. 136. Typus idem. Nec Latreillei, 1804, fide Gen. Rep.

*Char.* Bill variable, about as long as the head, straight, quite stout, both mandibles deeply grooved to the considerably expanded, sensitive, vascular tip. Wings long, pointed; secondaries deeply obliquely incised; tertials narrow and elongated. Tail moderate, doubly emarginate, the central feathers pointed and projecting. Tarsus rather longer than middle toe, usually about equal to the bill. Bare portion of tibia two-thirds the tarsus. Toes connected by a broad basal web, and broadly margined. Hind toe well developed.

A genus well characterized among the *Tringae* by the extensive webbing of the toes, a feature by which it may be readily distinguished from all other genera, except *Micropalama*. The other differences, however, from that genus are very great. The bill is much shorter, being about equal to the head, instead of very much longer. The middle toe is nearly equal to the tarsus, and the bare portion of the tibia is much less. The colors are very different. On the other hand *Ereunetes* comes very near to *Tringa*, with which it agrees in almost every particular, except that of the semipalmation of the toes. It appears to form the natural link between *Micropalama* and *Tringa* proper.

According to Cassin, (Gen. Rep. 724,) the genus *Ereunetes* of Illiger, is based upon a bird which has been proved, by actual examination of the type specimen, to be the *Tringa semipalmata*, Wils. *Ereunetes* must therefore supersede *Hemipalama*, Bon., and *Heteropoda*, Nutt., both instituted upon the same type.

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## EREUNETES PUSILLUS, (L.) Cassin.—Semipalmated Sandpiper.

*Tringa cinclus, Dominicensis minor*, Brisson, Ornith. 1760, v. tab. 37, fig. 3, [haud dubiè.]

*Tringa pusilla*, Linnæus, Syst. Nat. 1766, i. 252, [in præcedentem instituta.] [Nec Meyer. ; nec Bechst. ; nec Wils.] Gmelin, Syst. Nat. 1788, i. 681. Latham. Ind. Orn. 1790, ii. 737.

? *Tringa pusilla*, Vieillot, Nouv. Dict. 1819, xxxiv. 452.

*Ereunetes petrificatus*, Illiger, Prod. 1811, 262. Cassin, Gen. Rep. 1858, 724.

*Tringa semipalmata*, Wilson, Am. Orn. 1813, vii. 131, tab. lxiii. fig. 3 ; id. Ord. Ed. 1829, iii. 132 ; id. Brewer. Ed. 1840, 542, fig. 225 ; ib. Syn. 725.

Vieillot, Nouv. Dict. 1819, xxxiv. 462. Swainson, F. B. A. 1831, ii. 381. Audubon, Orn. Biog. v. 1839, 111, tab. 408 ; id. Syn. 1839, 236 ; id. Birds. Amer. 1842, v. 277, tab. 336. Giraud, Birds L. I. 1844, 239. Newberry, P. R. R. Surv. 1857. vi. 100.

*Tringa (Hemipalama) semipalmata*, Bonaparte, Obs. Wils. 1825, num. 212 ; id. Specc. Comp. 1827, 62.

*Hemipalama semipalmata*, Lambeye, Av. Cubæ, 1850, 96.

*Tringa (Heteropoda) semipalmata*, Nuttall, Man. 1834, ii. 136.

*Heteropoda semipalmata*, Bonaparte, Comp. List. 1838, 49. Dekay, N. Y. Fauna, 1844, 236, tab. 86, fig. 195. Gray, Genera, 1849, iii. 580.

*Ereunetes semipalmatus*, Cabanis, Schom. Reise. iii. 758, fide Gen. Rep. Bonaparte, Comptes Rend. xlili. 1856, fide Gen. Rep. Cabanis, Journ. fur Orn. 1856, 419, fide Gen. Rep.

? *Heteropoda mauri*, Bonaparte, Comp. List. 1838, 49, fide Gen. Rep.

? *Ereunetes mauri*, Gundlach, Cab. Journ. 1856, 419, fide Gen. Rep.

? *Hemipalama minor*. Lambeye, Av. Cubæ, 1850, 97.

*Tringa brevirostris*, Spix, Av. Bras. 1825, ii. 76, fide Gen. Rep.

? *Pelidna Brissoni*, Lesson, Man. d'Orn. 1828, ii. 277, [*T. pusillum*, Linn. citat.]

*Ereunetes pusillus*, Cassin, Proc. Acad. N. S. 1860, xiii. 195.

*Sp. char.* Bill stout, straight, variable in length, usually about equal to the head, the tip considerably expanded and punctulate. Feathers extending on the base of the bill to a nearly equal distance on both mandibles, their outline straight and vertical; those between the rami reaching but little further. First primary usually longer than the second, the rest equally graduated. Upper tail coverts very long; tail moderate, doubly emarginate, central feathers pointed and projecting. *Adult.*—Upper parts variegated with ashy, pure black, bright chestnut and white, each feather having a terminal black field, and being margined with reddish and tipped with white or ashy. Tertiaries dusky brown, edged with ashy or light chestnut; wing coverts and secondaries dusky ash edged with ashy white. Primaries deep dusky; shaft of the first white, the central portions of the others the same, their bases brown and tips black. Rump and upper tail coverts brownish black, the outer pair of the latter white barred with dusky. Central tail feathers dusky brown, the others light greyish ash scarcely edged with white. Beneath white; the throat and breast slightly rufescence, and with oval or cordate spots of brownish black, most numerous across the breast, and extending sparsely along the sides as shaft lines. Middle of belly and under tail coverts white, mostly immaculate. Bill and feet greenish black.

Length 6·5, wing 3·75, tail 2·1; bill (average) 1 inch; tarsus .85, toe .8, tibia, bare, .50.

*Habitat.*—Entire temperate North America. Bahia Islands.

The present bird, the single admitted\* American representative of a genus

\* I am by no means satisfied that but a single species of *Ereunetes* exists in North America. The differences in size, in length and proportions of the tarsus even, and especially in the bill, cause it to seem almost impossible that all the specimens before me are specifically the same. Thus, the difference in the length of the tarsus, between the

of such peculiar characters, requires comparison with no other sandpiper. *Actodromas minutilla* has much the same pattern of coloration, and sometimes approaches it in size; but the other differences are too great to allow of their being confounded.

The bill of this species varies most remarkably in length, the difference being *four-tenths* of an inch; it is always, however, quite stout. The tibia and tarsus vary somewhat, but within narrow limits. The proportions of the quills vary, but the first is usually longest. The tail is very decidedly doubly emarginate, the difference between the outer and next feather being nearly one-tenth of an inch; the third is the shortest. The upper tail coverts are very long, as are also the tertials. The winter and immature plumage shows little or none of the reddish, the feathers being mostly ashy with lighter borders. The young in July and August have scarcely any traces of the spots beneath, being almost entirely white, with a light buff wash across the breast. There is also much more white on the margins of the feathers of the upper parts.

With the exception of *Tringa canutus* and *Ancyllocheilus subarquata*, there is perhaps no North American Sandpiper which has received such a variety of names as the present. Fortunately, however, the proper name to be employed is now pretty definitely determined. The subject of the generic appellation has already been discussed under *Ereunetes*, and it now only remains to settle the question of the specific denomination. The first notice of the species is in 1760, by Brisson, who, in his *Ornithologia*, describes and figures a *Tringa cinclus Dominicensis minor*, which can be no other than the present bird. The description applies well, and the figure plainly shows the webbing of the toes, a feature entirely peculiar among the smaller *Tringae*. It was upon this bird that Linnæus, in 1766, based his *Tringa pusilla*, which name being the first applied to the bird in the binomial system, has priority over all others, and must be employed. In 1811, at the time of the founding of the genus *Ereunetes*, of Illiger, that author named the bird *E. petrificatus*. Cassin, in the General Report, though admitting that *T. pusilla*, Linn., is really this species, does not change Illiger's specific appellation, concerning which all doubt is removed by the actual examination of the type specimen. Very recently, however, in the Proceedings of the Philadelphia Academy, he has given the bird as *Ereunetes pusillus*, Cass., the name by which it should be known. In 1813 Wilson named the bird *T. semipalmata*, which designation being a most appropriate one, has been in general use among modern ornithologists, though referred by different authors successively to *Tringa*, *Heteropoda*, and *Ereunetes*. The *Pelidna Brissoni*, of Lesson, who quotes *T. pusilla*, Linn., is probably the present bird.

The remarkable variations in size and in the depth of the bill to which this bird is subject, have given rise to several nominal species. The *Hemipalama*

largest and smallest of these, amounts to nearly two-tenths of an inch; and in length of bill to about *four-tenths*, the latter being more than half the entire length of the shorter bill. The shortest bills appear fully as stout as the longest. These differences do not seem to depend upon locality, being found in specimens from the same region, while specimens from widely separated localities are absolutely identical. Thus, an excessively short-billed bird from Maryland is identical with one from Nebraska, while very large and long-billed specimens from Georgia, Utah and the Pacific coast do not differ appreciably. Specimens, however, from the same locality, and undoubtedly of the same species, exhibit much variation in size, length of bill and tarsus, amount of red or white above, and character of the spots beneath; so that without a full series of the common Atlantic bird before me, and especially in the uncertainty, if two or more species be admitted, to which one the name *pusilla* belongs, I have preferred to consider them as specifically identical. Still, it would not be surprising if a careful and extended examination of a large series of *Ereunetes* from all localities on the continent should substantiate two or even three good species: *Tringa semipalmata*, of Wilson, *Hemipalama minor*, of Gundlach, and *Heteropoda mauri*, of Bonaparte.

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*minor* of Gundlach is founded upon shortness of bill as a character; as is also (fide Gen. Rep.) the *Tringa brevirostris* of Spix. By the same authority the *Heteropoda mauri* of Bonaparte is considered as merely a larger race of the present species.

#### TRINGA Linnæus.

*Tringa*, Linnæus, Syst. Nat. 1735, Typus *T. canutus*, L. (fide G. R. Gray.)  
*Calidris*, Cuvier, Regne An. 1817, Typus *T. canutus*, L. (Nec. Cuv. 1800, cuius  
 typus *T. arenaria*, i. fide G. R. Gray.)  
*Canutus*, Brehm, 1830, (fide G. R. Gray.)

*Char.*—Bill about as long as, or rather longer than, the head, straight, stout, somewhat compressed, widening uniformly from the middle to the slightly expanded, rather hard tip; the culmen depressed on the terminal half to the expansion at tip, and obsoletely furrowed. Both mandibles deeply grooved to the tip. Nostrils very large and placed far forward in the upper groove. Feathers extending on the lower mandible much further than on the upper, and nearly as far as those between the rami. Wings long, pointed, first primary decidedly longest. Secondaries moderately incised. Tertiaries short, broad, and comparatively stiff. Tail rather short, nearly even, the central feathers projecting but little if any. Legs short and very stout; tarsus usually shorter than the bill; longer than the middle toe. Tibial feathers reaching nearly to joint; tibiae bare for nearly two-thirds the tarsus. Toes very short and stout, free at base, widely margined; outer lateral longer than inner. Hind toe present, well developed. Claws short, stout, blunt, much curved, dilated on the inner edge. Size large, general form stout.

In the above diagnosis I have drawn the characters of the genus so as to include only the type (*canutus*) upon which it was founded. In this acceptation it may be considered as typical of the section, embodying as it does the most characteristic features of the group, and presenting their usual variations; very great in plumage and in the length of the bill, and slight in the proportions of the legs and shape of the wings and tail. The essential characters lie in the stout, moderately long, straight bill, which usually considerably exceeds the tarsus, which latter is much longer than the very short stout toes; the long tibial feathers, long pointed wings, and short nearly even tail. The peculiar proportions of bill and legs is shared by no other Sandpiper, so far as my knowledge extends, except *Calidris*, which is evidently closely allied. This genus, however, is at once distinguished by the marked character of the absence of the hind toe. The affinities of *Ereunetes* have already been adverted to. *Arquatella* presents the next closest relationship, but is well characterized by the extremely abbreviated tarsus, rounded tail, and some other features.

*Tringa* is among the oldest of genera, having been established by Linnæus in 1735. As usual with old Linnæan genera, it has been used with great latitude, all the species which now compose the section having been included in it. It seems, however, to represent a form from which all others are sufficiently different to require full generic rank. Its synonyms are (fide G. R. Gray) *Calidris* of Cuvier, 1800, (not of 1817, of which the type is *T. arenaria*, L.,) and *Canutus* of Brehm, 1830.

North America possesses but a single representative of the genus as restricted. The *Tringa Cooperi* of Baird, which has been referred to it, seems to fall more naturally under *Actodromas*. Its relationships will be found fully discussed under that head.

#### TRINGA CANUTUS Linnæus.—Red-breasted Sandpiper.

*Tringa canutus*, Linnæus, Syst. Nat. i. 1766, 251. Latham, Ind. Orn. 1790, ii. 738. Pennant, Arct. Zool. 1785, ii. 473. Gmelin, Syst. Nat. 1788. Pal-las, Zoog. Rosso-As. 1811, ii. 197. Temminck, Man. d'Orn. 1820, ii. 627. 1861.]

- Jenyns, Manual, 1835, 213. Bonaparte, Comp. List, 1838, 49. Schinz. Europ. Faun. 1840, i. 326. Macgillivray, Man. Brit. Orn. 1842, ii. 67. Dekay, N. Y. F. 1844, 243, tab. 85, fig. 194, et. tab. 97, fig. 218. Schlegel, Rev. Crit. 1844, 88. Gray, Genera, 1849, iii. 579. Degland, Orn. Eur. 1849, ii. 219. Bonaparte, Rev. Crit. 1850, 185. Parzudaki, Cat. Ois. Eur. 1859, 14. Meyer, Brit. Birds, 1857, v. 67. Cassin, Gen. Rep. 1858, 715. *Tringa ferruginea*, Brunnich, Orn. Bor. 1764, 53. Vieillot, Nouv. Dict. 1819, xxxiv. 466.
- Tringa cinerea*, Brunnich, Orn. Bor. 1764, 53. Latham, Ind. Orn. 1790, ii. 733. Pennant, Arct. Zool. 1785, 474. Gmelin, Syst. Nat. 1788, i. pars ii. 673. Wilson, Am. Orn. 1813, vii. 36, tab. lvii. fig. 2; id. Ord. Ed. 1829, iii. 142; id. Brew. Ed. 1840, 482, fig. 224; ibid. Syn. 725. Lichtenstein, Verz. 1823, 72. Lesson, Man. d'Orn. 1828, ii. 283. Swainson, F. B. A. 1831, ii. 387. Nuttall, Man. Orn. 1834, ii. 125.
- ?*Tringa australis*, Gmelin, Syst. Nat. 1788, i. pars ii. 679. Latham, Ind. Orn. 1790, ii. 737.
- Tringa naevia*, Gmelin, Syst. Nat. 1788, i. pars ii. 681. Latham, Ind. Orn. 1790, ii. 732. Pennant, Arct. Zool. 1785, ii. 480.
- Tringa grisea*, Gmelin, Syst. Nat. 1788, i. pars. ii. 681. Latham, Ind. Orn. 1790, ii. 733.
- Tringa islandica*, Gmelin, Syst. Nat. 1788, i. pars. ii. 682. Latham, Ind. Orn. 1790, ii. 737. Pennant, Arct. Zool. 1785, ii. 476. Audubon, Orn. Biog. 1838, iv. 130, tab. 315; id. Syn. 1839, 232; id. Birds Amer. 1842, v. 254, tab. 328. Giraud, Birds L. I. 1844, 224. Holboll, Fauna Græn. 1846, 38. Nilsson, Scand. Faun. 1858, ii. 252.
- Tringa rufa*, Wilson, Am. Orn. 1813, vii. 43, tab. lvii. fig. 5; id. Ord. Ed. 1829, iii. 140; id. Brew. Ed. 1840, 487, fig. 227; ibid. Syn. 725.
- Tringa (Tringa) canutus*, Bonaparte, Cat. Met. 1842, 61.
- Tringa (Tringa) islandica*, Bonaparte, Speech. Comp. 1827, 62.
- Tringa (Tringa) rufa*, Bonaparte, Obs. Wils. 1825, 93.

*Sp. Char.*—Largest of North American *Tringae*. Bill stout, straight, rather longer than the head, upper mandible widely and deeply grooved to the expansion at tip. Feathers extending on lower mandible much farther than on upper, and nearly as far as those between the rami. First primary decidedly longest; tail short, nearly even; legs short, stout; tarsus usually shorter than the bill, but much exceeding the middle toe. *Adult in spring*. Upper parts brownish-black, each feather broadly tipped and edged with ashy white, tinged with reddish yellow on the scapulars. Rump dark ash, transversely banded with dusky; upper tail coverts white, with transverse sagittate or crescentic bars of brownish black. Tail greyish ash, edged with ashy white. Outer webs and tips of primaries deep dusky, the inner much lighter. Secondaries and coverts greyish ash, broadly edged and tipped with ashy white. Line over the eye and entire under parts a uniform deep brownish-red, fading into white on the sides posteriorly and the under tail coverts, which latter are marked with sagittate spots of dusky. Legs and feet greenish black. *Young in autumn*. Upper parts a uniform dark ash, or cinereous, each feather tipped with ashy or pure white, and having a sub-terminal edging of dusky black. Indistinct line over the eye, and whole under parts white, more or less tinged with light reddish, and the throat, breast and sides with rather sparse, irregularly disposed lines and spots of dusky, which become transverse waved bars on the latter.

Length 10·5, extent 20·5, wing 6·4, tail 2·7. Bill about 1·4, tarsus 1·2, middle toe 1 inch. Tibia bare 6.

*Habitat*.—Atlantic coast of North America; Europe.

This is the largest of the Sandpipers, and, though exceeding all others in the variation of plumage to which it is subject, may yet be easily recognized in all stages by its generic characters, which differ in some marked particulars from those of any other bird of the section. In the above diagnosis are given the

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plumage of the adult and of the young of the first autumn. These represent the two extremes; but birds may be found of every intermediate stage. In respect to form, the bird varies chiefly in the length of the bill and shape of the tail. The bill in adult specimens is always longer than the tarsus, but being dependent somewhat on age, may in young birds be found equal to the tarsus, or even a little shorter. The tail, usually nearly or quite even, is sometimes in immature birds considerably doubly emarginate; the central feathers, however, are never pointed and projecting as in *Actodromas*. As usual among the *Tringeeæ*, the tarsus and toes do not differ much in length or proportions.

*Tringa canutus* is mentioned in the very earliest ornithological writings, and, as is usually the case with those species which vary much in plumage, has received a great variety of names. The older authors instituted nominal species on almost every change of plumage which it undergoes; but still, these stages are now so well known, that there is little difficulty in identifying the descriptions. The "grisled" and "freckled" sandpipers of Latham and Gmelin, *T. grisea* and *nævia*, as well as, in all probability, the *T. australis*, Gm., are to be referred to intermediate stages of the present bird. But it is the plumage of the first autumn which has given rise to the most firmly established nominal species, the *T. cinerea*, Auct.; it is as different as possible from that of the adult, and at the same time is marked in character and presents but few evidences of immaturity. It is not a little singular that as late as 1813 Wilson should give the bird a new name, (*T. rufa*), and say that "of this prettily-marked species I can find no description;" there being already at that date no less than seven different appellations for the bird. *Tringa canutus* of Linnæus seems to have priority over all others, and is the name now in general use.

#### CALIDRIS Cuvier.

*Calidris*, Cuvier, 1799—1800, (fide G. R. Gray); 1805, (fide Gen. Rep.) Nec *Calidris*, Cuv. Regn. An. 1817.

*Arenaria*, Meyer, 1810, (fide G. R. Gray.) Nec Linnæi.

*Char.*—Bill stout, straight, about equal to the head or tarsus; tip thickened, expanded and rather hard, the culmen just posterior to it somewhat depressed and hollowed. Nostrils situated far forward. Wings long, pointed; tail short, doubly emarginate, central feathers projecting. Tibia bare for two-thirds the length of the tarsus; toes very short and widely margined. Hind toe wanting. (General characters of *Tringa* proper, but without hind toe.)

A genus well marked by the absence of the hind toe, a feature entirely peculiar among *Tringeeæ*. In other respects it comes nearest to *Tringa* proper, with which it has a very close affinity, the bill, tarsus and toes, as well as the tibia, having much the same proportions. The toes, however, are even shorter, and the tail is doubly emarginate, a feature scarcely seen in *Tringa*. The bill in its short and stout proportions has much the general appearance of that of *Charadrius*, which fact, in connection with absence of the hind toe, has caused the single species of the genus to be referred to the plovers by some of the older authors. In all other respects, however, as well as in general habits, the bird is a true Sandpiper.

According to Gray, *Calidris* of Cuvier, of 1799—1800, is founded upon the *T. arenaria*, L. The name must therefore be employed in the present connection, though in 1817 Cuvier gives *T. canutus*, L. as the type of the genus. *Arenaria* of Meyer, of 1810, based, according to Gray, upon the *T. arenaria*, is preoccupied in Botany, that being the name of an old Linnæan genus of plants.

#### CALIDRIS ARENARIA Illiger.—Sanderling.

*Tringa arenaria*, Linnæus, Syst. Nat. 1766, i. 251. Audubon, Orn. Biog. 1839, iii. 231, v. 582; id. Syn. 1839, 237; id. Birds Amer. 1842, v. 287, tab. 338. Schlegel, Rev. Crit. 1846, 90.

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*Trynga tridactyla*, Pallas, Zoog. Rosso-As. 1811, ii. 198.

*Charadrius calidris*, Linnæus, Syst. Nat. 1766, i. 255. Wilson, Am. Orn. 1813, vii. 68, tab. lix. fig. 4; id. Ord. Ed. 1829, iii. 167; id. Brew. Ed. 1840, 503.

*Charadrius rubidus*, Gmelin, Syst. Nat. 1788, i. 688. Wilson, Am. Orn. 1813, vii. 129, tab. lxiii. fig. 3; id. Ord. Ed. 1829, iii. 170; id. Brewer. Ed. 1840, 541.

*Arenaria vulgaris*, Leisler, (fide G. R. Gray.)

*Arenaria calidris*, Meyer, (fide G. R. Gray.) Degland, Ornith. Europ. 1849, ii. 240. Lambeye, Av. Cubal. 1850, 100.

*Calidris arenaria*, Illiger, Prod. 1811, 249. Temminck, Manual, ii. 524. Lichtenstein, Verz. 1823, 72. Bonaparte, Obs. Wilson, 1825, v. 105. Swainson, F. B. A. 1831, ii. 366. Nuttall, Manual, 1834, 4. Jenyns, Manual, 1835, 183. Schinz, Eur. Faun. 1840, i. 298. Bonaparte, Comp. List. 1838, 50; id. Catal. Metod. 1842, 61. Macgillivray, Man. Brit. Orn. 1842, 65. Giraud, Birds L. I. 1844, 243. Gray, Genera, 1849, iii. 581. Bonaparte, Revue Crit. 1850, 184. Cassin, U. S. Ast. Exp. 1855, ii. 194; id. Gen. Rep. 1858, 723. Nilsson, Scand. Faun. 1858, ii. 255. Cooper et Suckley, Nat. Hist. Wash. Terr. 1860, 241.

*Calidris tringoides*, Vieillot, Gal. Ois. 1834, ii. 95, tab. ccxxxiv.

*Calidris Americana*, Brehm, Vog. Deut. 1831, 675, (fide Gen. Rep.)

*Sp. Char.*—Bill short, stout, straight, the tip much thickened and expanded. Upper mandible widely, lower narrowly but distinctly, grooved. First primary decidedly longest. Tail doubly emarginate, the central feathers pointed and much projecting. Legs moderate, toes very short and widely margined. *Adult in spring.* Entire upper parts and neck all round, variegated with black, light ashy and bright reddish; on the back and scapulars each feather having a central black field, and being broadly margined and tipped with ashy or reddish. Under parts white, immaculate. Outer webs and tips of primaries deep brownish black, inner light ashy. A white spot at base of inner primaries. Secondaries mostly pure white; the outer vanes and part of inner on the latter half dusky. Greater coverts dusky, broadly tipped and narrowly edged with pure white. Rump, upper tail coverts and central tail feathers dusky, tipped and narrowly edged with ashy white; lateral tail feathers very light ash, nearly white. Legs and feet black. *Young in autumn.* No traces of the reddish. Upper parts very light ash, each feather fading into white on the edges, and with a narrow shaft line of dusky. Entire under parts pure white. Scapulars dusky, edged with whitish. Other parts as in the adult.

Length 7·5 to 8, extent 15 to 16; wing 4·9, tail 2·25. Bill about 1 inch, tarsus rather less; middle toe .75.

*Habitat.*—Temperate North America; South America; Europe.

In the above diagnosis I have given the breeding plumage and that of the young the first autumn; but a more usual winter dress differs from either. There are traces of the reddish on the upper parts generally and on the breast. Each feather above is brownish-black, regularly indented and tipped with ashy white, thus giving to the upper parts the appearance of being evenly mottled. There is a buff tinge on the breast, and also on the tips of the rump feathers. The bend of the wing is nearly as dark as in the adult. At all times the under parts of the bird from the jugulum are pure white.

As stated in the remarks upon the genus, the peculiarities of the form of this bird have caused it to be considered as a *Charadrius* by some of the older authors. Linnæus erred so much as to refer it to that genus in one state of plumage, and to classify it as a Sandpiper in another. Wilson, though retaining the species in *Charadrius*, remarks upon its evident affinity to the latter group. The *Charadrius rubidus* of Gmelin and Wilson represents the adult-breeding plumage, and the *C. calidris* of the same authors, the young bird. But the peculiarities of the bird are so great that it was very early removed from

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both *Tringa* and *Charadrius*, and a genus *Calidris* formed for its reception. In 1811, Illiger called the bird *C. arenaria*, which is the name generally employed by ornithologists since that date. Audubon, however, in all his works retains the species in *Tringa*. I have found but two instances of the use of *Arenaria calidris*, Mey., which are those given in the list of synonyms. *Calidris tringoides* of Vieillot is undoubtedly the present bird, as is also (fide Gen. Rep.) the *C. Americana* of Brehm.

#### ARQUATELLA Baird.

*Arquatella*, Baird, Gen. Rep. 1858, 714. *Typus Tringa maritima*, Brünn.

*Char.*—Bill variable, always longer than the head, straight or slightly decurved, very slender, much compressed, tip scarcely expanded. Groove in lower mandible shallow, sometimes nearly obsolete. Wings long, pointed. Tail moderate, cuneiform. Tibial feathers very long, covering the joint. Tarsus extremely abbreviated, much shorter than the bill or middle toe. Toes very long, broadly margined and flattened beneath. Hind toe very short; claws short and blunt.

In the remarkably abbreviated tarsus, much surpassed by the long toes,—in the lengthened tibial feathers, cuneiform tail and slender compressed bill,—*Arquatella* constitutes perhaps the most marked section of the *Tringaeæ*, and one well worthy of full generic rank. Indeed it is a little remarkable that it was not earlier separated from the other allied genera. By most authors it has been considered as a true *Tringa*, and placed in close connection with *T. canutus*. Bonaparte, however, gives it as a *Pelidna*, though Cuvier, in establishing that genus, retains it in his *Calidris*, (of 1817 = *Tringa* proper.) Besides its striking peculiarities of form, the colors of the single species is very different from that of any other known Sandpiper. The name *Arquatella* is Pallas's specific appellation of the bird.

#### ARQUATELLA MARITIMA (Brünn.) Baird.—Purple Sandpiper.

*Tringa maritima*, Brünnich, Orn. Bor. 1764, 54. Gmelin, Syst. Nat. 1788, i. pars ii. 678. Latham, Ind. Orn. 1796, ii. 731. Pennant, Arct. Zool. 1785, 481. Vieillot, Nouv. Dict. 1819, xxxiv. 471. Temminck, Manual, 1820, ii. 619. Lesson, Manual, 1828, ii. 283. Swainson, F. B. A. 1831, ii. 382. Nuttall, Manual, 1834, ii. 115. Jenyns, Manual, 1835, 211. Audubon, Orn. Biog. 1835, iii. 558, tab. 284; id. Syn. 1839, 233; id. Birds Am. 1842, v. 261, tab. 330. Macgillivray, Man. Brit. Birds, 1842, ii. 67. Schinz, Eur. Faun. 1840, i. 324. Schlegel, Rev. Crit. 1844, 88. Giraud, Birds L. I. 1844, 236. Dekay, N. Y. Fauna, 1844, ii. 237, tab. 87, fig. 98. Hollbol, Fauna Græn. 1846, 39. Degland, Orn. Eur. 1849, ii. 222. Gray, Genera, 1849, iii. 579. Parzudaki, Cat. Ois. Eur. 1856, 14. Meyer, Brit. Birds. v. 1857, 80. Nilsson, Scand. Faun. 1858, ii. 235.

*Pelidna maritima*, Bonaparte, Comp. List, 1838, 49; id. Rev. Crit. 1850, 185; id. Cat. Met. 1842, 60.

?*Tringa striata*, Linnæus, Syst. Nat. 1766, i. 248. Latham, Ind. Orn. 1790, ii. 733. Pennant, Arct. Zool. 1785, ii. 472. Gmelin, Syst. Nat. 1788, i. pars ii. 672.

*Tringa undata*, Brünnich, Orn. Bor. 1764, 55. Latham, Ind. Orn. 1790, ii. 732. Gmelin, Syst. Nat. 1788, i. pars ii. 678. Vieillot, Nouv. Dict. 1819, xxxiv. 470.

*Tringa nigricans*, Montagu, Linn. Trans. 1796, iv. 40, (fide Gen. Rep.)

*Tringa arquatella*, Pallas, Zoog. Rosso-As. 1811, ii. 190.

*Tringa canadensis*, Vieillot, Nouv. Dict. 1719, xxxiv. 453.

*Tringa (Arquatella) maritima*, Cassin, Gen. Rep. 1858, 717.

*Sp. Char.*—Form and proportions typical of the genus. *Adult.* Entire upper parts a lustrous very dark bluish or blackish ash, with purple and violet 1861.]

reflections, and each feather with a lighter border. Greater and lesser wing coverts, tertials and scapulars edged and tipped with white. Secondaries mostly white. Primaries deep dusky, the shafts dull white except at tip, where they are black. Upper tail coverts and central tail feathers brownish black with purplish reflections, the outer pair of the former white barred with dusky. Lateral tail feathers light ashy. Jugulum and breast bluish ash, each feather of the latter edged with white, and the ash extending along the sides beneath the wings. Rest of under parts white, immaculate. Legs, feet and bill at base light flesh-color; rest of bill greenish black. *Young in September.* Upper parts much the color of the adult, but with each feather broadly edged and tipped with light buff or reddish yellow. Light edging of wing coverts ashy instead of pure white. Under parts everywhere thickly mottled with ashy and dusky, deepest on the breast and jugulum.

Length 8 to 9, extent 15 to 16, wing about 5, tail 2·6. Bill above (average) 1·2; tarsus .9; middle toe 1·1; tibia bare .45.

*Habitat.*—Atlantic coast from Greenland to Florida. Europe.

Except in the very immature plumage given above, this Sandpiper varies but little in color, the difference between adult and young being chiefly in the depth and intensity of the tints. As the bird advances toward maturity, the upper parts become darker and more lustrous, the edgings of the wing coverts and scapulars more conspicuous and better defined. The mottling of the under parts is gradually restricted till it forms the well defined, uniform dark ash of the jugulum and breast, the sides being always sparsely streaked, and the rest of the under parts white, immaculate. The youngest specimens, however, show a very decided greenish or purplish lustre. While the length and proportions of the tibia, tarsus and toes are remarkably constant, the size of the whole bird, and more particularly that of the bill, varies greatly. The difference in the length of the bill of five specimens now before me amounts to three-tenths of an inch, and in that of the whole bird to considerably more than an inch. A specimen from Greenland is the smallest, having the wing four-tenths of an inch shorter than in one from New Hampshire. In this specimen the legs and feet are dusky-green instead of flesh-colored, and the bill is scarcely lighter at base.

Owing to the striking peculiarities of form and color which this species presents, there has been, contrary to what is usually the case with the Sandpipers known to the earlier authors, comparatively little confusion regarding it. As far as I have been able to ascertain, it has been considered as a true *Tringa* by all authors except Bonaparte (who refers it to *Pelidna*) up to the time of the General Report, in which work it is very properly made the type of a distinct genus. Most authors have also adopted the original specific appellation given by Brünnich in 1764; and I have not met with any other name in works published since 1819, in which year it is given as "Le tringa cendré du Canada, *Tringa Canadensis*, Lath." by Vieillot. There can be no doubt with regard to the bird which is referred to under this head; for after a description which applies well to the usual immature plumage, (not that of the very young given in the diagnosis,) the author adds, "mais ce qui distingue cet oiseau de ceux de son genre, c'est d'avoir les jambes couvertes de plumes jusqu' au talon, et même au-dessous"—a feature which exclusively characterizes the *A. maritima*. *Tringa undata* of Brünnich, Gmelin, &c., is considered as the young of this species in the plumage given in the diagnosis, where the light borders of the feathers of the upper parts and the transverse mottling of the lower give to the bird a somewhat wavy appearance. *Tringa striata* of Linnæus, Gmelin, &c., is generally supposed to refer to this species. Pallas gives it as *Trynga arquata*, an appellation from which the generic name is derived.

#### ANCYLOCHEILUS Kaup.

*Erolia*, Vieillot, Analyse, 1816, 55; Typus *Scolopax subarquata* Guld., secundum G. R. Gray et Gen. Rep. (*Erolia*, Vieill., Gal. 1834 = *Erolia*.)

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*Ancylocheilus*, Kaup, Sk. Ent. Eur. Thierw. 1839, 50; Typus *Tringa subarquata*, Temm.

*Char.*—Bill much longer than the head, slender, compressed, considerably decurved, the tip not expanded, and rather hard. Grooves in both mandibles very narrow, but distinct. Wings long, pointed. Tail very short, nearly even. Legs long, slender; tarsus and tibia both lengthened, the latter exposed for nearly or quite half the length of the former. Toes moderate, slender, slightly margined, the middle one about three-fourths the tarsus.

The essential characters of this well-marked genus lie in the long, slender, decurved bill, with hard unexpanded tip, the long slender legs, and very short, nearly even tail. In addition, it may be stated that the groove in the upper mandible, except just anterior to the nostrils, is very narrow, though deep; the feathers extend between the rami scarcely further than those on the side of the lower mandible, which exceed those on the upper but little; the tip of the bill is pointed and acute; the claws are all very slender and acute. In form this genus approaches nearest to *Pelidna*, from which, however, it is perfectly distinct and easily recognizable. The bill of the latter is much stouter, depressed instead of compressed, and the feathers extend to some distance between the rami of the lower jaw. The tail is longer and deeply doubly emarginate. An important difference is to be found in the legs, in the proportion of the tibia, tarsus and toes. In *Pelidna* the toe is nearly equal to the tarsus, which is considerably more abbreviated than in *Ancylocheilus*. The tibiae appear to be exposed to a less extent.

According to Gray and to the General Report, *Erolia* of Vieillot (Anal. 1816, *ut suprà*) is founded upon the present bird. With every disposition to rely upon such authority, in a careful examination of the characters of the genus in that work and in the *Nouv. Dict.* (1817,) as well as of *Erolia* in the *Galerie*, (1834,) I have been unable to reconcile them with those of the bird now under consideration. In all these works, apparently the most important characters are stated to be the absence of the hind toe, and the presence of a membrane between the outer and middle, neither of which features exist in the *Scolopax subarquata*, Guld. In the *Galerie*, reference is made to the *Nouv. Dict.*, (x. page 409,) where the genus is fully characterized. A portion of the diagnosis is as follows:—"Erolie, *Erolia* Vieill. Genre de l'Ordre des *Echassiers*, et de la famille des *Egialites*.—trois doigts devant, point derrière; les extérieurs unis à la base par une membrane, l'énterne libre. Ce genre ne content qu'une espèce qui se trouve en Afrique, et dont on ne connaît que la dépouille." It will be seen that the author places the bird ("dont on ne connaît que la dépouille") not only in a different genus, but in a family entirely distinct from the Sandpipers; and the description of "L'Erolie varié, *Erolia variegata*, Vieill., which follows, I cannot identify with any plumage of *Tringa subarquata* with which I am acquainted. It should also be borne in mind that Vieillot (*Nouv. Dict.*, ut *infra*) correctly describes the present bird under the name of "Le tringa cocorli, *T. subarquata*, Temm.," and no reference whatever is made to *Erolia*. Now, it is by no means impossible that *Erolia variegata* may have been positively identified with *T. subarquata* by actual examination of the type specimen, or otherwise; but even in that case I do not think the name should be adopted. The position of *Erolia variegata* in the system is very different from that which *Tringa subarquata* occupies, and the characters of the genus as published to the world are widely at variance with those presented by that bird.

From these considerations therefore I have adopted *Ancylocheilus* of Kaup, (1829,) concerning which there is no doubt.

#### ANCYLOCHEILUS SUBARQUATA (Guld.) Kaup.—Curlew Sandpiper.

*Scolopax subarquata*, Guldenstaedt, Nov. Com. Petrop. 1775, xix. 471, tab. xviii.  
fide Gen. Rep. Gmelin, Syst. Nat. 1788, i. 658.

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- Scolopax africanus*, Gmelin, Syst. Nat. 1788, i. 655.  
*Tringa subarquata*, Temminck, Man. 1820, ii. 609. Vieillot, Nouv. Dict. xxxiv. 1819, 454. Nuttall, Man. 1834, ii. 104. Jenyns, Man. 1835, 208. Audubon, Orn. Biog. 1835, iii. 444; id. Birds Amer. 1842, v. 269, tab. 333; id. Syn. 1839. Schinz, Eur. Faun. 1840, i. 320. Macgillivray, Man. Brit. Orn. 1842, ii. 71. Giraud, Birds L. I. 1844, 237. Schlegel, Rev. Crit. 1844, 88. Dekay, N. Y. Fauna, 1844, 239, tab. 95, fig. 213. Gray, Genera, 1849, iii. 579. Degland, Orn. Eur. 1849, ii. 225. Meyer, Brit. Birds, 1857, v. 91. Nilsson, Scand. Faun. 1858, ii. 239.
- Pelidna subarquata*, Bonaparte, Comp. List, 1838, 50; id. Rev. Crit. 1850, 185.
- Ancyllocheilus subarquata*, Kaup, Eur. Thierw. 1829. Parzudaki, Cat. Ois. Eur. 1856, 14.
- Numenius subarquata*, Bechstein, Nat. Deut. iv. 148, fide Temminck.
- Numenius pygmæus*, Bechstein, Nat. Deut. iv. 135, fide Temminck.
- Numenius ferrugineus*, Meyer, fide Vieillot.
- Numenius africanus*, Latham, Ind. Orn. 1790, ii. 712.
- Erolia variegata*, Vieillot, Anal. 1816; id. Nouv. Dict. 1817, x. 409, secundum Gen. Rep., Lesson, Man. 1828, ii. 302.
- Ærolia varia*, Vieillot, Gal. des Ois. 1834, ii. 89, tab. cxxxii.; (= *Erolia variegata*.)
- Falcinellus cursorius*, Temminck, fide Parzudaki.
- Tringa (Tringa) subarquata*, Bonaparte, Specch. Comp. 1827, 62.
- Pelidna (Ancyllocheilus) subarquata*, Bonaparte, Cat. Met. 1842, 60.
- Tringa (Erolia) subarquata*, Cassin, Gen. Rep. 1858, 718.

*Sp. Char.*—Form typical of the genus. *Adult.* Crown of head and entire upper parts lustrous greenish black, each feather tipped and deeply indented with bright yellowish red. Wing coverts ashy brown, each feather with a shaft line of dusky and with reddish edging. Primaries deep dusky, their shafts brown at base and black at tip, the central portion nearly white. Upper tail coverts white with broad bars of dusky, and tinged at their extremity with reddish. Tail light greyish with greenish reflections. Sides of the neck and entire under parts uniform deep brownish red. Under tail coverts barred with dusky. Axillars and under wing coverts white. Bill and legs greenish black. *Young in autumn.* Crown of head and back brownish black, with a slight greenish lustre, each feather edged with white or reddish yellow. Rump plain dusky, upper tail coverts white. Wing coverts with broad greyish-white borders. Tail light ashy, edged and tipped with white, the central feathers with a subterminal dusky border in addition. Under parts entirely white, the breast and sides of the neck finely streaked with dusky, the former with a light buff tinge.

Length 8·5, wing 4·9. Bill (average) 1·5. Tarsus 1·3; toe .9; tibia bare .7.

*Habitat.*—“Atlantic coast of United States; rare. Europe, Asia, Africa.” (Gen. Rep.)

The variations in both plumage and dimensions which this species presents are very great, fully equal to those exhibited by *Tringa canutus*. I have given above the colors of the adult and of the young of the first fall, between which there may be found every gradation, more especially in reference to the red of the under parts, which at different ages appears as mottling of greater or less extent. The species may, however, be easily recognised in every stage of plumage by its generic characters. The single American specimen before me differs from European skins in a shorter stouter bill, in a shorter tarsus and toes, and in a remarkably abbreviated hind toe.

There has been considerable confusion among writers with regard to the synonymy of this species. It has received quite a variety of both generic and specific appellations, and from its many changes of plumage several nominal species have arisen. The bird was first mentioned, in 1775, by Guldenstaedt, (Nov. Comm. ut suprà,) who introduced it under the name of *Scolopax subarquata*. This specific appellation is the one which has been employed by most

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authors. It has been placed in seven different genera,—*Scolopax*, *Numenius*, *Tringa*, *Falcinellus*, *Pelidna*, *Ancyllocheilus* and (according to Gen. Rep.) *Erolia*. It was probably the long, slender, decurved bill which caused some of the earlier authors to consider it as a *Numenius*. The *Numenius subarquata*, Bechst., or the *Scolopax subarquata*, Gm., is the summer plumage of this species, and the *Numenius Africanus*, Lath., or the *Scolopax Africanus*, Gm., the winter. The *N. ferrugineus*, Mey. is this species, according to Vieillot; and Temminck also gives *N. pygmaeus*, Bechst. as a synonym, considering it as the young before the first moult. The "Red Sandpiper" of Latham and Pennant refers to this species, though in the synonymy the former gives *T. Icelandica*, Linn. and *T. ferruginea*, Brünn., both of which names are synonyms of *T. canutus*. The relationships of *Erolia variegata* or *Ærolia varia* have already been discussed under the head of *Ancyllocheilus*.

#### PELIDNA Cuvier.

? ? *Schæniclus*, Mœhring, Gen. Av. 1752, 77.

*Pelidna*, Cuvier, Regne Anim. 1817, 490. Typus *T. cinclus*, L.

*Char.* Bill stout, much longer than the head or tarsus, decurved, depressed, tip somewhat expanded and punctulate. Grooves in both mandibles very deep and distinct. Wings moderate; tertials long, narrow and flowing. Tail rather long, deeply doubly emarginate, the central feathers projecting. Legs moderate, or rather long. Tarsus but little if any longer than the middle toe. Bare portion of tibia more than half the tarsus. Toes rather long, and narrowly margined.

The essential characters of this genus lie in the long, stout, decurved bill, longer than the head or tarsus, and the tarsus but little longer than the middle toe, approaching in this respect to *Actodromas*, to which, in the doubly emarginate tail and, to some extent, the general pattern of coloration and changes of plumage, it is still more nearly related. Its affinities to *Ancyllocheilus*, which are close, will be found discussed under that head. The genus is very variable in the length of its bill, though the legs, as usual among the *Tringae*, are pretty constant. The colors of the two species of the group are subject to many and great variations dependent upon age and season, which in each have given rise to a second nominal species. In addition to these, minor differences in size and color have been made the grounds of specific distinction by some European writers. With these, however, the present monograph has nothing to do, since, in according to the American bird specific distinction from that of Europe, the intricate and difficult synonymy of the latter is excluded.

The genus *Pelidna*, of Cuvier, (1817), has been employed by different writers in a very unnatural manner to designate the smaller Sandpipers indiscriminately, nearly all the species having been at one time or another included in it, grouped together without the slightest regard to their natural affinities. This is perhaps due in a measure to the very loose manner in which it is characterized by Cuvier, who merely says, in instituting the genus,—"les Pelidnes ne sont que de petites maubèches, à bec un peu plus long que la tête, et dont les pieds n'ont ni bordures ni palmures." The genus has in consequence fallen somewhat into disrepute among later ornithologists, who generally avoid the use of it; but still it must stand for the type upon which it was founded (*T. cinclus*, L.) if no other name has been previously proposed for the same group. *Schæniclus*, of Mœhring, (1752), is said by some authors to refer to that type; but I can find no characters which restrict it to the *T. cinclus*. The brief diagnosis is as follows: "Rostrum digitis cum ungue fere æquale. Pes tetradactyla. Membrana dimidium primum articulum inter extimum et medium digitum occupans." Now as the bill is not "about equal to the middle toe and claw," but very much longer, and as there is scarcely the rudiment of a membrane between the outer and middle toe, which does not nearly occupy "half the first joint," the only character left which really belongs to the *T. Alpina* is "pes 1861.]

tetradactyla," which of course applies equally well to any other Sandpiper except *Calidris arenaria*.

In the uncertainty, therefore, it may be best to use *Pelidna* of Cuvier, which, although loosely characterized, is definitely located by the mentioning of the type upon which it is founded.

**PELIDNA AMERICANA** (Cass.) Coues.—American Dunlin.

*Tringa alpina*, Wilson, Am. Orn. 1813, vii. 25, tab. lvi. fig. 2; id. Ord. Ed. 1829, iii. 136; id. Brewer Ed. 1840, 475, fig. 220; (nec Linnæi, nec al. script. Europ.) Swainson, F. B. A. 1831, ii. 383. Nuttal, Manual, 1834, ii. 106. Audubon, Orn. Biog. 1835, iii. 580, tab. 290; id. Syn. 1839, 234; id. Birds Amer. 1842, v. 266, tab. 332. Girard, Birds L. I. 1844, 228. Newberry, P. R. R. Expl. 1857, vi. 100.

*Tringa (Tringa) alpina*, Bonaparte, Obs. Wils. 1825, v. 92.

*Tringa cinclus*, Wilson, Am. Orn. 1813, vii. 39, tab. lvii. fig. 3; id. Ord. Ed. 1829, iii. 138; id. Brewer, Ed. 1840, 484, fig. 225; (nec Linnæi, nec al. script. Europ.) Dekay, N. Y. Faun. 1844, 240, tab. 84, fig. 292.

*Pelidna cinclus*, Bonaparte, Comp. List, 1838, 50.

*Tringa alpina*, var. *Americana*, Cooper et Suckley, Nat. Hist. Wash. Terr. 1860, 239.

*Tringa (Scheniclus) alpina*, var. *Americana*, Cassin, Gen. Rep. 1858, 719.

*Sp. char.* Larger than *P. alpina*. Bill longer, stouter and more decurved than in the type of the genus. Wings moderate, pointed, first primary decidedly longest. Tail rather long, deeply doubly emarginate, the central feathers projecting, the upper coverts much lengthened. Legs much longer than in *P. alpina*, the tarsus decidedly longer than the middle toe. *Adult in breeding plumage.*—Crown of head and upper parts generally bright chestnut red, the feathers with a central field of black, and on the scapulars with whitish margins. Lesser wing coverts plain greyish ash, each feather with a shaft line of dusky and with a light border; greater broadly tipped with white. Outer vanes and tips of primaries deep dusky, almost black, those of the inner edged with white towards their bases; inner vanes of all light ashy. Secondaries mostly white. Tertiaries with the rump and upper tail coverts brownish black, with either plain greyish or light reddish edges, the outer pair of the latter mostly white. Central tail feathers brownish black, the rest light greyish ash. Forehead, line over the eye and whole under parts white, the jugulum with numerous longitudinal lines and streaks of brownish black, and the belly with a very broad bar of pure black. Legs, feet and bill black. *Adult in winter, and young.*—Upper parts a uniform dark ash, generally with traces of the reddish on the scapulars, and the feathers with darker shaft lines. White edgings of inner primaries very conspicuous. Jugulum with an ashy suffusion, and with numerous ill-defined, blended streaks of dusky. Rest of under parts pure white.

Length 8·5, extent 14·5, wing 4·9, tail 2·3. Bill above 1·6, tarsus 1·1, middle toe .95, tibia bare, .6.

*Habitat.* Continent of North America.

Although it may seem a hazardous undertaking to separate the Dunlins of America and Europe, yet on the authority of that most accurate ornithologist, Mr. Cassin, and from the testimony of numerous specimens from both countries before me, I cannot but come to the conclusion that they are specifically distinct. The uniformly larger size, the disproportionately longer, stouter and more decurved bill, and the invariably longer and differently proportioned legs, are discrepancies which can hardly be allowed to exist in the same species. The constancy of these differences in so notoriously variable a bird as the present, as well as their radical nature, are indications which cannot be neglected. The distinctive characters being entirely those of size and proportion, the comparative measurements of three specimens from each country is subjoined:

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Name.	Length.	Extent.	Wing.	Bill.	Tarsus.	Toe.
<i>Pelidna Americana</i> .....	8.50*	15.40*	4.70	1.50	1.08	.98
" "	9.00*	14.00*	5.05	1.74	1.13	1.05
" "	8.25*		4.65	1.54	1.03	.95
<i>Pelidna alpina</i> .....	7.90†		4.25	1.40	.90	.90
" "	8.10†		4.70	1.42	1.02	.88
" " ("Schinzii,")....	8.40†		4.50	1.40	.92	.85

\* Fresh; on authority of collector. † Of skin; approximate only.

The comparative diagnoses would be briefly as follows:

*P. alpina*. Length 8 inches. Bill, average, 1.4. Tarsus but little if any longer than middle toe. Length of tarsus and toe 1.75.

*P. Americana*. Larger; length 8.5 inches. Bill average 1.7; disproportionately longer, stouter, more decurved. Tarsus decidedly longer than the middle toe; legs considerably longer; length of tarsus and toe 2 inches.

Among the specimens from the west coast there appear to be two very decided types. One is that common to the Atlantic coast, in which the bill measures on an average 1.50 of an inch in length, and the wing 4.60. Of the other there are three specimens before me, collected at different times, absolutely identical in size and proportion, and differing greatly both from eastern specimens and all others from the west coast. In these the bill measures 1.72 of an inch, being nearly a fourth of an inch longer than in *P. Americana*; the wing is nearly five inches; the legs are somewhat longer, and the whole bird considerably larger. The differences, indeed, between these specimens and the average of *P. Americana* are nearly if not quite as great as those which separate that latter species from the *alpina*. These facts are of importance, and would seem to point to one of the following considerations:—either the three specimens alluded to belong to a species distinct from the *Americana*, or that they represent one extreme, and *P. alpina*, or more properly *T. Schinzii*, Brehm,\* the other of one and the same species, of which *P. Americana* is the intermediate form. I cannot but think, however, that the former supposition is the most probable; for it seems almost impossible in one species there should be such variations, and those too of such a radical nature as are presented by specimens of *Pelidna* from different localities. Thus, to consider a bird in which the bill measures 1.20, the leg 1.75, and the wing 4.40, (as in the smallest specimen of *Pelidna* before me,) as specifically identical with one in which these parts were respectively 1.75, 2.10 and 4.95, would be almost without a parallel in ornithology; while, at the same time, if they be considered distinct, it is impossible to avoid recognizing also the intermediate form. But if, as I think has been pretty conclusively shown, the American bird is distinct from the European, then the west coast specimens above referred to are equally worthy of specific distinction.† Still, with but three specimens before me, I do not venture, in the case of so variable a bird as a Sandpiper, to present it as distinct; but should the above differences be found constant, and showing no graduation towards the *Americana*, I should have no hesitation in so doing. In the event of their proving really distinct, I would propose the name of *Pacifica* as an appropriate one.

\* With but a single specimen of *Tringa Schinzii* before me, I am not prepared to express any opinion with reference to its relationships to *Pelidna alpina*. In this paper I consider it as merely a smaller race of the latter, entirely upon the high authority of the General Report.

† In the field notes of the late Dr. C. B. R. Kennerly, I find the opinion expressed that they are distinct; and I am informed by Dr. Geo. Suckley, U. S. A., that he has always doubted the specific identity of the various specimens of *Pelidna* from the west coast. Both of these gentlemen have enjoyed excellent opportunities for observation and comparison, and their opinions should carry with them considerable weight.

The above remarks are made rather with the view of calling attention to the facts, than as presenting any solution of the problem. The whole subject is one of great interest, and well worthy of extended and careful investigation.

#### ACTODROMAS, Kaup.

*Actodromas*, Kaup, Sk. Ent. Eur. Thierw. 1829, 55; Typus *Tringa minuta*, Leisl. Char. Bill about equal to the head or tarsus, short, straight, very slender, somewhat compressed, the tip punctulate, scarcely expanded, acute. Grooves on both mandibles very deep, and extending nearly to the tip. Nostrils situated very near the base of the bill. Feathers extending on the lower mandible much beyond those on the upper, and half as far as those between the rami. Wings long, pointed, first primary usually longest; tertials long, slender, flowing. Tail rather long, deeply doubly emarginate, the central feathers much projecting; upper tail coverts moderately long. Tibia bare for more than half the length of the tarsus; the feathers very short, making the exposed portion nearly as great. Tarsus equal to the middle toe. Toes long, slender, very narrowly margined, entirely free at base. (In typical species the jugulum with an ashy or brownish suffusion, thickly streaked; the rump and upper tail coverts with a central blackish field.)

The genus *Actodromas*, of Kaup (1829) includes a well marked and very natural group of Sandpipers, the quite numerous species of which are very closely related both in form and colors. Its type, from which I have drawn the characters in the preceding diagnosis, is the *T. minuta*, Leisl., a European species not occurring in North America, being replaced in that country by the *Tringa Wilsoni* of Nuttall, a very closely allied species, and one with which it has been confounded by some authors. The essential characters of the genus lie in the short, straight, slender bill, which equals the head or tarsus; the long slender toes, the middle equal to the tarsus; the much denuded tibia with its short feathers, and the long, deeply doubly emarginate tail. The peculiar proportions of bill, tarsus and toe are shared by no other Sandpipers, so far as my knowledge extends. The genus is divisible into two well-marked sections: *Actodromas* proper, with the type *T. minuta*, having its characters strictly as above; and *Heteropygia*,\* with the *Tringa Bonapartei* as type. The latter differs in the stouter bill, more expanded at tip; in the much less extent of the encroachment of the feathers on the lower mandible; in the longer legs, the tarsus rather exceeding the middle toe; in the entire absence of the brownish or ashy suffusion on the jugulum, and in the white upper tail covers. In this section I have placed the *Tringa Cooperi* of Baird, which is most closely related to the *A. Bonapartei*, and is at any rate an *Actodromas* rather than a true *Tringa*.

The species of the genus now ascertained to inhabit North America are five in number: *A. maculata*, *A. minutilla*, and the new *A. Bairdi*, coming under *Actodromas* proper; *A. Bonapartei* and *A. Cooperi*, which compose the section *Heteropygia*. The three first of these are so nearly alike in colors, that, their form being absolutely identical, size is the chief specific difference. *A. maculata* is much the largest, being about nine inches in length; *A. minutilla* is very small, being less than six inches; while *A. Bairdi* is exactly intermediate between the two, measuring a little over seven inches.

The following brief schedule will serve to distinguish the five species, when in adult breeding plumage:—

#### *Actodromas*, Kaup.

A. Jugulum with a brownish or ashy suffusion, thickly streaked. Rump and upper tail coverts with a central black field.

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\* The name is used with reference to the most conspicuous, though probably not most important, feature in which it differs from *Actodromas* proper. The combination being rather an obvious one, the name may have been already employed; in that event I would suggest *Delopygia* with much the same signification.

1. Much the largest; length about 9 inches, wing (average) 5·25. Crown much darker than the hind neck, the transition abrupt. Chin immaculate. Edgings of feathers on upper parts light chestnut-red, not making indentations towards the shaft. Suffusion on jugulum very deep, the streaks narrow, distinct. Central tail feathers long, pointed, much projecting. Bill and legs dusky green, *maculata*.
2. Smaller; length 7·25 inches, wing 4·8. Crown not conspicuously darker than hind neck. Edgings of feathers on upper parts light reddish yellow, scarcely brighter on the scapulars, making indentations towards the shaft. Suffusion on jugulum very light, the markings rounded, somewhat obsolete. Central tail feathers rounded, less projecting. Bill and legs black, *Bairdii*.
3. Much the smallest; a miniature of the preceding; length 5·75; wing 3·4. Edges of feathers chestnut-red, usually more or less indented, tips lighter. Bill black, legs dusky green, *minutilla*.

*Heteropygia*, Coues.

B. Jugulum without an ashy or brownish suffusion. Upper tail coverts white.

4. Length 7·5. Jugulum thickly streaked with rather narrow lines. Upper tail coverts immaculate, except the outer pair. Central tail feathers nearly black, considerably projecting, *Bonapartei*.
5. Much larger; length 9·5. Jugulum with sparse, rather broad oval spots or streaks. Upper tail coverts with sagittate spots of dusky. Central tail feathers scarcely darker than the lateral, projecting but little, *Cooperi*.

*Comparative Measurements of Species.*

Name.	Sex.	Length.	Extent.	Wing.	Bill above.	Tarsus	Middle Toe.	Outer Toe.	Coverts to end of tail.	Central Feathers project.
<i>A. maculata.</i>		9·00*		5·35	1·12	1·12	1·12	.90	.80	.52
do.	♀	8·50	16·50	5·00	1·15	1·10	1·12	.92	.80	.40
do.		9·10	18·20	5·55	1·20	1·14	1·14	.92	.90	.42
<i>A. Bairdii.</i>	♂	7·15		4·90	.85	.83	.83	.70	.60	.20
do.	♂	7·25	15·25	4·85	.86	.88	.88	.72	.50	.15
do.	♂	7·25	15·25	4·80	.86	.90	.82	.69	.63	.16
<i>A. minutilla.</i>	♀			3·35	.74	.69	.78	.61	.45	.18
do.	♂	6·00	11·30	3·35	.72	.75	.79	.64	.40	.25
do.	♂	6·00	12·00	3·56	.74	.75	.85	.66	.58	.20
<i>A. Bonapartei.</i>	♂	7·40	15·00	4·70	.94	.98	.95	.80	.80	.29
do.				4·85	.88	.98	.90	.80	.80	.22
do.	♂	7·40	15·10	4·80	.95	.92	.91	.75	.75	.22
<i>A. Cooperi.</i>	♂	9·50		5·75	1·23	1·14	1·08	.95	.85	.15

ACTODROMAS (ACTODROMAS) MINUTILLA (Vieill.) Coues.—Least Sandpiper.

*Tringa minutilla*, Vieillot, Nouv. Dict. 1819, xxxiv. 452, (haud dubie.) "Vieill," Gray, Genera, 1849, iii. 579.

*Tringa pusilla*, Wilson, Am. Orn. 1813, v. 32, tab. xxxvii. fig. 4; id. Ord. Ed. 1829, iii. 134; id. Brewer, Ed. 1840, 347, fig. 161. (Nec Linnæi; nec Meyer; nec Bechst.) Swainson, F. B. A. 1831, ii. 386. Audubon, Orn. Biog. 1838, iv. 320, tab. 180; id. Syn. 1839, 237; id. Birds Amer. v. 1842,

\*The measurements of the length and extent are from the fresh bird, and on the authority of the collector.

- 280, tab. 337; Giraud, Birds L. I. 1844, 240. Gray, Genera, 1849, iii. 579.  
Woodhouse, Expl. Zuni. 1853, 190.  
*Pelidna pusilla*, Bonaparte, Comp. List, 1838, 50. Gosse, Birds Jamaica, 1847,  
348.  
*Tringa Wilsoni*, Nuttall, Man. 1834, ii. 121. Cooper et Suckley, Nat. Hist.  
Wash. Terr. 1860, 240.  
*Tringa (Tringa) pusilla*, Bonaparte, Comp. Specch. 1827, 237.  
*Tringa (Actidromas) Wilsoni*, Cassin, Gen. Rep. 1858, 721.

*Sp. Char.*—The smallest of North American *Tringaeæ*. Bill straight, very slender, about equal to the tarsus, but varying somewhat, the tip scarcely expanded, and the point very acute. Wings long, first and second primaries about equal, third but little shorter. Tertiaries very long, frequently nearly equalling the primaries. Tail rather long, the central feathers moderately projecting and rather rounded. Middle toe frequently slightly longer than tarsus. Upper parts generally with each feather having a central black field, and being edged with chestnut and tipped with ashy white, the margins making a deep indentation in the middle of the feather. Outer row of tail coverts white, with large, sagittate, dusky spots. Central tail feathers black, edged with light reddish, the others very light ashy with whitish borders. Primaries deep dusky, almost black, the shaft of the first white. Secondaries and greater coverts dusky, lighter on the inner vanes, and tipped with white. An indistinct whitish line over the eye, and a dusky one between the eye and bill. Jugulum and sides to some distance with a very decided brownish suffusion, and thickly marked with rounded spots and streaks of dusky. Chin and under parts generally white, the former usually with minute points of dusky. Legs, feet and bill greenish dusky, the latter nearly black.

Length 5·5 to 6, extent 11·5 to 12, wing 3·4. Bill, tarsus and middle toe about .75.

*Habitat.*—Entire temperate North America.

The diminutive size of the present species at once distinguishes it from any other Sandpiper now recognised as an inhabitant of North America; but in view of the species of other countries with which it is very closely allied, and especially of the uncertainty whether there be not two or more distinct species in North America, a more minute description may not be considered as unnecessary. In addition, therefore, to the preceding diagnosis, which presents the principal characters of adult individuals, the following remarks may tend to define it with more precision.

In apparently adult specimens, the general style of coloration much more closely resembles that of *Bairdii* than of *maculata*, in the rounded black spots and color of the edgings, as well as in the scolloping at the middle of each feather. Young birds, however, are precisely similar to the *maculata* in the same stage, having the edges of the feathers bright chestnut, and the tips pure white. In this respect the species departs from the general rule with regard to young birds, the plumage at that age being actually brighter than during the breeding season. The same is the case with the *A. maculata*. An evidence of immaturity, however, may always be found in the color of the jugulum, where the wash is simply dull ashy, and the streaks narrow and ill defined. The chin, too, is immaculate, while with the adults it is usually minutely dotted with dusky. The young have the lesser wing coverts broadly margined with light reddish, while the adults have them merely a lighter shade of the color of the rest of the feather. The color of the jugulum is much that of *A. Bairdii*, being of the same decided brownish tint; and the similarity is heightened by the rounded and somewhat obsolete character of the spots. The color of the breast extends along the sides about half way to the tail, but some feathers are marked with dusky quite to the vent. The under tail coverts are usually immaculate, but sometimes have shaft lines of dusky. The primaries are deep dusky, still darker at tip, the shaft of the first being white for its entire length,

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the other having their bases and tips brownish. The secondaries and greater coverts are nearly as dark as the primaries, both conspicuously tipped and their inner vanes edged with white. The axillary feathers are white; and, in the closed wing, a portion of the under coverts form a large triangular patch of white near the shoulder.

A specimen from the west coast presents a very remarkable pattern of coloration. It has not the least trace of any reddish or chestnut, being everywhere of a uniform dark ash, each feather with a central spot or shaft line of dusky. The rump is scarcely darker than the back. The breast is merely a lighter shade of the color of the back, and the streaks are so indistinct as to be scarcely perceptible. This is very different from the plumage of the young given above; and it is not impossible that the bird is of a species distinct from the one now under consideration. The general pattern, however, is very similar to that presented by the young *Bairdii*; and in the absence of any differences of size or proportions, and with but a single specimen before me, I am unwilling to risk adding another name to the already overburdened synonymy of the smaller Sandpipers. In another specimen, also from the west coast, the prevailing color of the upper parts is almost black, the feathers, except on the scapulars, being scarcely edged with reddish; and the streaks on the breast are very numerous and dark, upon a nearly white ground. This state of plumage is exactly parallel with that sometimes exhibited by undoubted specimens of *A. maculata*.

The relationship of this species to the European *A. minuta* are close; and, with but a single very defective and immature skin of the latter before me, I cannot well state the points of difference; but all authors are agreed upon the specific distinction of the two. As far as I can judge, *A. minuta* is considerably the largest, (wing 3·85 instead of about 3·4,) and the proportions of the primaries are quite different from those of *A. minutilla*. *A. minuta* has been given as an inhabitant of North America by both Swainson and Nuttall, but probably upon insufficient or erroneous data.

With regard to this little Sandpiper, there has been considerable confusion among authors, arising partly from the great similarity it bears to some other species, such as the *Tringa minuta* and *Temminckii*, and partly from a misinterpretation of the *T. pusilla*\* of Linnæus. This name was applied by Wilson, in 1818, to the species now under consideration, and is adopted by Swainson, Audubon and some other writers. The *T. pusilla* of Nuttall ("stint or little sandpiper") is *T. Temminckii*, Leisl., and is erroneously given as an inhabitant of North America. What "Le tringa bécō, *T. pusilla*, Lath." of Vieillot refers to is a little doubtful. The author quotes plate 37, fig. 4 of Wilson's Ornithology, which is *T. pusilla*, Wils. (*T. Wilsoni*, Nutt.); and also cites the "petite Alouette-de-mer de Saint-Domingue" of Brisson, which is *T. semipalmata*, Wils. (*Ereunetes pusillus*, Cass.). The description, however, especially with reference to the stout bill, traces of reddish on the under parts, &c.; seems rather to point to the latter, which it may be best to consider it, even though no mention is

\* For convenience of reference, the four species to which the name *pusilla* was originally applied, with their more prominent synonyms, are here inserted.

*Tringa pusilla*, Linnæus = *Ereunetes petrificatus*, Illiger = *Tringa semipalmata*, Wilson = *Heteropoda semip.*, Nuttall, and *Hemipalama semip.*, Bonapar'e = *Ereunetes pusillus*, Cassin; (*Heteropoda mauri*, Bonaparte, and *Hemipalama minor*, Gundlach, are synonymous?)

*Tringa pusilla*, Meyer = *Tringa minuta*, Leisler = *Actodromas minuta*, Kaup.

*Tringa pusilla*, Bechstein = *Tringa Temminckii*, Leisler = *Actodromas Temminckii*, Bonaparte.

*Tringa pusilla*, Wilson = *Tringa minutilla*, Vieillot = *Tringa Wilsonii* Nuttall = *Actodromas Wilsoni*, Cassin = *Actodromas minutilla* of the present article.

It will thus be seen that *Tringa pusilla* of Linnæus, Meyer, Bechstein and Wilson refers to four distinct species.

made of the webbed feet. The remarks made in this article, under the head of *Ereunetes pusillus*, will, it is hoped, show that the name *pusilla* was originally used in a very different connection, and hence cannot be employed for the present species. Bonaparte, as early as 1825, seems to have been aware that the *T. pusilla* of Linnæus was not the bird given under that name by Wilson; for in his Observations on the Nomenclature of Wilson's Ornithology, on the subject of *T. semipalmata*, Wils., he gives as a reason for not adopting *pusilla* for that latter species, that "several species have been confounded together under the name of *T. pusilla*; and although the present (*T. semipalmata*, Wils.) is the real species, it would be adding to the existing confusion to change the most appropriate name of *semipalmata*, given by the author who first separated the species, in order to apply a name generally given to another, to which in that case we ought to give a new name." In 1834, Nuttall applied the name *Wilsoni* to a species whose manners and habits he described so accurately that there can be no doubt of its referring to the bird now under consideration, though he, too, fell into the error of quoting *T. cinclus dominicensis minor*, Briss. This name *Wilsoni* being supposed to be the only one hitherto applied to the species, (except of course *pusilla*, untenable for the reason already given,) is the one in general use among more modern ornithologists. In view of the existing confusion, it is with great reluctance that I adopt still another name for this species; but the *Tringa minutilla* of Vieillot points so unmistakeably to the present bird, that a strict adherence to the laws of ornithological nomenclature renders this necessary. This author (page 466 of the *Nouv. Dict.*) says: "Le nom que j'ai conservé à cet oiseau est celui sous lequel il est connu dans nos colonies d'Amérique, et qui lui a été imposé d'après sa petite taille . . . il a des rapports avec le *tringa minuta* de Leisler . . . je l'ai souvent vu à Halifax, et dans la Nouvelle-Ecosse . . . comme les *tringas becos*," (*T. semipalmata*, Wils.?) "se comporte de même, il en est résulté qu'on les a confondu ensemble." There is no North American Sandpiper but the present remarkable for its diminutive size, and having relationships with the *T. minuta*, Leisl., that is found in Nova Scotia, except the *T. semipalmata*, Wils., with which, as the author remarks,\* it is sometimes confounded, from a general similarity in habits and appearance. The description given applies well; and in some particulars, such as the length (quatre pouces dix lignes) and the proportions of the bill, ("noir, très-grêle, et long de neuf legnes; les tarses de la même longeur,") can refer to no other North American Sandpiper.

From these considerations therefore I adopt the name *minutilla*, at least until some weightier reasons be adduced to disprove the position assumed.

**ACTODROMAS (ACTODROMAS) BAIRDII Coues.—Baird's Sandpiper.**

*Tringa (Actodromas) Bonapartei*, Cassin, Gen. Rep. 722. In part.

*Sp. Char.*—Form and proportions typical of the genus. Bill small, slender, rather shorter than the head, equal to the tarsus, the tip scarcely expanded, its point very acute. Grooves in both mandibles very long and deep, that of the lower very narrow. Feathers extending on the side of lower mandible much farther than those on the upper, about half as far as those between the rami. Wings long; first and second primaries about equal, but varying, third much shorter; tertials long, slender, flowing. Tail rather long, but slightly doubly emarginate, the central feathers rounded, projecting but little. Toes long, slender, slightly margined, the middle with its claw about equal to tarsus. *Adult in breeding plumage.* Entire upper parts a very dark brownish black, deeper on the rump and lighter on the neck behind, each feather bordered and tipped with light reddish yellow; on the scapulars the tips broader and nearly pure white, and the margins brighter, making several deep indentations towards

\* If, as is probably the case, "le beco" be the *T. semipalmata*, Wils.

the shaft. Upper tail coverts long, extending to within half an inch of the tips of the central tail feathers, black, except the outer series, which are white with dusky markings. Central tail feathers brownish black, the rest successively lighter, and all with a narrow border of white. Jugulum with a very decided light brownish suffusion, (much as in *A. maculata*,) and, together with the sides under the wings to some distance, with rounded obsolete spots and streaks of dusky. Throat and under parts generally white, immaculate. Bill, legs and feet black. *Young in August.* Dimensions and proportions as in the adult. Upper parts a nearly uniform light ashy brown, deeper on the rump, each feather with a central dark field and with a light edge. Traces of the brownish black of the adult on the scapulars. Breast and jugulum with the suffusion very light reddish brown, the streaks sparse and very indistinct.

Length 7·25, extent 15·25, wing 4·9. Bill above, tarsus and middle toe about .85.

*Habitat.*—North America, east of the Rocky Mountains. Not on the Atlantic coast. (?)

The preceding diagnosis expresses the most essential characters of a Sandpiper, hitherto confounded with the *A. Bonapartei*, but nevertheless perfectly distinct from that or any other species recognized as an inhabitant of North America. Though a true *Actodromas*, and very closely related to the *A. minutilla* and *maculata*, a similarity in size, in changes of plumage, and, to some extent, in general appearance, has caused it to be referred to *A. Bonapartei*, which, however, belongs to a group subgenerically distinct. But the two differ very materially both in tints and in the pattern of coloration of the upper parts, and in the character of the upper tail coverts and the jugulum. The following brief schedule will express the chief distinctive features of each, and render further comparison unnecessary.

*A. Bairdii.*—Length about 7·25 inches. Bill slender, entirely black. Feathers extending on the lower mandible much beyond those on the upper. Edging of scapulars light buff color, indented. Breast and jugulum with a decided brownish suffusion, the markings rounded, sparse, rather obsolete. Upper tail coverts much lengthened, black; central tail feathers projecting but little, the emargination of the tail slight.

*A. Bonapartei.*—Length about 7·50 inches. Bill stout, flesh colored at base below. Feathers extending on the lower mandible but little if any beyond those on the upper. Edging of scapulars bright chestnut, scarcely indented. Jugulum and breast with a scarcely appreciable ashy wash, the streaks narrow, numerous, well defined. Upper tail coverts moderate, white; the central tail feathers considerably projecting, and tail quite deeply emarginate.

The species is a true *Actodromas*, and belongs subgenerically to the same group as *A. minutilla* and *maculata*, with both of which it is very closely related, and requires comparison. In size it is exactly intermediate between the two, exceeding the *minutilla* by about as much as it is itself surpassed by the *maculata*. The slender black bill is very similar to that of *minutilla*, and the general pattern of coloration almost identical. The colors, however, are everywhere much lighter; the edgings of the feathers of the upper parts being of a light reddish yellow or buff, instead of the bright chestnut red of *minutilla*; while the streaks upon the breast are fewer, less distinct and more rounded. It is considerably smaller than *A. maculata*; there is nothing of the abrupt transition from the dark crown to the much lighter hind neck, so conspicuous in the latter; the tertials want the bright reddish edgings, and the pattern of coloration of the upper parts are quite different. While the suffusion of the breast and jugulum is much the same, the markings are more rounded, sparse and indistinct. There is also a great difference in the bill, as regards size, shape and color. The species differs from both *minutilla* and *maculata* in one important respect,—the character of the changes of plumage it undergoes. The young of both the former are usually quite as bright, if not brighter, than the adults;

and the markings are all definite and distinct, while immature birds of the present species are of a nearly uniform ashy above, the suffusion of the breast very light, and the streaks so indistinct as to be scarcely appreciable. In this respect it resembles *A. Bonapartei*, with the different stages of which there is a perfect parallelism. In some stages of plumage it approaches the *A. Cooperi*, the resemblance being further enhanced by the slight emargination of the tail. The greatly superior size of the latter, however, independently of its subgeneric characters, at once distinguishes it. Some specimens show a tendency towards the general dusky state of plumage also exhibited by both *minutilla* and *maculata*, when the upper parts are very dark and nearly uniform, being scarcely relieved by lighter margins of the feathers.

The following detailed description which will serve to definitely characterize this species in the plumage of the adult during the breeding season, and of the young bird of the first fall, is taken from a very perfect male shot May 19th, at Fort Resolution, and from a young male obtained in Nebraska during the latter part of July.

The bill is of moderate length, and very slender, expanded but slightly at tip, and the point very acute; the grooves are long, extending quite to the expansion of the tip, that of the lower mandible being narrow but distinct. The bill is entirely black. The feathers encroach on the lower mandible much beyond those on the upper, about half as far as those between the rami. Their upper outline is about parallel with the culmen. There is much white about the head; the extreme forehead and the lower eyelid are white, while a broad ill-defined band of the same passes over the eye. A narrow and well defined dusky stripe passes from the eye to the nostril. The crown is streaked with dusky brown and dull ochreous, and is darker along a broad medium stripe than at the sides. The sides and back of the neck are much like the crown, but rather lighter, the transition being gradual. The upper parts generally are of a dark brownish black, every feather being edged with light reddish yellow; on the scapulars each feather is broadly bordered with bright buff, still more widely at the end with a dull shade of the same, the extreme tip being white. On most of the feathers the edging makes a deep, more or less irregular indentation, leaving the black only as a line along each side of the shaft. The long tertials, the secondaries, and greater wing coverts are dusky, fading into dull white on the edges. The lesser coverts are very dark, with scarcely lighter tips. The primaries are deep dusky, almost black, the shaft of the first white, of the others mostly brownish. The inner primaries are very narrowly edged on the outer vane with white. The tail coverts are black, the outer series with sagittate spots of white. The central tail feathers which are rounded and project but little beyond the rest, are brownish black, narrowly edged with white; the lateral light ashy, fading into white at the edges. The chin and throat are white, and immaculate or nearly so. The jugulum, breast, and sides to some distance have a very decided light brownish, or ochreous suffusion, and the makings are rather sparse, rounded, and indistinct, in the middle of the breast nearly obsolete. They are largest and most conspicuous just before the bend of the wing, where they gradually pass into the stripes of the sides of the neck. The rest of the under parts including the axillars and under wing coverts are white, immaculate. The tibial feathers are ashy; the legs and feet black.

The young has the form and proportions much as in the adult. The white about the head is much restricted, and the line over the eye so ill defined as to be scarcely appreciable as such. The upper parts generally are of a dull nearly uniform brownish ash, each feather with a shaft line of dusky, and with a lighter tip. There are traces of the brownish black of the adult at intervals, but more particularly on the scapulars, where the edgings are yellowish white. The rump and upper tail coverts are nearly as dark as on the adult. The suffusion of the jugulum and breast is a very light shade of reddish brown;

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and the streaks are sparse, and so indistinct as to be in some places scarcely appreciable. The wash extends for some distance along the sides under the wings.

An intermediate, and perhaps more usual state of plumage during the winter differs in some respects from either of the preceding. The centres of the feathers of the upper parts are nearly as dark as in the adult, but they are every where rather broadly tipped with pure white. In other respects the plumage generally is much like that of the adult, except that, as might be expected, the wash on the jugulum is very light and much restricted, and the streaks very indistinct.

Upon inspection of Audubon's figure of the male of his *Tringa Schinzii*, I was inclined to think that it was taken from a specimen of the present species. It represents a male in the act of flying, and shows plainly the upper tail coverts, which are entirely dark colored, as are also the upper parts generally. In the collection, however, I find a specimen of the true *Bonapartei*, labelled "St. Augustine, Fla.", received from Mr. Audubon, which is in all probability the original of the figure. It is in the peculiar dusky state already mentioned, and agrees very nearly with the plate. His figure of the female is undoubtedly that of a true *Bonapartei*. The fact of his remarking that "In some individuals about six of the middle tail coverts are black, the lateral barred with white and dusky," show that he was acquainted with both species, but considered the differences as dependant upon sex or age. The diagnosis given by Mr. Cassin, in the General Report, of *Tringa Bonapartei*, points unmistakeably to that bird; but on the examination of the four specimens there enumerated, I find three of them to be of the present species. The differences were most unaccountably overlooked by that accurate ornithologist, though on a very cursory comparison of the types of the descriptions in the present article, with specimens of *A. Bonapartei*, he pronounced them to be totally distinct.

The first specimen of the present species procured were taken by Dr. Hayden, during the exploration of Nebraska, by Lieut. Warren. There are also specimens in the collection from Fort Kearney, by Dr. Cooper, from the Zuni river, by Dr. Woodhouse, and from the vicinity of Great Slave Lake, by Mr. Kennicott and Mr. Ross. These widely separated localities would seem to indicate a habitat co-extensive with that of *A. Bonapartei*, and probably embracing the continent of North America, east of the Rocky Mountains. I have never seen it, however, from the Atlantic coast.

In presenting to the scientific world this my *first* new species, I should do violence to my feelings, did I give it any other name than the one chosen. To SPENCER F. BAIRD, I dedicate it, as a slight testimonial of respect for scientific acquirements of the highest order, and in grateful remembrance of the unvarying kindness which has rendered my almost daily intercourse a source of so great pleasure, and of the friendly encouragement to which I shall ever feel indebted for whatever progress I may hereafter make in ornithology.

**ACTODROMAS (ACTODROMAS) MACULATA (Vie ill.) Cass.—Pectoral Sandpiper.**

*Tringa maculata*, Vieillot, Nouv. Dict. 1819, xxxiv. 465.

*Pelidna maculata*, Parzudaki, Cat. Ois. Eur. 1856, 15. (*T. Bonapartei*, Schlegel per errorem citat.)

*Tringa campestris*, Lichtenstein, Verz. 1823, 74; (nec Vieill., 1819.)

*Pelidna pectoralis*, Say, Long's Exped. 1823, i. 171. Bonaparte, Comp. List. 1838, 50. Cassin, U. S. Ast. Exp. 1855, ii. 195.

*Tringa pectoralis*, Bonaparte, Am. Orn. 1833, iv. 43; tab. xxiii.; id. Cat. Birds U. S.; id. Syn. sp. 250; (fide Bon.) Nuttall, Manual, 1834, ii. 111. Jenyns' Manual, 1835, 210. Audubon, Orn. Biog. 1835, iii. 601; v. 582; tab. 294; id. Syn. 1839, 232; id. Birds Amer. v. 1842, 259; tab. 329. Macgillivray, Man. Brit. Birds, 1842, ii. 67. Giraud, Birds L. I., 1844, 233. Dekay, N. Y. Faun. 1844, 242, tab. 85, fig. 193. Schlegel, Rev. Crit. Ois.

1861.]

Eur. 1844, 89. Gray, Genera, 1849, iii. 579. Lambeye, Aves Cubæ, 1850,  
98. Woodhouse, Sitgreave's Expl. 1853, 100. Meyer, Brit. Birds, 1857, v.  
89. Cooper et Suckley, Nat. Hist. Wash. Terr. 1860, 230.

*Tringa Dominicensis*, Degland, Orn. Eur. 1849, ii. 232.

*Tringa (Tringa) pectoralis*, Bonaparte, Spec. Comp. 1827, 62.

*Pelidna (Pelidna) pectoralis*, Bonaparte, Cat. Met. 1842, 60.

*Tringa (Actodromas) maculata*, Cassin, Gen. Rep. Birds, 1858.

*Sp. Ch.*—Bill a little longer than the head, about equal to the tarsus or middle toe, moderately stout, straight or very lightly decurved, the tip more expanded and punctulate than in the type of the genus. Grooves in both mandibles long and deep. Wings long, pointed, first primary decidedly longest; tertials very long, narrow, and flowing. Tarsus equal to middle toe, both about equal to the bill. Tail rather long, deeply doubly emarginate, the central feathers pointed and greatly projecting. *Adult in Spring.* An ill-defined white line over the eye, and a more distinct one of dusky between eye and bill. Crown streaked with brownish black and light chestnut, conspicuously different from the neck behind, which is streaked with dusky and light ochreous. Upper parts generally, a very dark brownish black, every feather edged with ashy or dark chestnut red, brightest on the scapulars, the tips usually lighter, and the margins never making deep indentations toward the shaft. Rump and upper tail coverts black, the outer series of the latter white, with sagittate spots of dusky. Primaries deep dusky, almost black, the shaft of the first white, of the others brown. Secondaries and greater coverts dusky, edged and tipped with white. Lesser coverts dusky, fading into light greyish ash on the edges. Central tail feathers brownish black, lighter on the edges, the lateral light ashy margined with white. Jugulum and breast with a deep wash of ashy brown, and with very numerous well defined streaks of dusky; the suffusion extending on the sides under the wings to some distance, where the dusky streaks are mostly shaft lines. Chin, and under parts generally, white, immaculate. Bill and feet dusky greenish. *Young in September.* Edges of the feathers of the upper parts generally, and of the tertials and central tail feathers, light bright chestnut, and the tips pure white. Lesser wing coverts broadly edged and tipped with light ferruginous. Suffusion on the breast and jugulum with a yellowish ochreous tinge not seen in the adult, and the streaks less distinct. Other parts as in the adult.

Length 9 to 9·5 inches, extent about 18, wing (average) 5·5. Bill, tarsus, and middle toe about 1·10.

*Habitat*.—Entire temperate North America. Europe.

This is the largest of the species of this group inhabiting North America, with the exception of the *A. Cooperi*; and though it is subject to great variations both in size and color, is not easily confounded with any other. The size, the character, and color of the margins of the feathers of the upper parts, the crown conspicuously different from the hind neck, and the deep pectoral wash, readily distinguish it. Its relationships are closest with the *A. Bairdii*, both having the black rump and upper tail coverts, and suffusion on the jugulum. The considerably superior size of the present species, however, at once distinguishes it, independently of the different color and pattern of the markings on the upper parts. In *maculata* the edgings of the feathers are either dull ashy or bright chestnut, and are never of the light reddish yellow of *Bairdii*. There is nothing of the scolloping of the edgings on the scapulars, which in *Bairdii* give the appearance of a rounded black spot on the end of each feather. The emargination of the tail is more than twice as great. The pectoral wash is much deeper, and the streaks more numerous and distinct. The much smaller size, the white upper tail coverts, and absence of a decided pectoral wash of *A. Bonapartei* at once separate that species without further comparison. The similarity in every respect except with regard to size presented by the *A. minutilla* is very great, especially in immature individuals of the latter; but its diminutive size renders

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comparison unnecessary. The differences between the present species and the *A. Cooperi* will be pointed out under the head of the latter.

In addition to the characters given on the diagnosis, the following remarks may serve to illustrate the peculiarities of the present species, with its variations. While the difference in size between the largest and smallest specimens before me is very considerable, amounting to over half an inch in the wing, and more than an inch in entire length, the bill and feet vary but little in length and proportion. The difference in the length of the bill is but about one-tenth of an inch, and of the tarsus and toes it is less. The three are about equal, and from 1·10 to 1·20 of an inch in length. The proportions of the quills seem constant, the first being decidedly longest. The tertials vary quite remarkably in length, in some specimens nearly equaling the longest primary, and in others being over an inch and a half shorter; they usually, however, reach to within less than an inch of the tips of the wings. The feathers, which encroach on the side of the lower mandible but little beyond those on the upper, present an acute angle, their upper outline being parallel with the commissure, and the lower sloping rapidly backward. The crown is much darker than the hind neck, the transition being marked and abrupt. The upper parts vary greatly in the color of the margins of the feathers, it being of every intermediate shade from a very dull ashy with scarcely a tinge of reddish to very bright chestnut. In the latter case, the tips of the feathers are nearly pure white; but this pattern of coloration is mostly confined to the young bird, which, as is also the case with *A. minutilla*, is of actually brighter colors than when adult. An evidence of immaturity is always to be seen in the light ferruginous edgings of the lesser wing coverts, which in the adults are merely light ashy. The same feature characterizes the young *minutilla*, and is also found in the European *A. minuta*. While the pectoral wash is always deep and decided, its color varies considerably. In the adults it is usually a very dark ash, while in the young of the year it has a light ochreous or buff tinge. In the former it fades gradually into the white of the chin, while on the latter it forms a well defined more or less triangular white patch. The line of demarcation on the breast is always sharply defined. In some specimens there are dusky shaft lines along the sides quite to the vent. This species also sometimes exhibits the peculiar dusky state of plumage found in the *minutilla* and *Bairdii*.

Contrary to the general rule among the Sandpipers, there has been very little confusion among authors with regard to this species, and its synonymy is definite and well ascertained. The first notice of it by an American author was in 1823, in Long's expedition to the Rocky Mountains, where it was named *Pelidna pectoralis*, by Say. This specific appellation, certainly a most appropriate one, is that which has been in general use among authors, the bird being as usual referred to both *Pelidna* and *Tringa*. It is, however, very different from either, and is in every essential a true Actodromas. "Le tringa maculé," *Tringa maculata* of Vieillot, (1819,) unquestionably refers to the present species, and the name has therefore priority over *pectoralis*. Lichtenstein, in 1823, named the species *T. campestris*, which of course is also superseded by *maculata* Vieill. Degland, in 1849, presented the bird as *Tringa dominicensis*, the name being derived from the *T. cinctus dominicensis* of Brisson, (1760.) This author, however, was no binomialist, and has hence no claim to bestow names in such a system.

ACTODROMAS (HETEROPYGIA) BONAPARTEI (Schl.) Cass.—Bonaparte's Sand-piper.

? *Scolopax pusilla*, Gmelin, Syst. Nat. 1788, i. 663.

*Pelidna cinclus*, var. Say, Long's Exped. 1823, i. 172.

*Tringa Schinzii*, "Brehm." Bonaparte, Syn. 1828, (nec Brehm. quæ *T. alpina*, var. ? fide Gen. Rep.) Swainson, F. B. A. 1831, ii. 384. Bonaparte, Am. Orn. 1833, iv. 69. Nuttall, Manual, 1834, ii. 109. Audubon, Orn. Biog. 1861.]

1833, iii. 529, tab. 278; id. Synopsis 1839, 236; id. Birds Amer. 1842, v. 275. Macgillivray, Man. Brit. Orn. 1842, ii. 72. Giraud, Birds L. I. 1844, 241. Dekay, N. Y. F. 1844, 241, tab. 84, fig. 191. Degland, Ornith. Europ. 1849, ii. 231. Lambeye, Aves Cubæ, 1850, 98. Woodhouse, Sitgreave's Exped. 1853, 100. Meyer, Brit. Birds, 1857, v. 96.

*Pelidna Schinzii*, Bonaparte, Comp. List. 1838, 50; id. Cat. Met. 1842, 60.

*Tringa Bonapartei*, Schlegel, Rev. Crit. Ois. Eur. 1844, 89.

*Tringa (Actodromas) Bonapartei*, Cassin, Gen. Rep. 1858, 722.

*Sp. char.* Bill quite stout, moderately long, equal to the head or tarsus, the tip somewhat expanded. Grooves on both mandibles long and deep. Feathers extending on the lower mandible but little beyond those on the upper. Wings long, pointed, first primary decidedly longest; tertials long, narrow and flowing. Tail moderate, quite deeply doubly emarginate, the central feathers somewhat pointed and considerably projecting. Tarsus rather longer than the middle toe. Toes long, slender and slightly margined. *Adult in breeding plumage.*—Crown and upper parts generally light brownish ash, each feather with a large field of dusky towards its end, and on the crown and middle of the back edged with light yellowish red, deepening into bright sienna on the scapulars. Lesser wing coverts dark brownish ash, fading into light ashy on the edges, and with shaft lines of blackish. Secondaries and greater coverts light greyish ash, edged and tipped with white. Tertiaries very dark brownish ash, fading into light ashy on the edges. Primaries deep dusky, their shafts white in the central portions, and the innermost edged with white. Rump brownish black. Upper tail coverts white, their outer series with sagittate spots of dusky. Central tail feathers deep brownish black, the rest very light greyish ash, broadly edged and tipped with white. Jugulum and breast with a scarcely appreciable wash of very light ashy, with very numerous, distinct, linear-oblong streaks of dusky brown; these extend as minute dots nearly or quite to the bill, and as narrow shaft lines, along the sides to the vent. Rest of under parts white, immaculate. Lower mandible flesh colored for half its length; rest of bill, with the legs and feet, black. *Young in August.*—Upper parts a nearly uniform dark ash, the black of the adults showing at intervals, but principally on the scapulars, where also the reddish margins of the feathers are apparent. Jugulum and sides under the wings with an ashy suffusion, more conspicuous than in the adult, but much more restricted, and the streaks more obsolete and indistinct. Central pair of upper tail coverts usually dusky. Other parts as in the adult.

Length 7·5, extent 15, wing 4·8 inches. Bill, tarsus and middle toe rather less than one inch.

*Habitat.*—North America, east of the Rocky Mountains. Europe.

The preceding diagnosis would characterize the species sufficiently well for all ordinary purposes; but in view of the great confusion which exists among authors, most of whom refer it to a very different bird, a somewhat extended account of its markings and variations appears necessary. A very perfect male, in breeding plumage, from Great Slave Lake, and an immature specimen of the same sex, obtained in Labrador during the month of July, are considered as respectively representing the adult and young, and taken as standards of comparison.

*Adult.*—The bill, which is quite stout, and somewhat expanded at the tip, rather less than an inch in length, and about equal to the head or tarsus. It is pretty constant, the difference in length between the longest and shortest billed specimens before me not exceeding the tenth of an inch. The lower mandible is flesh-colored for nearly half its length. The feathers extend on the side of the lower mandible but little if any beyond those on the upper, and their encroachment between the rami is not great. There is a white stripe over the eye, and a dusky one between the eye and nostrils, but both are very ill-defined. The general color of the upper parts is a light brownish ash; but on the back the feathers have such large blackish central fields, and so conspicu-

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ously reddish margins, that the original color is seen only on the rather broad tips of the feathers. On the scapulars the reddish deepens into bright sienna, which borders the feathers evenly, showing little or no disposition towards the scolloping so conspicuous in *Bairdiæ* and *minutilla*. Some of the scapulars, however, are simply bordered with the prevailing ashy, and all are tipped with it. The long narrow tertials are sooty brown, fading into ashy on the edges. The secondaries and greater coverts are greyish ash, the former much the lighter, both edged and broadly tipped with pure white. The lesser coverts are dusky brown, edged with lighter. The primaries are dusky, nearly black on their outer vanes and at the tips, their shafts brownish at base, gradually fading into pure white, which again darkens with black at the tip. The innermost primaries are quite conspicuously edged with white. The rump is dark sooty brown. The upper tail coverts are white, the outer series with sagittate dusky spots. The central tail feathers are sooty black, with narrow lighter margins; the rest a very clear light ashy, margined and tipped with pure white. The under parts are white; the throat, jugulum and breast with a scarcely appreciable wash of very light ashy, and very thickly streaked with well defined, narrow, linear-oblong marks of brownish black. These streaks, reduced to their minimum, extend as minute points nearly or quite to the bill, and, chiefly as narrow shaft lines, extend along the sides under the wings to the tail coverts, the dusky spots on the upper being the continuation of them. The other under parts are pure white and immaculate. The legs and feet are black.

*Young.*—The young differs very materially from the adult. The upper parts generally are of a nearly uniform dark greyish ash, the feathers with scarcely lighter margins. The black central fields and the reddish margins soon appear at irregular intervals, giving to the upper parts a more or less variegated appearance. The reddish is seen mostly on the scapulars. The wings and wing coverts are exactly like those of the adults, in this respect showing a remarkable deviation from the usual rule among the species of this genus, where an evidence of immaturity is to be found in the light ferruginous edgings of all the lesser wing coverts.\* The central pair of the upper tail coverts are wholly dusky, and, in addition to the sagittate spots on the outer series, the intermediate ones are sometimes marked in the same manner. The wash on the jugulum is considerably more conspicuous than in the adult, but at the same time it is much more restricted, and the streaks are fewer and very indistinct. It extends, however, along the sides much as in the adults. This state of plumage is identical with that exhibited by the *Tringa alpina* at the same age in all respects, except those of the reddish lesser wing coverts and black upper tail coverts of the latter species. Though the adults of the two species are very different, this close resemblance of the young was probably one cause of the two birds being confounded by American writers. Between the plumage of the adult and young, as characterized above, there are to be found birds of every intermediate stage. A specimen shot in the middle of August has already the markings of adult and young in nearly equal proportions, while a winter specimen agrees in almost every respect with the adult in breeding plumage described above. This species is also found in the peculiar dusky state of plumage, where all the features are very dark and scarcely relieved by ashy or reddish margins, already adverted to in the case of *Actodromas maculata*, *Bairdiæ* and *minutilla*. It is most probable that all the species of the genus are liable to this curious variation.

The relationships of this species are decidedly closest with the *A. Cooperi*, both having clearly the same form, and the pattern of coloration being very similar. The greatly superior size, however, of the latter, independently of the variegated upper tail coverts, different character of the spots beneath, and other

\* The same feature is seen in *Pelidna alpina* and *Americana*, a circumstance which would seem to indicate that the two genera are closely allied, as is indeed the case.

features, at once separates it without need of a more extended comparison. The larger size, pectoral wash, and black rump and upper tail coverts of *A. maculata*, at once distinguishes it, while the very diminutive proportions of *A. minutilla* render comparison equally unnecessary. Its relationships to the *A. Bairdii* have already been discussed.

It is a little extraordinary that with regard to so marked and well characterized a Sandpiper as the present, there should have arisen the confusion which until recently has prevailed among authors, nearly all referring it to a very different bird. To use the apt and expressive words of the General Report, it has been "sadly misnamed by American ornithologists." When in mature plumage it bears very little resemblance to the *Tringa Schinzii*, Brehm., which, according to the same authority, is "merely a smaller variety, or perhaps only smaller specimens of the common *Tringa alpina* —." This grave error probably originated from two causes: first, that Say, in his original description (the first notice of the bird by an American writer) designates it as *Pelidna cinclus*, var.; and secondly, that though the adults are as different as possible, the young of the two, as already stated, are nearly identical in plumage, almost the only difference lying in the proportions of the bill and feet; characters which, though important and essential, might readily be overlooked in birds of this group, in which the colors were similar. This similarity in the young and great difference between the adults of the present species and the *Tringa alpina*, var., caused Bonaparte, in his American Ornithology, to fall into a curious error. Under the head of *Tringa Schinzii*, Brehm., he describes the present species accurately, properly quoting the *Pelidna cinclus*, var. of Say; yet only the description of what he considered as the young "*T. Schinzii*" applies to the *A. Bonapartei*. For, speaking of the adult, he says: "This Sandpiper is well known to appear in a summer vesture analogous to that of *Tringa alpina*, at the same season, but we have never met with an American specimen in that state," and further on he describes adult European specimens as having "the breast almost entirely of a jet black color," clearly referring to the so-called *Tringa Schinzii*, i. e., to the smaller variety of the *T. alpina*. Nuttall, probably following Bonaparte, commits precisely the same mistake. Audubon's *Tringa Schinzii* is undoubtedly the present species, though the measurements given are rather those of *A. Bairdii*; and, for reasons stated elsewhere, I am inclined to think that his figure of the male was taken from an individual in the peculiar abnormal dusky state of plumage already so often adverted to. The descriptions of *Tringa Schinzii* by other American authors, and by those European writers quoted in the list of synonyms, all appear to refer to the true *Bonapartei*.

The description by Schlegel, in 1844, of *Tringa Bonapartei*, unmistakeably points to the present species, and, as it is the first distinctive specific appellation, must be employed. Parzudaki, in his Catalogue, very wrongly gives *Bonapartei*, Sch., as a synonym of *Pelidna maculata*, (*pectoralis* of Say.) *Scolopax pusilla* of Gmelin is in all probability the present bird, as particular mention is made of the white upper tail coverts; but from the brevity of the description, it is impossible to determine this point satisfactorily.

**ACTODROMAS (HETEROPYGIA) COOPERI** (Baird) Coues.—Cooper's Sandpiper.  
*Tringa Cooperi*, Baird, Gen. Rep. 1858, 716.

*Sp. char.* Largest of the group. Bill considerably longer than the head, exceeding the tarsus, straight, rather stout, tip scarcely expanded. Feathers extending on side of lower mandible scarcely further than those on the upper. Wings long, pointed, first primary decidedly longest; tertials moderately long and rather slender. Tail moderate, slightly but decidedly doubly emarginate, the central feathers projecting. Tarsus rather longer than the middle toe; tibia bare for half the length of the tarsus; toes all long, slender and slightly margined. *Adult in spring*.—Upper parts a nearly uniform light greyish ash,

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each feather with a central brownish black field, deepening into pure black on the scapulars, where also the edgings of some of the feathers have a reddish tinge. Tertiaries sooty brown, fading with light ashy on the edges. Secondaries and greater coverts dark greyish ash, edged and broadly tipped with white. Primaries deep dusky, almost black on the outer vanes and at the tips, the innermost edged with white; shafts of all brown at base and black at tip, the central feathers being white. Upper tail coverts white, with sagittate spots of dusky. Tail feathers ashy brown, the central pair darkest. Under parts white; the jugulum, breast, and sides of the neck with a slight reddish tinge, and, together with the sides, with numerous streaks and oval spots of dusky, which become large and V-shaped on the flanks.

Length (of skin) 9·5 inches; wing 5·75, tail 2·80, bill above 1·23, tarsus 1·14 middle toe 1.

*Habitat.*—Long Island.

In order to exhibit more fully the features and peculiarities of this curious Sandpiper, differing in many essential respects from any other described as North American, the following additional remarks may be required, that we may be better enabled to judge of its relationships and affinities, which are matters of some uncertainty. The characters are taken from the type of the species, the original of the description in the General Report.

The bill and feet though rather stout for an *Actodromas*, are slender in comparison with *Tringa*. The tip of the former is but slightly expanded, and rather obtuse. The grooves in both mandibles are long and distinct, that of the lower being narrow but deep. The position of the nostrils is nearly intermediate between *Tringa* and *Actodromas*. The nature of the encroachment of the feathers on the bill is identical with that of *A. Bonapartei*, and very different from that of *Tringa*. The wings are long and pointed, the first primary much the longest, as in *Tringa canutus*, and the graduation of the others exactly as in that species. The tertials are rather long, narrow, and flowing. The emargination of the tail, though not great, is decided; the central feathers project a little beyond the others, but are not much darker than the others; the outer pair are next in length, and the third are the shortest. The legs and feet are long and comparatively slender. The tibiae are long and much denuded, the bare portion being nearly two-thirds the tarsus. The latter is rather shorter than the bill, but at the same time slightly exceeds the middle toe and claw. The toes are all long, slender and slightly margined, and the hind one is well developed. The coloration of the upper parts is very different from that of *T. canutus*, and exceedingly similar to that of *A. Bonapartei*, almost the only difference being a rather less amount of reddish on the back. The rump and upper tail coverts are much the same as in *T. canutus* being white, with sagittate spots and waved bars of dusky. The pattern, and colors of the under parts, though agreeing with *A. Bonapartei* in the absence of a decided pectoral wash, are yet very different, the spots being sparse, and extending over the whole breast, instead of being very numerous and confined strictly to the jugulum and sides. In this respect it approaches the young *Tringa canutus* or still more the adult *Ereunetes pusillus*, the similarity being heightened by the slight reddish tinge on the jugulum.

Having thus presented the chief peculiarities of this very unique Sandpiper, we are prepared to discuss the question of its affinities. Were the size and proportions of bill, tarsus, and toes the same as in the *A. Bonapartei*, it might almost be a question whether it were not an accidental variety of that species; but the discrepancies in these particulars are too great to admit the doubt. The differences from all other species are sufficiently obvious. Granting, then, that it is a distinct bird, it only remains to settle the question of its generic relationships; which, as it presents a most remarkable combination of the characters of both *Tringa* and *Actodromas*, is a matter of some uncertainty. We cannot but think, however, that all the most important characters of the bird incline

towards *Actodromas*, rather than to *Tringa*, and that *A. Bonapartei* is its nearest ally. While the actual proportions of the bill, tarsus, and toe of *Tringa* are preserved, the difference in length of the bill over the tarsus, and of the latter over the middle toe, is very trifling, and in the latter case, moreover, it is produced by a slight lengthening of the tarsus rather than by any shortening or stoutening of the toes, which are long, slender, and slightly margined as in *Actodromas* proper. The claws are all long, slender, and slightly curved, while exactly the reverse is the case with *Tringa*. The tibæ are bare for a considerably greater extent, and the tibial feathers short. In the adults of *Tringa* these reach nearly to the joint. In the slight (though decided) double emargination of the tail, with its central feathers, but little different from the lateral, and in the pattern of the rump and upper tail coverts, there is shown a near approach to *Tringa*. The primaries are as in *Tringa*, but the elongated tertials are those of *Actodromas*. The stoutness of the bill and the position of the nostrils, are intermediate between the two, but the encroachment of the feathers is exactly that of *A. Bonapartei*. The coloration of the upper parts, except of the rump, is almost identical with that of *Bonapartei*, and that of the lower much nearer to it than to the adult *T. canutus*.

From the above considerations, especially in reference to the indications afforded by the legs, always important among the *Tringæ*, we cannot but conclude that the bird is *Actodromas*, rather than a true *Tringa*. Still we should hardly have ventured to change it from the position assigned by such high authority, had not Prof. Baird, in an attentive reexamination of the characters of the bird, acquiesced in our views, and expressed his entire approval of the course pursued.

In view of the many peculiarities presented, it might perhaps have been advisable to consider the present bird, instead of the *A. Bonapartei* as typical of *Heteropygia*. But as the two are very closely allied, and both subgenerically distinct from *Actodromas* proper, we have preferred to give the common and well known bird as the type.

The subject of the present article, is, with a single exception, we believe, the only known specimen of this excessively rare species. It is fortunately adult, having been taken in May. The changes of plumage it undergoes, and the extent of the variation to which it is subject, cannot therefore be given. They are, however, in all probability parallel with those of *A. Bonapartei*.

"It is possible that this species may have been previously indicated under some of the names quoted as synonyms, such as *Tringa noveboracensis*, &c., although, from the brevity of the descriptions, it is impossible to determine this point satisfactorily."—(BAIRD.)

Having thus passed in review the species of *Tringæ* well ascertained to inhabit North America, it may be well to notice those attributed by authors to that country. As far as I am able to ascertain they are the following:

#### ACTODROMAS MINUTA Kaup.

*Tringa pusilla*, Meyer. (Nec Linn.; nec Bechst.; nec Wils.)

*Tringa minuta*, Leisler. Swainson, F. B. A. 1831, ii. 385. Nuttall, Manual. 1834, ii. 119.

It is not impossible that this species should occur in North America, or that there should exist a "Pigmy" Sandpiper distinct both from the *A. minutilla* and the European species. Observation, however, does not as yet warrant the belief that such is the case.

#### ACTODROMAS TEMMINCKII Bon.

*Tringa pusilla*, Bechstein. (Nec Linn.; nec Meyer; nec Wils.)

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*Tringa Temminckii*, Leisler.

*Leimonites Temminckii*, Kaup.

*Tringa pusilla*, "Linn." Nuttall, Man. ii. 1824, 117. (Nec Linn.)

This species, a specimen of which we have never had the pleasure of examining, is given by Nuttall as an inhabitant of North America, though in all probability upon insufficient or erroneous data.

LIMICOLA PYGMÆA, Koch.

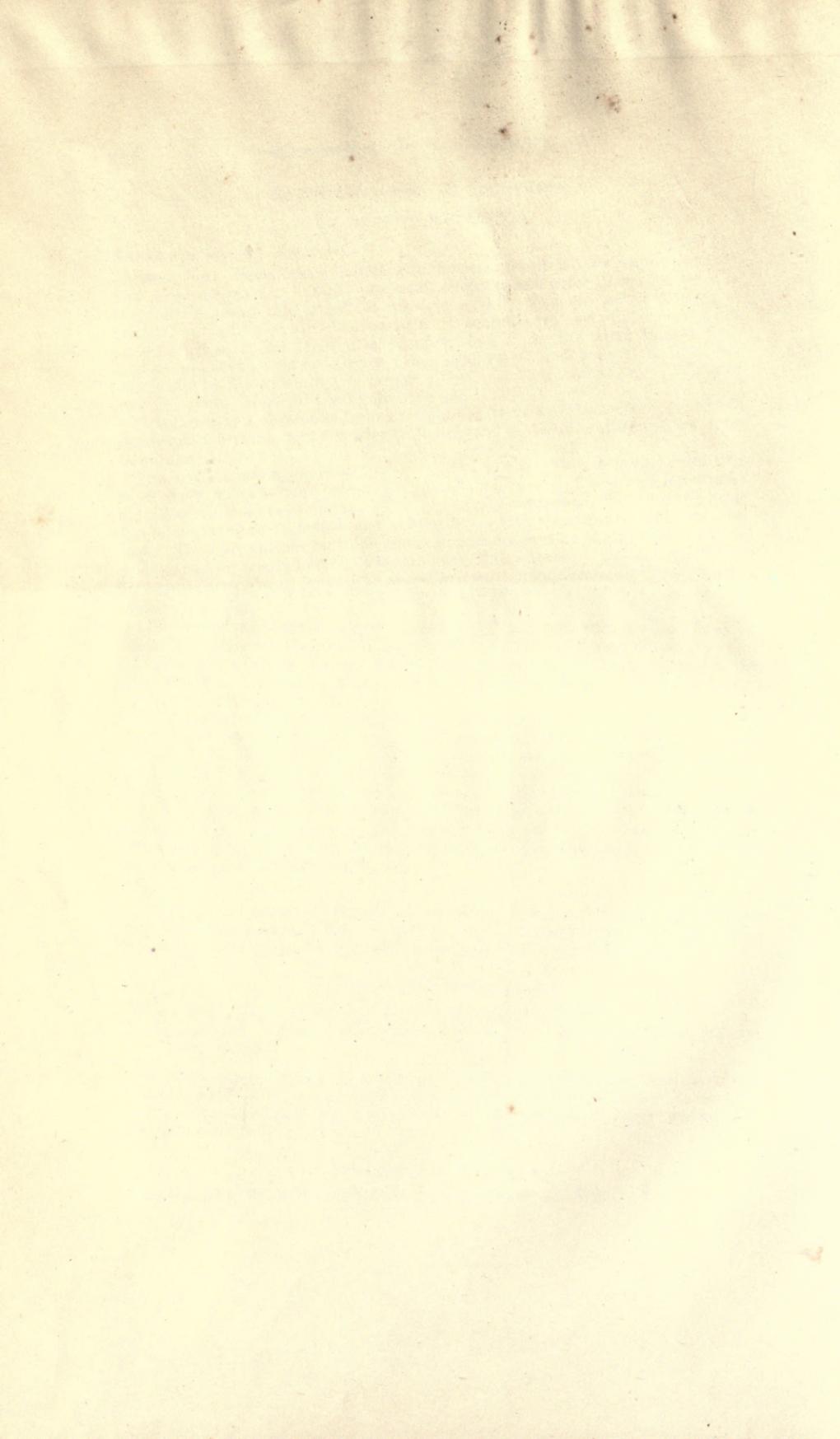
*Numenius pygmæus*, Latham.

*Tringa eloroides*, Vieillot, fide Parzudaki.

*Tringa platyrhyncha*, Temminck. Nuttall, Man. 1834, ii. 114.

This marked and very curious Sandpiper is stated by Nuttall to be "of very rare occurrence in the United States." I have never seen an American specimen, and its existence in that country must be considered as extremely doubtful.

In addition to the above, nearly all the short-billed species of *Totaninae* were considered by the older authors as *Tringæ*. *Tringa rufescens*, Vieill. of authors, though given as a *Tringa* as late as 1842, by Audubon, is in all essentials a true Tatler, and very closely related to *Actiturus*, Bonaparte.





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