

# American Museum Novitates

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY  
CENTRAL PARK WEST AT 79TH STREET, NEW YORK 24, N.Y.

NUMBER 1684

AUGUST 11, 1954

## Systematic Notes on Palearctic Birds. No. 8 Sylviinae: the Genus *Regulus*

BY CHARLES VAURIE

The following notes were made during a study of the Palearctic forms of the genus *Regulus*. I would like to express my gratitude to Dr. H. Johansen and Mr. R. M. de Schauensee for the loan of specimens.

### REGULUS REGULUS

In this species the populations of the British Isles and of Sardinia and Corsica were separated from nominate *regulus* Linnaeus in 1905 and 1906 by Hartert; the population of the British Isles as *anglorum*, type locality, Tring, on the basis of being darker, and the populations of Sardinia and Corsica as *interni*, type locality, Sardinia, on the basis of having the hind neck and crown ashy and the upper parts duller, less yellowish olive-green than nominate *regulus*. Examination shows, however, that *anglorum* and *interni* are so poorly differentiated that, in my opinion, their nomenclatural recognition is not warranted. As Meinertzhagen (1947, Bull. Brit. Ornith. Club, vol. 68, p. 28), who strongly questions the validity of *anglorum*, has already noted, comparison of specimens from Sweden and the British Isles shows that the differences between these populations are extremely slight and that they are not constant. My own comparison was made with specimens collected during the breeding season.

In the case of *interni*, eight specimens examined from Corsica and Sardinia show a tendency towards the duller upper parts and grayer hind neck noted by Hartert, but this tendency, which is discernible only if specimens from the islands are compared in series with birds from Sweden, is very slight and individuals in both series can be matched perfectly. The specimens of *interni* examined include the type and two

paratypes, out of the four specimens on which the description of this form was based.

The populations of the Azores, on the other hand, are exceptionally well differentiated. These populations, which were separated from nominate *regulus* as *azoricus* by Seebohm, 1883, type locality, Azores, on the basis of having a longer bill (the only character used by Seebohm), are resident on seven of the nine islands of the Archipelago. As stated by Hartert and Ogilvie-Grant (1905, *Novitates Zool.*, vol. 12, pp. 119-120) they are very variable in coloration, ranging from populations which, on São Miguel, are very yellow (olive buff) below to others which, on Santa Maria, are very pale and almost whitish below, "not at all like the dark San Miguel birds." The theory of these authors that these differences might be seasonal is invalid, as stated by Murphy and Chapin (1929, *Amer. Mus. Novitates*, no. 384, pp. 14-16), who show that the variations are geographical and have restricted *azoricus* to São Miguel and separated the populations of the six other islands as *inermis*, type locality, Pico.

All the populations of the seven islands differ from one another to a greater or lesser extent as follows. In the eastern group of the Archipelago, composed of the two islands of São Miguel and Santa Maria, a form with very yellow under parts (*azoricus*) is restricted to São Miguel, and a very pale form with whitish under parts (described below as a new subspecies) is restricted to Santa Maria as noted by Hartert and Ogilvie-Grant. In the central group of five islands the species breeds on Fayal, Pico, São Jorge, and Terceira, and in the two islands of the western group it is restricted to Flores. In these five populations those of Fayal and Pico are distinctly darkest above and below and are brownish rather than yellow below, the population of Pico being slightly paler below. They are the darkest populations of the Archipelago. The populations of São Jorge, Terceira, and Flores are very similar, the population of Terceira is slightly darker below and shows in some specimens a faint suggestion of the yellow pigments of the population of São Miguel, and the population of Flores is slightly paler above and below than the population of São Jorge. In this respect the characters of the population of Flores approach those of the population of Santa Maria, but taken in series birds from Flores are closer in their characters to the four populations of the central group than to the population of Santa Maria which I propose to separate, as follows:

*Regulus regulus sanctae-mariae* Vaurie, new subspecies

TYPE: A.M.N.H. No. 597265; Rothschild Collection; adult male; San Pedro, Santa Maria, Azores; March 3, 1903; Ogilvie-Grant, collector. Wing, 55; bill, 13.5.

Paler above and below than *azoricus* or *inermis*; under parts whitish, not yellow (olive buff) as in *azoricus* or brownish as in *inermis*; upper parts pale yellowish olive, less green and bright than in *azoricus*, less dark and green than in *inermis*; bill long as in these two races.

RANGE: Restricted to Santa Maria in the eastern Azores.

It may seem unnecessary to describe a third race from the Azores, but the small endemic population of Santa Maria differs distinctly from that of the darkest populations of *inermis* (Fayal and Pico) and from *azoricus* to the same degree than these differ from one another, and *sanctae-mariae* is fully or better differentiated than all the other generally admitted subspecies of *R. regulus* with the exceptions of *tristis* from the Tian Shan in which the black coronal bands have disappeared, or virtually so, and *japonensis* which has a broad white bar in the wing. The new race also seems worth naming to emphasize the population characters of these small islands.

The segregation of these characters may be influenced by environmental peculiarities. Santa Maria, which is more than 50 miles from São Miguel, is not of volcanic origin as are the rest of the Azores, its rainfall is less, and compared to São Miguel its vegetation which is scrub-like with zerophytic elements is very much poorer. Although Pico is more arid than Fayal the populations of these two islands are almost as dark, but Pico is only 4 miles from Fayal, and there is probably a certain amount of exchange between these two populations.

It is instructive to give (table 1) the land area of the islands and the distances which separate them. The distances are taken from the 1942 map of the United States Army Map Service, and the areas from a

TABLE 1  
LAND AREAS OF THE AZORES (IN SQUARE KILOMETERS) AND DISTANCES  
(IN MILES) SEPARATING THE ISLANDS (LISTED FROM EAST TO WEST)

| Island      | Area | Distances                       |
|-------------|------|---------------------------------|
| Santa Maria | 156  | 53 from São Miguel <sup>a</sup> |
| São Miguel  | 760  | 75 from Terceira                |
| Terceira    | 406  | 23 from São Jorge               |
| São Jorge   | 244  | 11 from Pico                    |
| Graciosa    | 62   | 24 from São Jorge               |
| Pico        | 441  | 4 from Fayal                    |
| Fayal       | 173  | 140 from Flores                 |
| Flores      | 164  | 11 from Corvo                   |
| Corvo       | 17   | —                               |

<sup>a</sup>Santa Maria is 159 miles from Terceira and 186 from Pico.

guide booklet published by the Empresa Insulana de Navegação, Lisbon, which serves the islands.

The species straggles occasionally to Graciosa but does not breed there, and it is not reported from Corvo. These islands may be too small but more probably its absence is due to the lack of suitable habitat. I have spent several months in the Archipelago, and I was impressed by the aridity of Graciosa and its almost total lack of trees or even bushes, and on Corvo there is virtually only grass. It should be noted that *R. regulus* in the Azores is, of course, not restricted to conifers.

This study was based on 65 specimens distributed as follows: Santa Maria five, São Miguel 19, seven each from Terceira and São Jorge, Pico 10, Fayal 11, and Flores six.

#### THE HIMALAYAN AND CHINESE POPULATIONS

In Asia the populations found from the eastern Himalayas eastward to Szechwan, Tsinghai, and Kansu have been referred in the literature to *himalayensis*, *sikkimensis*, and *yunnanensis*, the names of three valid subspecies. The range of *himalayensis* does not extend so far east, however, and the ranges of the other two are virtually unknown, because very few specimens collected during the breeding season are available.<sup>1</sup> The distinguishing characters of the three races are presented below, and an attempt is made to define the ranges of *sikkimensis* and *yunnanensis*.

*Regulus r. himalayensis*, Jerdon, 1863, the type of which probably came from Simla, according to Meinertzhagen (1926, Bull. Brit. Ornith. Club, vol. 46, pp. 97-98), or from near-by Kotgarh, according to Ticehurst (1926, Jour. Bombay Nat. Hist. Soc., vol. 31, p. 499), is the palest race. It is very similar to nominate *regulus* but is separable from it in series by being somewhat paler above and somewhat more grayish on the nape and sides of the neck. The breeding range of this race is from the Safed Koh and the Afghanistan border eastward in the northwestern Himalayas to presumably Garhwal. East of the range of *himalayensis*, from Nepal, at least in the eastern part, and in Sikkim this race is replaced by a distinctly darker race with greener upper parts (*sikkimensis* Meinertzhagen, 1926, type locality, Sikkim) which is intermediate in coloration between *himalayensis* and *yunnanensis* Rippon, 1906, which is the darkest race, darker green above than *sikkimensis*, more saturated below, and slate rather than gray on the nape. The type locality of *yunnanensis* is "Yang-

---

<sup>1</sup> The eastern races of this species or some of their populations show definite and extensive migratory movements.

tze River, western Yunnan." According to Rothschild (1926, *Novitates Zool.*, vol. 33, p. 312) the specimens on which *yunnanensis* is based were collected by Rippon "at the Yangtze Big Bend in February and March."

The only records of *yunnanensis* taken during the breeding season that I can find in the literature are those of specimens reported by Stone (1933, *Proc. Acad. Nat. Sci. Philadelphia*, vol. 85, p. 211) which were collected on July 1 and 2 and August 8 in northern Szechwan in the region of Sungpan. Riley (1931, *Proc. U. S. Natl. Mus.*, vol. 80, art. 7, p. 65) has also reported *yunnanensis* from this region on the basis of three specimens in the collection of the United States National Museum, but he does not state the localities or dates at which these specimens were collected. Ludlow (1951, *Ibis*, p. 565) has identified as *yunnanensis* a small series taken from December 24 to January 29 in Pome in southwestern Sikang, and a juvenal specimen taken on August 16 at longitude 95° E. in the eastern Himalayas. There is some reason to doubt, however, that these specimens are true *yunnanensis*, for although Ludlow states that his specimens are darker above than *sikkimensis* he adds that they are paler below, whereas in true *yunnanensis* the under parts are darker, not paler, than in *sikkimensis*.

Thanks to the courtesy of Mr. R. M. de Schauensee I have been able to examine the specimens collected by the two Dolan expeditions. The specimens collected during the breeding season reported by Stone are dark and differ from *sikkimensis* examined from eastern Nepal through the differences cited above. They are identical with specimens collected in northern Yunnan from October to March. A lone specimen taken on October 2 in the Tsingling Range in Shensi is somewhat less dark but comes closest in its general coloration to the dark specimens from Szechwan and Yunnan. Assuming that my dark birds from Yunnan were native birds one may define the range of *yunnanensis* as extending eastward from northern Yunnan through Sikang (probably), to northern Szechwan and Shensi. In the west specimens that are dark above and may come closer in this respect to *yunnanensis* than to *sikkimensis* may occur as far as Pome and the easternmost Himalayas.

Concerning the range of *sikkimensis*, Meise (1937, *Jour. Ornith.*, vol. 85, p. 518) has identified as *sikkimensis* a series of 22 specimens collected from October 4 to May 9 on the borders of Tsinghai and Kansu east of the Koko Nor. Only one of these specimens was collected in May, eight were collected from April 16 to 25, and the others from October to March 18, but some of the specimens were approaching breeding condition, and the species is said to be resident as well as a migrant in this region. I have examined five of these specimens collected from Decem-

ber 31 to March 18. I find that they are slightly paler above than *sikkimensis*, less green, and somewhat paler gray on the nape. But I agree with Meise that this population is better referred to *sikkimensis* than to *himalayensis*, for it comes very much closer in its general coloration to *sikkimensis* than to *himalayensis* which, as stated above, does not reach the eastern Himalayas.

The specimens collected by the second Dolan expedition were collected in eastern and central Sikang in the regions of Hokow, Litang, Batang, and Beyu north of Batang from, according to the original labels, September 13 to February 7. These specimens were identified as *himalayensis* by Schäfer (1939, Proc. Acad. Nat. Sci. Philadelphia, vol. 90, p. 234) but are, I find, identical with *sikkimensis*. There is no certainty that these specimens and the five from Tsinghai were on their breeding grounds. But if it be assumed that they were native to these regions, the range of *sikkimensis* may be defined as extending eastward from eastern Nepal and Sikkim through Sikang (north of *yunnanensis*) northeastward to Tsinghai and Kansu. In winter, *sikkimensis* migrates south to the Yangtze Valley. I have examined it from Wanh sien in eastern Szechwan, collected on December 24.

Meise states that *coatsi* Sushkin, 1904, type locality, western Sayan, replaces *sikkimensis* as a breeding form just to the north (in southern Nan Shan) of the region where his 22 specimens of *sikkimensis* were collected, but I doubt if this is correct. Meise's statement is based on two specimens collected in October which he states he does not believe were migrants from Siberia. They could have been, for Kozlova (1933, Ibis, p. 305) says that *coatsi* is migrating southward through Mongolia during September and October, and the breeding grounds of *coatsi* are in the Sayans and western Siberia far to the north of the Nan Shan.

Through the courtesy of Dr. H. Johansen I have been able to examine a good series of *coatsi* from his Siberian collection. The affinities of this form, in my opinion, are with *japonensis*, with which it shares broad white markings on the wing, rather than with nominate *regulus* or *sikkimensis*, although a gap in distribution separates *coatsi* and *japonensis* in Transbaicalia, whereas the western populations of *coatsi* are continuous with those of nominate *regulus*, the two races intergrading in the eastern part of the western Siberia taiga in the region of Tomsk, according to Johansen (1952, Jour. Ornith., vol. 92, for 1944, p. 192).

Three distinct groups of races seem to be represented in central Asia: the *japonensis* group with *coatsi*; the aberrant and monotypic *tristis* of the Tian Shan; and the nominate *regulus* group to which *yunnanensis* and *sikkimensis* seem to be related through *himalayensis*, for this last

form is difficult to distinguish from nominate *regulus* although widely separated from it geographically.

### REGULUS IGNICAPILLUS

The population of the Balearic Islands and of north Africa have been separated nomenclaturally from nominate *ignicapillus*, the first as *balearicus* by von Jordans in 1924 and the second as *laeneni* by van Marle and Voous (1949, *Ardea*, vol. 37, p. 125, type locality Camp des Chênes near Blida, northern Algeria). Hartert and Steinbacher (1934, *Die Vögel der paläarktischen Fauna*, suppl. vol., p. 204) state that *balearicus* is a very questionable form, but for reasons stated below I consider that it is probably valid and that *laeneni* is synonymous with *balearicus*.

In *balearicus* and *laeneni* the females are said to have an orange crown similar to that of the males, not yellow as in female nominate *ignicapillus* from continental Europe, and both sexes are said to be paler below than in the latter. Van Marle and Voous observe that it is possible also that the upper parts are slightly purer green in *balearicus* and *laeneni*. These authors separate *laeneni* from *balearicus*, stating that in the females of the former the color of the crown "seems" to be still closer to that of the males and that in both sexes the under parts are slightly darker and decidedly tinged with buff. They also state that the wing tip is rounder in *laeneni* than in nominate *ignicapillus*.

I have examined only one specimen from the Balearics, a male taken by von Jordans, but in this specimen the under parts are identical in coloration with specimens in similar plumage examined from north Africa. In these specimens from the Balearics and Africa the under parts are slightly but distinctly paler and grayer, less brownish, than in nominate *ignicapillus*, and the upper parts appear to be very slightly brighter. In four females from north Africa the crown is yellow, not orange, and identical with that of female nominate *ignicapillus* from continental Europe. A difference in the wing tip is not apparent. In specimens from north Africa the difference between the longest and shortest primaries is: males, 9, 9.5, 10, 10, 11.5; females, 8.5, 9, 11, 11, as against 10–11.5 in males and 9–10 in females from Europe. The specimens examined from north Africa consist of five taken on their breeding grounds in northern Morocco (see Lynes, 1924, below) from March 21 to May 6, one taken in the Aures in Algeria on May 11, and three from northern Tunisia taken April 13–14. All show the pale under parts mentioned above.

I cannot comment on the color of the crown in females from the Balearics, for they are not available to me, but it is possible that this character may not be constant. For instance, van Marle and Voous men-

tion that they have been informed that the crown is orange in a female from Corsica, but in a female examined by me from this island it is pure yellow. On the assumption that the specimens examined by van Marle and Voous were properly sexed it is possible that in some local population the color of the crown is similar in both sexes, but this requires confirmation. Such a character should be obvious, but Lynes (see below), who was a careful observer, made no mention of it in breeding females observed and taken in north Africa. The populations of north Africa and the Balearics can be separated, as *balearicus*, from nominate *ignicapillus* on the sole basis of paler under parts, but the differences in the color of the under parts between the populations of north Africa and the Balearics noted by van Marle and Voous do not seem very convincing or sufficiently well marked to warrant the recognition of *laeneni*, and, as stated above, I cannot separate a male from the Balearics from males from north Africa.

Van Marle and Voous state that *R. ignicapillus* "must be a rare bird in North Africa, whence it was previously recorded only as a casual wintering bird." This statement requires comment, for Lynes (1920, *Ibis*, p. 293) found the species "common" in the Middle Atlas and reports nest as well as specimens in juvenal plumage in June and a female accompanied by her brood on July 8. Lynes (1924, *Novitates Zool.*, vol. 31, p. 74) found it "plentiful" in northern Morocco and observed paired individuals building a nest and another female carrying nesting material. Snow (1952, *Ibis*, p. 490), whose observations were made after the description of *laeneni*, states that he saw the species "commonly" in Tunisia and Algeria, and he cites the published data that he has found as to its breeding in north Africa. I do not know whether or not it has been established that individuals (from continental Europe?) reach Africa in the winter.

The populations of Corsica and Sardinia are sometimes referred to *balearicus*, but four specimens examined from Corsica and 10 from Sardinia show that these populations are typical nominate *ignicapillus*.

The kinglet of the Canaries (*teneriffae* Seebohm, 1883) has correctly been removed recently from *R. regulus* to *R. ignicapillus* by Volsøe (1951, *Vidensk. Meddel. Dansk Naturhist. For.*, vol. 113, pp. 104–106). This author points out that the song of *teneriffae* is similar to that of nominate *ignicapillus* and is different from that of *R. regulus*, and that *teneriffae* is closer morphologically to nominate *ignicapillus* than to *R. regulus*, although it lacks the white superciliary stripe of *ignicapillus* and has gray lores as in *regulus*. In the neighboring population of *R. ignicapillus* found on Madeira (*madeirensis*) the white superciliary stripe is more reduced,



however, than it is in nominate *ignicapillus*, and, on the ground of the geographical distribution of the two species, it is logical to believe that the population of the Canaries is more closely related to *R. ignicapillus* than to *R. regulus*. *Regulus regulus* does not occur south of the Pyrenees, where it is replaced as a breeding form by *R. ignicapillus* in the Iberian Peninsula, north Africa, and Madeira. *Regulus regulus* is the form of the Azores, but these populations probably represent, as Volsøe suggests, a comparatively recent expansion from *R. regulus* after this form and *R. ignicapillus* had become separate species as a result of their isolation during glacial times.





