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THE STATUS OF *LARUS RELICTUS* AND OF OTHER HOODED GULLS FROM CENTRAL ASIA

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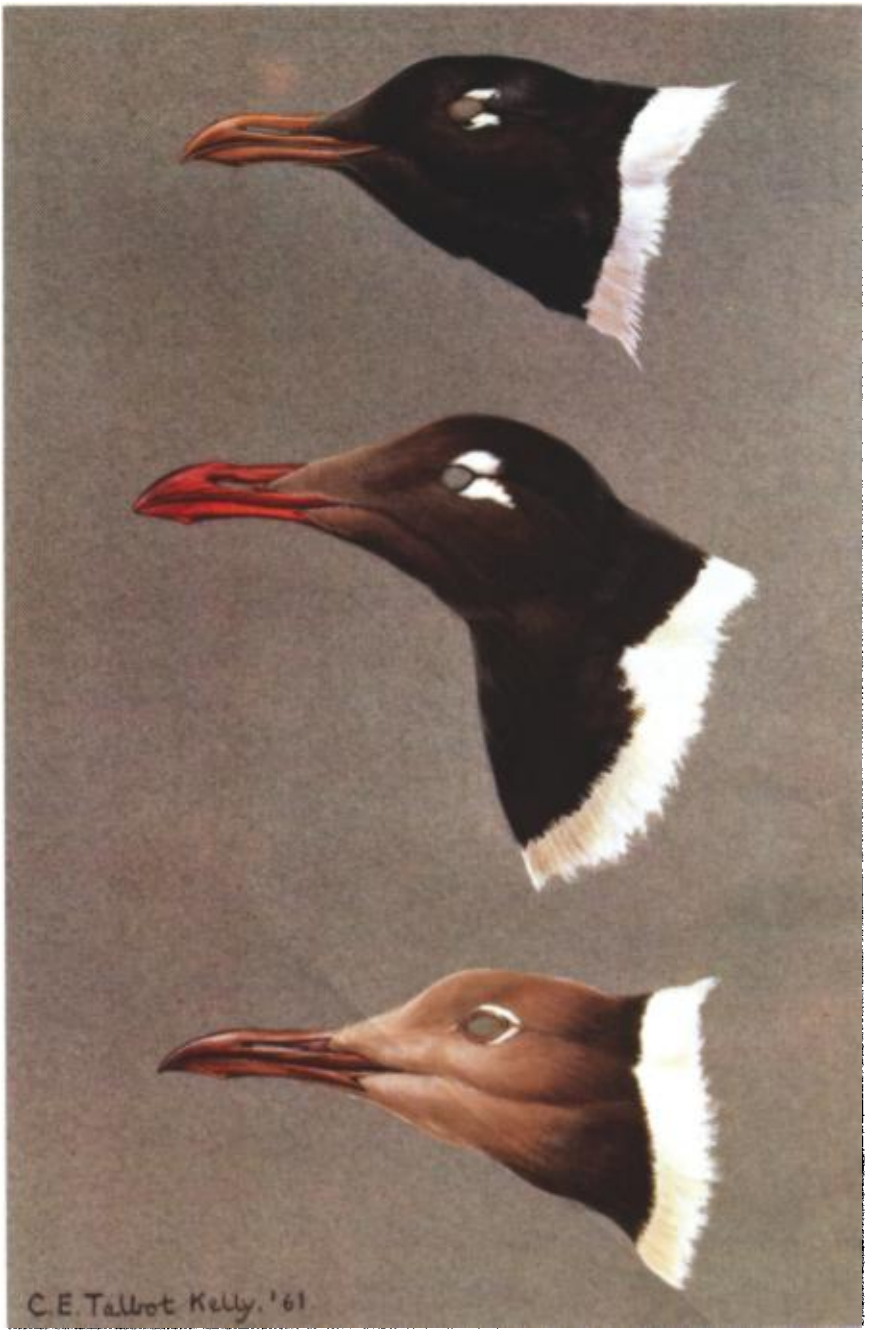
ON 24 April 1929 a single specimen of a strange hooded gull was collected by K. G. Söderbom, a member of Sven Hedin's expedition to eastern central Asia, at Tsondol, a remote locality on the Etsin Gol [River] in northern Inner Mongolia. According to Lönnberg (1931a), Tsondol is situated at 41° 53′ 30″ N by 101° 6′ 33″ E, or not far from Sogo Nor [Lake], called also Socha Nor on some maps, one of several lakes into which the Etsin empties. All these localities are in the province of Ningsia, the westernmost political division of Inner Mongolia, in the southern part of the Gobi Desert.

This specimen, which I have examined, is an adult hooded gull in breeding plumage, sex unknown. I believe it is a hybrid of *Larus ichthyaetus* (Great Black-headed Gull) and *L. brunnicephalus* (Brown-headed Gull), but Lönnberg (1931b) has named it *Larus melanocephalus relictus,* believing that it probably represents an individual of a relict and undescribed race of the Mediterranean Black-headed Gull.

The only other authors who seem to have discussed the status of *relictus* are Dementiev (1951: 525) and Mayaud (1956: 131). They did not examine the specimen from Mongolia, but Dementiev rejects the possibility that it is a form of *melanocephalus,* suggesting that it is an aberrant specimen of *brunnicephalus* misidentified by Lönnberg. Dementiev makes also the relevant observation that no other specimen of *relictus* has been found although Mongolia has been well collected. Mayaud merely comments on the remarks made by Dementiev, stating that Dementiev's hypothesis is very unlikely ("*bien peu vraisemblable*") and that it is best to admit provisionally that *relictus* is a very big *melanocephalus,* the range of which needs to be determined.

It is difficult to agree with Mayaud and Lönnberg. The latter (1931b) states that *relictus* "appears to resemble *Larus melanocephalus* more nearly than any other species." But *relictus* resembles *melanocephalus* only to



Heads (top to bottom) of *Larus melanocephalus, "relictus,"* and *brunnicephalus*. The specimens are adults in breeding plumage and were painted exactly as they are. But, in living birds during the breeding season, the bill of *melanocephalus* is red with a slight dusky subterminal band, and that of *brunnicephalus* is deep red.

TABLE 1
MEASUREMENTS OF SOME HOODED GULLS[1]
(in mm)

Form	*Wing*[2]	*Tail*	*Bill*[3]	*Tarsus*
relictus	340	123	53	59
minutus	217–232 (226.2)	82–92 (87.7)	28–34 (31.6)	22–28 (25)
melanocephalus	290–317 (300.7)	99–119 (111.3)	42–49 (44.5)	44–50 (46.9)
ridibundus	286–308 (298.6)	102–117 (111.6)	42–47 (45)	40–45 (42.8)
brunnicephalus	322–352 (337.1)	122–134 (126.5)	50–58 (53.5)	47–54 (50.3)
ichthyaetus	451–507 (480.7)	164–200 (180.8)	76–95 (83.2)	69–83 (75.2)

[1] The sex of the type of *relictus*, an adult, is unknown; the measurements of the other gulls are those of 10 adults consisting of five males and five females.
[2] Flat wing.
[3] Measured from the skull.

the extent that the posterior part of its hood is black (cf. frontispiece); moreover, the black area is duller in *relictus*, not so pure and deep black as in *melanocephalus*. The wing patterns of *relictus* and *melanocephalus* are totally different (Figure 1), and *relictus* is a much bigger bird (Table 1). As is clearly shown by Lönnberg's photograph, its tarsus gives the impression of being nearly twice as big.

The theory that *relictus* represents a relict population of *melanocephalus* presupposes that the range of this gull was once more or less continuous from the Mediterranean to the Gobi. But, at present, the nearest colony of *melanocephalus* is found at the western end of the Sea of Azov, 5,500 km from the Gobi. *Melanocephalus* breeds on the Black and the Aegean seas and is not highly migratory, remaining on or near the breeding grounds or migrating to the Adriatic and central Mediterranean, the latter forming the main winter quarters. A few individuals wander inland in a westward direction to reach the Baltic and North seas.

The Tethys Sea is often invoked to explain the present-day distribution of many animals, but its extensions into Asia occurred far too long ago to be relevant to our problem. At the time of its greatest northward extension during the middle and upper Cretaceous, it reached almost to the Aral Sea (cf. Ekman, 1953, Figure 23), and, farther east, via a separate tongue through what is now Ferghana, to the Tarim Basin, where, according to Norin (1941), it lingered throughout the Eocene. The oldest gull fossil known is more recent, dating to the Oligocene (Storer, 1960), but most gull fossils date only to the Miocene or later. I may add that Stegmann (1938), who has discussed the affinities of the Mongolian avifauna, denies categorically that it has been derived from the Mediterranean. In short, it seems most unlikely that *relictus* is a form of *melanocephalus*.

Mongolia is remote, but, as noted above, the birds of this region and of neighboring western China have been well collected. Kozlova (1930, 1932) gives a short summary of 10 expeditions (not including that of Söderbom)

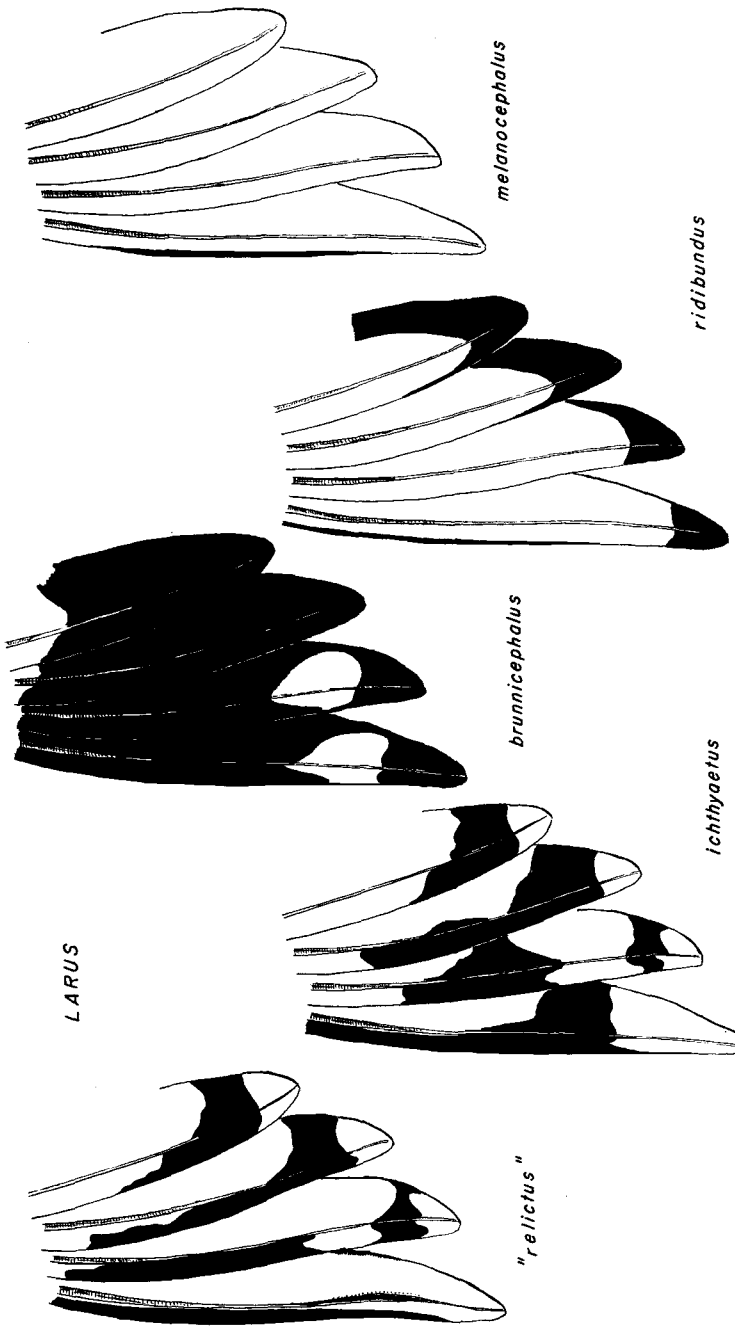


Figure 1. Pattern of the wing tip; the gulls shown vary in size and are not drawn to scale.

that covered these regions. Meise (in Stresemann, Meise, and Schönwetter, 1937) mentions eight additional expeditions. At least two collectors (Kozlov in 1908 and Beick at the end of 1932 and beginning of 1933) have collected along the lower Etsin River for periods of about three months. It is remarkable, therefore, that no other *relictus* has been found, and this suggests that the bird taken by Söderbom is indeed an aberrant specimen, a possibility that was not contemplated by Lönnberg.

If it is a hybrid, as I believe, a search for its putative parents must be narrowed to the hooded gulls that breed or migrate through Inner and Outer Mongolia and the neighboring regions of China. These are four, two with black hoods (*ichthyaetus* and *minutus*) and two with brown hoods (*brunnicephalus* and *ridibundus*). The Little Gull (*minutus*) is so tiny in every respect that it seems to be eliminated from consideration; moreover, its primaries are bluish-gray above, unlike those of the other gulls. But the color of the hood in *relictus* (cf. frontispiece) suggests that this bird is the offspring of a black-hooded gull that had bred with a brown-hooded one, and the only other black-hooded gull in the regions under consideration is *ichthyaetus*. The latter is not shown in the frontispiece, but its hood is identical with that of *melanocephalus* (which is shown) in color and extent, the only difference being that the white eye patches are more developed in *ichthyaetus,* actually as well as proportionately, and thus are similar to those of *relictus*.

Larus ichthyaetus is a very big gull (Table 1), and, at first, it is difficult to believe that it would mate with one of the other two considerably smaller brown-hooded gulls. Nevertheless, the similarity between the wing pattern of *ichthyaetus* and *relictus* (Figure 1) is extremely suggestive, the patterns of the third and fourth primaries (counting from the outside) being virtually identical. The wing pattern of *ichthyaetus* shown in Figure 1 is about average, but some individuals are whiter on the inner web of the first and second primaries and thus are even more similar to *relictus,* the black pigment falling far short of the outer margin of the web. The tarsus of *relictus* is also much longer, and considerably heavier and thicker than that of *brunnicephalus,* the bigger of the two brown-hooded gulls; it is nearly intermediate in size between that of the latter and *ichthyaetus*. The lengths of the wing, tail, and bill of *relictus* and *brunnicephalus* are similar, but it is of interest to note that the shape of the bill of *relictus* is similar to that of *ichthyaetus,* stronger and higher, and less slender, than in *brunnicephalus*. The intermediate coloration of the anterior part of the hood is obvious, but the white eye patches of *relictus* are big and, as noted, are similar to those of *ichthyaetus*.

All these characters suggest very strongly that *ichthyaetus* was one of the parents. But it is more difficult to determine the identity of the brown-

hooded parent. The breeding range of *ichthyaetus* overlaps that of *ridibundus* and *brunnicephalus,* but I believe the latter was probably the parent with the brown hood. It is considerably bigger than *ridibundus* (mistakenly called Black-headed Gull), has a much more pigmented wing, and its hood is mixed with black posteriorly. In *ridibundus* the brown hood is concolorous. The systematic relationships of *ridibundus* and *brunnicephalus* are discussed below.

One character of the hybrid that is not present in any of the other gulls mentioned is the great development of its hood. The pigment (cf. frontispiece) extends to the hind neck and onto the upper breast, and I have satisfied myself, as did Lönnberg, that this is not an artifact caused by the makeup of the skin. This posterior extension of the hood appears to be a "primitive" character, lost in the hooded gulls of Mongolia but retained in the two gulls of the Red Sea (*hemprichii* and *leucophthalmus*), which are generally regarded as the most primitive species among the hooded gulls. Perhaps modifiers control this character in the gulls of Mongolia but were not effective in the hybrid.

The two brown-hooded gulls of Mongolia and western China are undoubtedly separate species and were placed in different subgenera (*brunnicephalus* in *Cirhocephala* and *ridibundus* in *Hydrocoleus*) by Dwight (1925). It is doubtful that anyone would follow Dwight today, but to treat them as subspecies, as Stegmann (1935) would have us do, seems equally extreme in the opposite direction. Note should be taken also of Moynihan's (1959) misleading statement that "Stegmann (1935) has shown that [*brunnicephalus* and *ridibundus*] interbreed where their ranges meet"; Moynihan follows Stegmann in treating them as subspecies. But Stegmann has not shown that these two gulls interbreed regularly or that their ranges meet. All that Stegmann did was to report five specimens from Sinkiang, which he believed were hybrids of these two gulls, and, apparently misinterpreting the breeding range of the two species, to state that these hybrids show that "we must recognize" that the two gulls are conspecific.

Hybridization does not prove that two forms are conspecific, and interspecific hybrids are far from unknown among gulls. Hybrids of *fuscus* and *glaucoides* and of *marinus* and *hyperboreus* have been reported by Lönnberg (1919); *fuscus* and *argentatus* interbreed occasionally (see also Tinbergen, 1953); *melanocephalus* wanders occasionally to the North Sea and mixed pairs of this gull and *ridibundus* have been reported from the Netherlands by Vijverberg (1935); 11 species are involved in the long list of hybrids of the genus *Larus* published by Gray (1958), and of these *ridibundus* was the parent in five instances, although these were not "wild" hybrids; finally, witness "*relictus,*" the main subject of this paper.

The known breeding range of *ridibundus* in high central Asia consists of Tannu Tuva, and, according to Kozlova (1932), the lakes and rivers of northwestern and northern Outer Mongolia; to my knowledge, it has never been reported to breed in Chinese Turkestan. *Brunnicephalus* breeds from the Kun Lun and eastern Tsinghai (and probably also Kansu), south to the Pamirs and the Tibetan Plateau. In other words, the known breeding ranges of these two gulls are widely separated. There is no evidence to support the statement made by Stegmann (1935) that *ridibundus* breeds "throughout Turkestan and Mongolia" and that its breeding range borders ("*aneinandergrenzen*") on that of *brunnicephalus,* or that the breeding ranges "meet" as interpreted by Moynihan (1959).

It is possible, however, that some individuals wander far from their normal breeding range, and, lacking a mate of their own species, interbreed, a case that would parallel the interbreeding of *ridibundus* and *melanocephalus* in the Netherlands reported by Vijverberg (1935). Perhaps, the parents of the hybrids reported by Stegmann paired on their winter grounds, namely in India, which forms a part of the regular winter grounds of *ridibundus* and *brunnicephalus,* and, I may add, also of *ichthyaetus.*

The morphological differences between *ridibundus* and *brunnicephalus* are very sharp and have been mentioned above. The difference between the color of the primaries is striking (Figure 1), and, from a phylogenetic point of view, it seems significant to me that this difference exists also in the juvenal plumage. Indeed, the wing tip is wholly black in young *brunnicephalus,* whereas it is predominantly white in young *ridibundus.*

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SUMMARY

An adult hooded gull from Mongolia is discussed. It is known from a single specimen that had been described by Lönnberg as a subspecies (which he named *relictus*) of *Larus melanocephalus,* but the specimen appears to be a hybrid of *L. ichthyaetus* and *L. brunnicephalus*. The other hooded gulls breeding in or migrating through high central Asia are considered, and it is emphasized that *brunnicephalus* and *ridibundus* are probably separate species although some authors consider them to be conspecific.

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