

SPECIES FORMATION IN  
THE BLUE MONARCH FLYCATCHERS  
GENUS *HYPOTHYMIS*

by

A. L. Rand<sup>1</sup>

Unexpected discoveries in the geographical variation of the blue monarch flycatchers in the Philippines led me to a brief survey of the genus. Findings on taxonomic treatment and ideas regarding speciation and zoogeography, especially in relation to the Philippines, are presented here.

The Philippine archipelago's avifauna is in part that of a fringing archipelago type, the result of colonization and simple evolution of endemic forms in island isolation. The bleeding heart pigeon (*Gallicolumba luzonica*) is a good example. It is a very distinct endemic Philippine species with seven island forms, currently called subspecies though some are so different they could be called species. Multiple invasions, probably four, are responsible for the four species of white-eyes (*Zosterops*) on the Philippines with as many as three species on a single island (Luzon) and two species, but not always the same two, on others. The genera *Pachycephala* and *Hypsipetes* show more complicated situations.

However, the Philippine avifauna also has elements indicating that certain secondary radiation has occurred, of a type recalling that on oceanic islands. This is shown by the babblers of the genus *Stachyris* of which there are 9 endemic species. These fall into three groups, each more closely related among themselves and to each other than they are to any of the seven Borneo species all of which presumably are of the same ancestral stock. The flowerpeckers of the genus *Dicaeum* and the sunbirds of the genus *Aethopyga* again provide more complicated examples of radiation in the Philippines.

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1) Field Museum of Natural History, Chicago

The genus *Hypothymis* seems to present a series of stages in species formation, to be outlined below.

The preliminary step in discussing this is to work out the nomenclature and the taxonomy in detail.

The genus *Hypothymis* has three species, two of them endemic in the Philippines and one much more widespread. All three exhibit geographical variation of varying degrees of distinctness. The present and the proposed classification, as outlined below, indicate the extent of the changes in taxonomy my studies indicate :

Present	Proposed
<i>H. azurea</i> (many subspecies)	<i>H. azurea</i> (many subspecies)
<i>H. puella</i> (2 subspecies)	<i>H. helenae</i> (3 subspecies)
<i>H. helenae</i> (no subspecies)	<i>H. coelestes</i> (2 subspecies)
<i>H. coelestes</i> (no subspecies)	

#### THE GENUS.

*Hypothymis* with three species is a genus probably derived from *Monarcha* stock, and thus of New Guinea–Australian origin. Its range is that of its widespread species, *H. azurea* : from the Himalayas to Sula Islands in the western Moluccas and to Flores and Alor in the eastern Lesser Sundas. The genus *Monarcha* is species rich in the New Guinea area (a dozen or so species or species groups) with its western limits in the Moluccas (including Sula Islands) and to Sumbawa in the Lesser Sundas. The two genera overlap only in the central Lesser Sundas (Simbawa and Flores) and in Sula Islands. This nearly complete geographical replacement, if observed between two similar species could be called near mutual exclusion and could be considered as evidence of close relationship. Perhaps it also applies to these two genera. In any case it appears that where the two genera meet, they are barriers slowing down each other's colonization efforts.

It has been suggested that *Hypothymis* Boie 1826, and *Monarcha* Vigors and Horsfield, 1827, be merged, and *Monarcha* be used for the omnibus genus as Ripley has done (1961, A synopsis of the birds of India and Pakistan, p. 438) and he has been followed by some workers on south Asian birds. However, if this lumping is done, the older name *Hypothymis* must be used for the omnibus genus. But, I prefer

to keep the two genera separate and retain *Hypothymis* for the three blue species *azurea*, *helenae*, and *coelestes* only and retain *Monarcha* for the many, diversified, Papuan-Australian area species.

The bird described as *Zeocephus rowleyi* Meyer 1874, from the Sangi Islands between Celebes and Philippines, is known only from the type. It is a blue flycatcher that has been put in the genus *Hypothymis* but is more closely related to *Terpsiphone* and a monotypic genus has been erected for it. Thus the species stands as *Eutrichomyias rowleyi* (Meyer) (Meise, 1939, Orn. Monatsb., 47, p. 134-5, with comment by Stresemann).

#### THE SPECIES.

##### KEY TO ADULT MALES

1. No crest .....2  
Crest present.....3
2. Black nuchal patch present.....*H. azurea* (*azurea* type)  
No black on nuchal patch.....*H. azurea* (*puella* type)
3. Crest short, black area about bill.....*H. helenae*  
Crest long, no black areas about bill.....*H. coelestis*

For descriptions of *H. azurea* and descriptions and colored illustrations of *H. helenae* and *H. coelestis* see Hachisuka 1935, Bds. Philippine Islands, Vol. 2, pp. 310-315. The genus *Cyanomyias* used in that work for the latter two species is not recognized here.

#### *HYPOTHYMIS AZUREA*

**Range:**— India to south China and south over Malaysia to Greater Sunda Islands, Lesser Sunda Islands to Flores and Alor, Philippines, Celebes, and Sula Islands in western Moluccas.

**Diagnosis:**— Length 5 1/2–6 1/2 inches; no crest. Coloration of two types:

(a) *azurea* type.— Male blue with belly white (sometimes bluish washed); line above bill, chin spot, collar on lower throat and nuchal patch black.

Female: head and throat blue; back brownish; breast and flanks grey, belly white (or bluish washed).

(b) *puella* type.— Differs from *azurea* type in male lacking black nuchal patch; throat band being only indicated, or obscure, or pronounced; belly white or blue.

Female: head and throat blue; back blue; belly blue or white.

**Habitat** :— Second growth shrubbery, wherever there are trees, forest edge; usually less common in forest.

**Geographical variation** :— No critical revision of the subspecies is attempted but enough data is given to serve as a background for discussion of the Philippine forms.

**Number of subspecies and areas** :—

#### MAJOR AREAS

(A) On the Asian mainland are four subspecies of which one, *prophata*, extends onto Sumatra and Borneo and some islets.

(B) On the Greater Sunda Islands, Sumatra, Borneo, Java and some islets are two subspecies, *prophata* (also on mainland) and *javana*.

(C) On the Lesser Sunda Islands east to Alor is one race; that is, from the Himalayas to the Lesser Sundas the greater part of the land mass is occupied by only 6 subspecies.

#### MINOR AREAS

(A) On the islands off the Asia mainland on Ceylon, Andaman and Cocos Islands, Nicobar Islands (2 races) and Taiwan are 5 endemic subspecies.

(B) On the 600 mile small-island chain west of Sumatra are 4 or 5 endemic subspecies.

(C) On other small Malay islands there are endemic subspecies on Karimata Islands, west of Borneo on Anamba Islands, and Natuna Islands in South China Sea and one on Maratua east of Borneo.

(D) In the Philippines there is one widespread endemic and one small island, Camaguin South, endemic.

(E) In the Celebes is one endemic race, and on the Sulas is another.

That is, there are 6 subspecies which occupy most of the land area that extends from the Himalayas to Alor. Within or adjacent to this great area, on smaller islands or islets are 18 subspecies. They occupy but a very small percentage of the land area, but the land they occupy is much fragmented and scattered. This of course is an example of what we already know, that small islands promote geographical variation.

But all island groups don't have the same effect. Birds behave differently on one island group than another. On the island chain off western Sumatra, a chain of ten islands or island groups extending 600 miles are five subspecies, four of them endemic. In the island rich Philippines extending over some 800 miles there is one widespread and one very restricted subspecies.

**Types of variation and area :—**

Even more interesting is the types of characters on which the subspecies are based, correlated with areas. All the main land masses and most of the smaller ones are occupied by birds of the *H. a. azurea* type of plumage. There are nineteen subspecies based, quite legitimately, on "more or less" characters, that is on differences in measurements of bill and wing; in shade and intensity and tone and extent of colors in one or the other sex. One of these is *H. a. azurea*, endemic to the Philippines and widespread there.

However, there are five subspecies of the *H. a. puella* type of plumage. Three of the "puella" type populations were described as species: *abbotti*, *aeria*, and *puella*. Stresemann (1940, Jour. f. Ornith., 88, p. 89) pointed out close resemblance between these forms and attributed it to convergence and kept the forms in two species: *puella* and *blasii* in one; the other two in *H. azurea*; the fifth subspecies, *catarmanensis*, was described only in 1969. However, it seems that it is best to consider all as forming one species, as I have done. The five subspecies of *puella* type plumage follow:

*Hypothymis azurea abbotti* Richmond.

**Diagnosis:—** Male lacks black markings except for a few black feathers indicating the throat band, in some specimens; female has back bluish; belly blue in both sexes.

**Range** :— Two islets off west Sumatra : Lasia (2 miles long) and Babi (7 miles long and 2 miles south of Lasia). There is a water gap of about 10 miles separating them from the nearest island to the northwest, Simalur, with the endemic subspecies *consibrina*; and a water gap of 30-50 miles separating them in the other direction from Banyak and Nias Island with the subspecies *prophata*, a subspecies also on Sumatra, Borneo, Malaya and south Thailand (Ripley, 1944, Bull. Mus. Comp. Zool., vol. 94, pp. 396-397).

*Hypothymis azurea aerea* Bangs and Peters,

**Diagnosis** :— Generally bright blue but without black nuchal patch; a narrow black band on lower throat; belly white; female like male but duller and greyer blue and lacks black throat band.

**Wing** : ♂ 73-76 mm. (Bangs and Peters, 1927, Occ. Papers Boston Nat. Hist. Soc., Vol. 5, p. 223).

**Range** :— Maratua Island, about 10 miles long and about 30 miles off the east coast of Borneo where the subspecies *H. a. prophata* (also on Sumatra, etc.) occurs.

*Hypothymis azurea catarmanensis* Rand and Rabor

**Diagnosis** :— The male has the black nuchal patch reduced or absent; belly white; the female has the whole upperparts blue, and looks like dull males without trace of black nuchal patch or throat band. In both sexes the blue is much deeper and more purplish than the widespread *H. a. azurea* of the rest of the Philippines.

**Range** :— Cameguin Island, about 12 miles across and area nearly 100 square miles. It lies about 10 miles north of the coast of Mindanao and the nearest land to the northward is Bohol, about 50 miles away.

Both Mindanao and Bohol are occupied by *H. a. azurea*, which has the male with well developed head markings and female with brown back, and which ranges throughout the rest of the Philippines from Luzon, Mindoro, Palawan (and islets) south on islands large and small to Mindanao and Sulus. (Note, however, its absence from the islets north of Luzon.) In all this subspecies has been recorded from 32 islands and islets.

*Hypothymis azurea puella* Wallace

**Diagnosis** :— Male generally blue, on lower breast grading into blue grey of flanks and abdomen, and whitish undertail coverts; an obscure dark blue band on lower throat; female similar but duller.

**Range** :— Celebes and Buton Island.

Celebes has an area of some 70,000 square miles (nearly as big as Mindanao and Luzon combined) and Buton Island is off the south-east corner of Celebes. Celebes is 100 miles from the nearest point in Borneo, where *H. a. prophata* occurs; nearly 200 miles north of Flores where *H. a. symmixta* occurs, and 250 miles south of Philippines where *H. a. azurea* occurs.

*Hypothymis azurea blasii* Hartert

**Diagnosis** :— Similar to *puella* but deeper blue

**Range** :— Sula Islands (and ? Banggai Archipelago), east of Celebes.

The Banggai Islands lie a few miles off Celebes, and the Sulas about 20 miles beyond the Banggai Islands.

*HYPOTHYMIS HELENÆ*

**Diagnosis** :— L. 5". Male: a short crest of lanceolate feathers, 15-20 mm. long; upperparts, throat and breast deep shiny blue; belly white; a narrow black band encircles bill and on sides extends back to eye. Female: much duller, more dusky blue on upperparts and throat, brighter on fore part of head; crest much shorter and feathers less lanceolate; no black about bill. Immature: upperparts bluish slate; throat dark grey, feathers edged darker; belly white.

**Range** :— Philippine Islands of the outer arc: Camiguin North, Luzon and adjacent Polillo, Samar (not recorded for Leyte) and Mindanao. Apparently absent from the west central islands.

**Habitat** :— The lower storeys of low altitude primary forest (Samar). On Camiguin North, where it is the only member of the genus occurring, its habits are those of *H. azuræ* and its song is a high note repeated 6 or 7 times in rapid succession; alarm note is low and harsh (McGregor).

**Geographical variation:**— Northern (Camiguin North) birds are comparatively dull with crest least specialized; from northern Luzon to Samar the differences between populations are slight, specialization has produced more intense blue, more gloss, more lanceolate crest feathers and longer crests; in the most southern birds (Mindanao) this trend reaches its extreme. However, these changes represent three steps rather than a cline, and three subspecies are recognised.

**Status:**— This has been considered one of the rare flycatchers of the Philippines with occurrence limited to a few widely scattered localities. This view must be modified somewhat based on the following data:

Camiguin North: Abundant, the only *Hypothymis* occurring (McGregor, 1907, Phil. Jour. Sci., 2, Sect. A, p. 346).

Luzon: Hitherto unrecorded from the island despite much intensive collecting. However, Rabor secured 6 specimens in Ilocos Norte in 1959, and 10 specimens in Camiguin Province in 1960. Evidently the species is locally common in Northern Luzon. The first Polillo Island record was 2 males in 1948 (Salomonsen, 1952, Vidensk. Medd. fra Dansk Naturh. Foren., 114, p. 35).

On Samar the three major early collectors found the species as did Rabor who collected 15 specimens in 1957. Evidently it is common here, also.

For Mindanao I have but two reports. Celestino, McGregor's collector, took a number of specimens along the Agusan River north-eastern Mindanao (McGregor, 1909, Phil. Jour. Sci., A, 4, p. 73) and in 1963, Rabor took a single specimen in the same general area.

The general scarcity of the species in collections is indicated by the fact that requests to Washington, New York, Yale and Harvard Museum yielded only 13 specimens.

It appears that *H. helenae* is abundant to common in a few areas (Camiguin North, Northern Luzon, Samar); otherwise it is absent or scarce.



**Sex ratio:**— It is surprising that while general collecting on Samar yielded 3♂, 3♀, that on Northern Luzon yielded 15♂ but no females.

*Hypothymis helenae personata* (McGregor)

**Diagnosis:**— Generally blue, comparatively dull, gloss low; pale blue edging of "mask" rather conspicuous, crest only moderately full, feathers only slightly pointed. Measurements: ♂ wing 67, 67; tail 60, 61; culmen 15, 15; crest 13, 15 mm.

**Range:**— Camiguin North Island, north of Luzon. Material seen: Camiguin North, 2♂ ad., 1♂ imm., 1♀ imm.

**Remarks:**— A misunderstanding has grown up in the literature regarding McGregor's material. It consisted of a series, some of which was distributed to Field Museum, American Museum and United States National Museum before World War II and the bombardment of Manila that destroyed the collections of the Bureau of Science.

*Hypothymis helenae helenae* Steere

**Diagnosis:**— Male like that of *personata* but much brighter, more glossy and glistening blue generally; the pale line bordering "mask" is less contrasting; crest only slightly longer but fuller and with feathers much more narrowed at tip, giving a more lanceolate shape; bill shorter, 13-14 mm.; wing slightly shorter, 64-66 mm.; crest 14-20 mm.

**Range:**— Northern Luzon (Ilocos Norte and Cagayan Provinces); Polillo Island (off central eastern Luzon) and Samar. Lowlands to 3000 feet. Specimens seen.— Ilocos Norte Prov., 5♂ ad.; Cagayan Prov., 11♂ ad.; Samar, 3♂ ad., 1♂ ? immature, 3♀ ad.

**Remarks:**— Cagayan Province birds are slightly darker than Ilocos Norte and Samar specimens, perhaps a slight indication of closer relationship with *personata* of Camiguin North which is 25 miles to the northeast of Cape Engano, Cagayan Province. Polillo birds are like Samar birds, according to Salomonsen (1952, Vidensk. Medd. fra Dansk Naturh. Foren., 114, p. 351).

*Hypothymis helenae agusanae* new subspecies

**Type** :— Chicago Natural History Museum No. 275275 from Balangbalang, Cabadbara, Mt. Hilong-hilong, Agusan, Mindanao. Adult male collected April 2, 1963, by D. S. Rabor.

**Diagnosis** :— Very like *helenae* of Samar, and northern Luzon but general coloration considerably clearer, brighter, paler and more glossy blue. This character is much more developed on crown and crest; the crest is as long as the most extreme Luzon *helenae* and the feathers are still narrower.

Wing, 63; tail, 60; culmen, 14; crest, 17 mm.

**Range** :— Northeastern Mindanao.

**Remarks** :— Though represented by a single specimen, its coloration falls so clearly outside that of the series of *helenae* that I venture to name it.

Earlier, Celestino (McGregor, 1909, Phil. Jour. Sci., A, 4, p. 73) collected "a number" of specimens on the Agusan River.

*HYPOTHYMIS COELESTIS*

**Range** :— Philippines on the outer arc of islands (Luzon, Samar (not yet recorded on Leyte), Dinagat, Mindanao and Basilan) and certain west central islands (Sibayan and Negros). Surely to be found on other central islands.

**Diagnosis** :— Length 6". Male : blue, deeper and richer purple blue on throat and upper breast, with a white belly; crown and elongated crest of lanceolate feathers glistening and paler; no black markings. Female similar but duller, deeper blue and very much shorter, less lanceolate feathers in crest. Immature, bluish slate above, breast grey, feathers edged darker, belly white.

**Status** :— A rare bird as indicated by the collections in Harvard, New York, Yale, Washington and Chicago which total only 19 specimens (12 males, 6 ♀ and 1 immature). The Samar and Negros records are recent. Though 9 of the specimens come from Negros, these are the result of many years of collecting by Rabor. Nowhere common.

**Habitat** :— The upper storeys of the trees in primary low altitude forests; at times associates with other birds in mixed flocks.

**Geographical variation** :— Negros (and other central western islands ?) birds differ somewhat from those from the outer arc of islands and two subspecies are recognized :

*Hypothymis coelestis coelestis* Tweeddale,

**Range** :— Islands of outer arc : Luzon, Samar (not yet recorded Leyte), Dinagat, Mindanao and Basilan.

**Diagnosis** :— A darker race with shorter crest and very slightly shorter wing.

**Measurements** :—

	MALE	FEMALE
Wing	(6) 73-76 (av. 74.3 mm.)	(3) 69-70 (69.6)
Tail	(6) 65-74 (69.5)	(3) 62-66 (64.3)
Culmen	(6) 16-17 (16.5)	(3) 16-17 (16.3)
Crest	(6) 25-36 (29.1)	(3) 14-17 (15.3)

Specimens seen from Luzon, 2; Samar, 5; Mindanao, 1; and Basilan, 2.

*Hypothymis coelestis rabori* new subspecies

**Type** :— Field Museum of Natural History No. 257210 from Besay, Bayawan, Negros Oriental, Negros Island; adult male collected December 21, 1959, by D. S. Rabor.

**Diagnosis** :— Like *H. c. coelestis* but crest longer; crown and crest paler, glistening blue; back paler, less purplish blue. Less distinctive because of individual variation in the greater intensity and extent of grey on lower breast and flanks, and the greater intrusion of a bluish wash on these parts, and the slightly larger size of this form.

**Measurements** :—

	MALE	FEMALE
Wing	(6) 74-78 (av. 76.3 mm.)	72, 73, 74
Tail	(6) 69-75 (71.6)	65, 68, 68
Culmen	(6) 16-18 (17 mm.)	16, 16, 16
Crest	(6) 35-45 (39.6)	15, 15, 20 mm.

**Range** :— Negros; Sibuyan birds are assumed to be this form.

Specimens seen : Negros, 9.

## DISCUSSION

From the above data it is possible to postulate two alternative ways in which the forms of *Hypothymis* came into being.

One is that "*puella*" is the oldest living descendant of the original colonist in the Indies, and surely of *Monarcha* stock from the Papuan area. In the northeast part of the Indies it gave rise to *helenae* which, in turn, gave rise to *coelestis*, and in the north-western part of its range to *azurea*, all as geographical isolates on the edge of the range of *puella*.

Subsequently, *azurea* became the dominant progressive species and expanded its range to cover almost the whole range of the genus from India to the Lesser Sundas, ousting "*puella*" from all but a few scattered refugia: the Celebes area, and islets off Sumatra, Borneo, and one in central Philippines. It also pushed back *helenae* and *coelestis* to parts of the Philippines, but they are now well enough established to co-exist with each other and with *azurea* on some, but not all, Philippine Islands.

The alternative view is that the widespread *azurea* is the older, and change through evolution has proceeded independently at a number of geographically distant islands within the range of *azurea*. The changes have been in part in the same direction to give several isolated populations of *puella* type, and also in a somewhat different direction the two species of *helenae-coelestis*, all still of limited distribution.

Though the end products are so different, "*puella*" and the *helenae-coelestis* pair share certain characteristics. They both differ from *azurea* in having a blue (not brown backed) female, and the males both lack distinctive black nape markings; i.e. sexual dimorphism is reduced.

The second view, accepted here, may be stated in more general terms: small islands tend to promote geographical variation. Some of these small island populations reach subspecies level in the degree of difference. A few of these subspecies proceed further to species level, when recolonization may occur.

Parallelism frequently occurs, not the result of environmental influence, but an inherent tendency to vary in certain directions. Where it occurs seems to involve a certain amount of randomness at least.

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