

THE EVENING GROSBEAK (HESPERIPHONA), THE
ONLY AMERICAN GENUS OF A PALAEARCTIC
GROUP.

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My anatomical, chiefly osteological, study of finch-like birds (Fam. Fringillidae of current systems, and allies), has led me to the conclusions concerning the systematic relations within this group which I have briefly summarized in the Bull. Brit. Orn. Cl. November, 1924. Whereas the Buntings have been found to form a group, perhaps a family, by themselves, and the "English" Sparrow (*Passer*), with a few allied genera, proves to belong to the Weaver-birds (*Ploceidae*),¹ the remainder of the *Fringillidae* have been found to consist of three groups: *Fringillinae* (perhaps only the genus *Fringilla*—Chaffinches and Brambling), *Carduelinae* (Goldfinches, Bullfinches etc.), and *Cardinalinae* (Red Cardinal and allied genera).

The geographical relations of these groups are remarkable. *Emberizidae* are strongly developed in the Neotropic and Nearctic, forming here a great number of endemic genera; the old world *Emberizidae* present a group by themselves. *Cardinalinae* are exclusively American. Of the *Carduelinae*, the great majority belong to the Palearctic, quite a number are Ethiopian, but no genus is certainly Oriental. Only few of the *Carduelinae* are peculiar to America and almost all belong to the Eurasian genera. The only exception is *Hesperiphona*, an endemic American genus.

Within this subdivision, *Carduelinae*, the Grosbeaks or Hawfinches present a small group of genera by themselves. Their most important external characters are: heavy conical bill; small, obliquely oval nostril set closely in an incisure of the horny sheath; the culmen of the last sends out an angular projection which bounds the nostril dorsally; there is no projection or swelling of the upper border of the nostril. The palatal surface of the horny bill presents a median ridge and a pair of lateral ones, all three sharp and prominent, and behind them a pair of flat knobs, finely

¹Cf. also Newton's Dictionary of Birds p. 897.

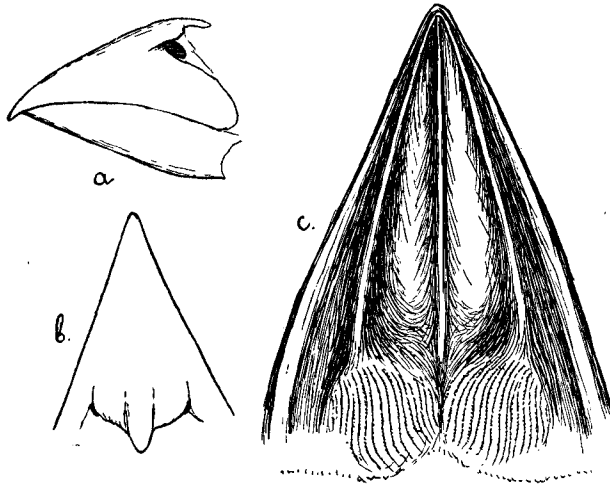


Fig. 1. *a, b*, bill of *Coccothraustes*. *c*, horny palate of *Hesperiphona*.

ridged, meeting at the middle line. In the lower jaw, corresponding to these knobs is a pair of similar ones, supported by a special dilatation of the bone. The whole structure forms a kind of nut-breaker for splitting hard seeds. The skeleton is essentially Cardueline. The skull, while differing in minor, mostly adaptive, details from the other Cardueline genera (strong impression of temporal muscles, massive palatines, etc.), shows typical Cardueline characters of which I shall mention here the characteristic lateral projection (marked by an asterisk on the figures) of the anterior process of the palatines.

The following genera show the external features just mentioned. *Coccothraustes*, *Eophona*, *Mycerobas*, *Perissospiza* and *Hesperiphona*. In *Coccothraustes*, *Eophona*, and *Hesperiphona* I have examined skeletons too and found them essentially alike. Of other *Carduelinae*, perhaps the nearest genus is *Chloris* but it does not show anything of the peculiar "nut-breakers" of the palate.

Of the other American heavy-billed Finches, which are sometimes designated as Haw-finches or Grosbeaks, I have also examined, osteologically, *Richmondia*, *Pheucticus*, *Zamelodia*, *Guiraca*, *Cyanocompsa*, *Oryzoborus*, and *Geospiza*. They show nothing of

the features of Haw-finches above described save a purely adaptive similarity in their heavy bill, and present a group by themselves. The bony palate of the Red Cardinal may serve as an example for this group.

Thus, *Hesperiphona* belongs to the Haw-finch subdivision of Cardueline Finches which is typified by *Coccothraustes*; it presents the only peculiarly American genus of the Haw-finch group, and the only genus of the whole Cardueline tribe endemic to America. Other American "Grosbeaks" are Cardinaline.

The Zoögeography of the old world Haw-finches is as follows.

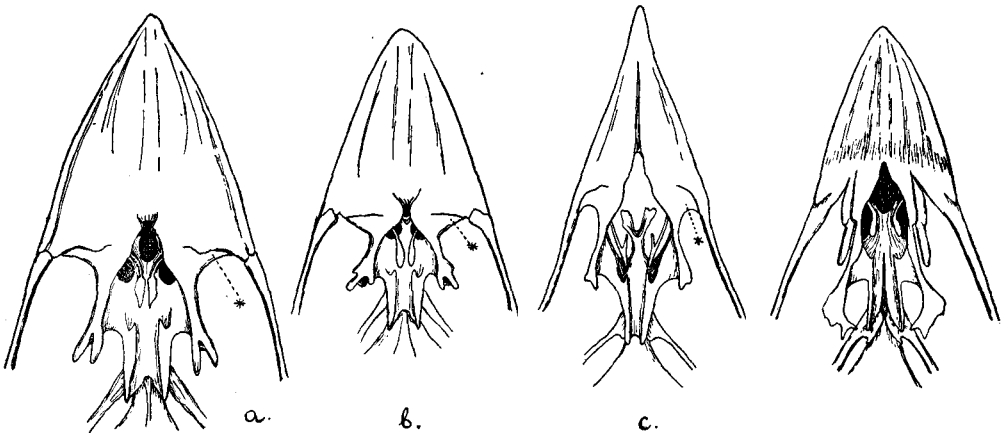


Fig. 2. a, bony palate of *Hesperiphona*, b, of *Coccothraustes*, c, of *Chrysomitris spinus*, d, of *Richmondia*.

Coccothraustes. Transpalaeartic, from Western Europe and Algeria to China and Japan.

Eophona. China, lower Amur, Japan.

Mycerobas. South of High Asia from Turkestan to Western China.

Perissospiza. Himalaya and south of Tibet.

Of these, the nearest to *Hesperiphona* is the Himalo-Tibetan *Perissospiza*, which is extremely similar in the shape of the bill¹

¹ The tooth of the tomia attributed to *Perissospiza* is individually inconstant.

while *Hesperiphona abeillii* is singularly like it in the coloration of the adult male.

Thus, *Hesperiphona* shows clearly its palaeartic, and in particular, Himalo-Tibetan relations. This agrees perfectly with the range of *Hesperiphona* in America, i. e. the western part of the Nearctic, east as far as western Alberta, Rocky Mts. of Colorado, and New Mexico, to the south reaching the highlands of Southern Mexico. Farther east, across the prairies, it has spread only recently feeding on the ash-leaved maple trees planted around the farms.² So in this case, as in many others, when the faunae of North America and Asia are compared it is found that of the elements which demonstrate relationship between the two, those confined to the northwestern parts of North America show a more intimate relationship to Asiatic forms, while in the more southern ones the relationship is less intimate. This relationship may date back to the land connection which brought over from Asia the ancestors of Titanotheres.

I wish to express my obligations to Mr. Outram Bangs for friendly help of every kind during my stay in Cambridge and for putting at my disposal the rich materials of the Museum of Comparative Zoölogy and to Mr. G. Van Tyne for procuring two freshly caught Evening Grosbeaks for my studies.

CONCLUSIONS.

1. *Hesperiphona* belongs to the Haw-finch group of the Cardueline section of the Fringillidae.
2. *Hesperiphona* presents the only genus of the Cardueline section endemic to America and, at the same time, the only true Haw-finch or Grosbeak of America; other American Haw-finches or Grosbeaks being Cardinaline.
3. The nearest relative of *Hesperiphona* is the Himalo-Tibetan *Perissospiza*, which shows the south-Asian relations of the former. To this corresponds the range of *Hesperiphona* in America.

A PRELIMINARY ARRANGEMENT OF NORTH AMERICAN GENERA OF FRINGILLIDAE AND ALLIED GROUPS.

I give here, at the friendly suggestion of the Editor of 'The Auk,' Dr. Witmer Stone, an arrangement of the North American

² For this interesting fact, I am indebted to Mr. Outram Bangs.

"*Fringillidae*" according to the system based on internal anatomy which I have proposed in the Bull. B. O. C. for Nov. 1924.

I wish to make it clear that, as my anatomical studies are not yet finished, I am not quite sure concerning the position of some of the genera.

The genera or higher groups exclusively American are printed in capitals, groups not represented in America are in brackets and those of which the skeleton has been examined are marked with an asterisk (*).

Superfamily FRINGILLOIDEI

Fam. *Fringillidae*

[Subfam. *Fringillinae*]

Subfam. *Carduelinae*

**HESPERIPHOMA*, **Pinicola*, **Pyrrhula*, **Erythrina* (= *Cardopodacus*), **Loxia*, **Leucosticte*, **Acanthis*, *Astragalinus*, **Spinus*

Subfamily CARDINALINAE

**RICHMONDENA* (= *Cardinalis*), *PYRRHULOXIA*, **ZAMELODIA*, **GUIRACA*, **SPOROPHILA*, *TIARIS*

[Fam. *Ploceidae*]

[Subfam. *Passerinae*—Passer introduced into America]

[Subfam. *Viduininae*]

[Subfam. *Ploceinae*]

[Fam. *Drepanididae*]

Superf. EMBERIZOIDEI

Fam. *Emberizidae*

**Plectrophenax*, **Calcarius*, *RHYNCHOPHANES*, *POOCAETES*, **PASSERCULUS*, *AMMODRAMUS*, *PASSERHERBULUS*, *CHONDESTES*, **ZONOTRICHIA*, **SPIZELLA*, **JUNCO*, *AMPHISPIZA*, *PEUCAEA*, *AIMOPHILA*, *MELOSPIZA*, *PASSERELLA*, **ARREMONOPS*, **PIPILO*, *OREOSPIZA*, *PASSERINA*, **SPIZA*, **CALAMOSPIZA*.

FAM. TANGARIDAE.

FAM. ICTERIDAE

FAM. COEREBIDAE

Some remarks will be opportune.

As to the order of the Emberizine genera, I have adopted that of the A. O. U. 'Check List' only for the sake of convenience; since for many genera it does not correspond to their affinities as shown by their internal anatomy.

Loxia is nothing but an adaptively modified Siskin.

Leucosticte has nothing in common with the genus *Montifringilla* where it has been put by Sharpe and Dr. E. Hartert and which

belongs to the Passerine subfamily of the *Ploceidae* in the sense of this arrangement.

Cyanocompsa is surely distinct from *Guiraca*, and is a near relative of the Red Cardinal (and still more so, of *Pheucticus*).

Tiaris is most intimately related to the famous Galapagoes finches, *Geospiza*, presenting one instance more of the affinities between the fauna of the Galapagoes and Antilles [It is to be noted that *Certhidea* is a modified form of the same, Geospizine assemblage, and not Mniotiltine.]

Of *Passerina* I am not yet sure; certainly, however, it stands in no near relation to *Guiraca*.

Calamospiza is quite certainly Emberizine, and not very remote from *Junco*.

Spiza is a very remarkable type. It presents no marked affinities with any of the American—at least, North American—*Emberizidae* and represents a connecting link between *Emberizidae* and *Icteridae*. Its placing in one or the other of these families is rather a matter of convenience. It is certainly an ancient, rather isolated genus. I agree with the suggestion made by Mr. O. Bangs during our discussions concerning the affinities of *Spiza*, that its very archaic, intermediate character may explain the evident retreat of this genus in recent times, manifested by the restriction in the range of *S. americana*, and by the total extinction of another species, *S. townsendi*.

Mus. Comp. Zoology, Cambridge, Mass.

GENERAL NOTES.

Notes on the Black Skimmer, in Maine.—That there was an irruption of Black Skimmers (*Rynchops nigra*) reaching the shores of the Gulf of Maine the last few days of August and early September, 1924, is a fact that has been chronicled. The following definite instances of the recent occurrence of the species in the State have been handed to the writer for permanent preservation.

Mr. E. B. Sawyer of Jonesport writes that after a "southern hurricane passed us off shore" three Black Skimmers appeared the last few days of August at Sandy River Beach about three miles from Jonesport. They remained in the vicinity for several days and were never seen to feed or to