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Biometry of the *Eugerres plumieri -Eugerres brasilianus* (Pisces:Gerreidae) complex from the Gulf of Mexico. A multivariate approach

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Abstract: A biometric analysis of 58 members of the *Eugerres plumieri* complex from three sites (Gulf of Mexico) was performed to test the hypothesis that they actually represent two species. A Principal Components Analysis showed the segregation of the sample into two different groups. This classification was evaluated by a Multiple Discriminant Analysis, and the groups' membership was contrasted with a null model based on random grouping. A multiple regression analysis allowed the identification of five discriminant morphometric variables that account for more than 95% of the total variance of PCA-axes 1 and 2. Our results support the hypothesis that there are two species of *Eugerres'* in Mexican waters. Finally, the status of *E. brasilianus* is discussed.

Key words: Multivariate analysis, principal components analysis, discriminant analysis, *Eugerres plumieri, Eugerres brasilianus,* Gerreidae, Gulf of Mexico.

The circumtropical and subtropical family Gerreidae ("mojarras"), contains seven genera and about forty acknowledged species (Nelson 1976). Mojarras are characterized by a highly protractile mouth. This group typically inhabits coastal waters, estuary-lagoon sites, and sometimes is found in fresh-water environments. In Mexico, this family is represented by five genera and about fifteen species (Castro-Aguirre 1978). Gerreidae systematics is complex and, because of an overlapping of interespecific and even intergeneric characters, species often are misidentified, particularly when dealing with juvenile specimens (Randall and Vergara 1977).

Eugerres plumieri (Cuvier) is common in the coastal waters of the Gulf of México. It is distributed from Tamaulipas to Campeche (Darnell 1962, Chávez 1972, Reséndez 1970, 1973, 1980, Castro-Aguirre 1978, Aguirre-León *et al.* 1982, Kobelkowsky 1985, Aguirre-León and Yáñez-Arancibia 1986).

Jordan and Evermann (1898), Meek and Hildebrand (1925), Duarte-Bello (1959), Castro-Aguirre (1978), and Randall and Vergara (1977) proposed the northern limit of distribution of *E. plumieri* between South Carolina and Florida in North America, and its southern limit in Northern Brazil, in South America. Deckert and Greenfield (1987) argue that the range of the species has its southern limit in Colombia.

Eugerres brasilianus (Cuvier) is a lesser known member of the group, and its range of distribution is controversial. Jordan and Evermann (1898) and Meek and Hildebrand (1925) have delimited this range from West Indies to Brazil. Schultz (1949, in Cervigón 1966) has records for coastal waters of the South Atlantic. Guitart (1977) gives a wider range: from South Carolina to Brazil. Duarte-Bello (1959) and Castro-Aguirre (1978) also have northern records, including the coastal zone of the Gulf of Mexico. Due to the very few records of *E. brasilianus* for the Gulf of Mexico, there is doubt about its presence in this area. Furthermore, there is some degree of taxonomic confusion on its discrimination from *E. plumieri.* Also, there is a considerable overlapping in the ranks of counts and measurements of external characteristics currently used. For Jordan and Dickerson (1908) there is taxo-

nomic identity among *Gerres (=Eugerres) plumieri* and *G. brasilianus*. Castro-Aguirre (1978) comments that both species frequently co-occur in México. Báez-Hidalgo and Guevara-Carrió (1983) found four proportional meristic relationships that allowed the discrimination of both species, but they accept that their results are not conclusive. Deckert and Greenfield (1987) give, as primary diagnostic characteristics for the segregation of the two species, the number of elements in the anal fin and the number of gill rakers.

In our sample, previously identified as *E. plumieri* (according to keys by Randall and Vergara 1977 and Castro- Aguirre 1978), there are notorious morphometric variations, suggesting the possible presence of another species of Eugerres (perhaps *E. brasilianus*). There is no clear evidence of the ocurrence of *E. brasilianus* in the Gulf of Mexico, and even its specific status is doubtful.

Our main goal was to explore biometric relationships between individuals of *Eugerres* (defined previously as *E. plumieri*) in a sample from the Gulf. The main goal was to explore the possible presence of *E. brasilianus* in the sample and, eventually, to contribute to the definition of the differences between the two species.

MATERIAL AND METHODS

Eighteen morphometric and two meristic variables (Table 1) were measured on a sample of 58 individuals identified as *E. plumieri* from three sites of the Gulf of Mexico (Fig. 1): (1A) Tuxpam-Tampamachoco estuarine lagoon system, Veracruz (24 individuals); (1B) Alvarado's lagoon, Veracruz (21 individuals) ; and (1C) Términos lagoon, Campeche (13 individuals). Measurements were made using calipers to the nearest 0.01 cm. Reference material is kept in the Fish Collection, Department of Biology of the Universidad Autónoma Metropolitana, Iztapalapa, Mexico.

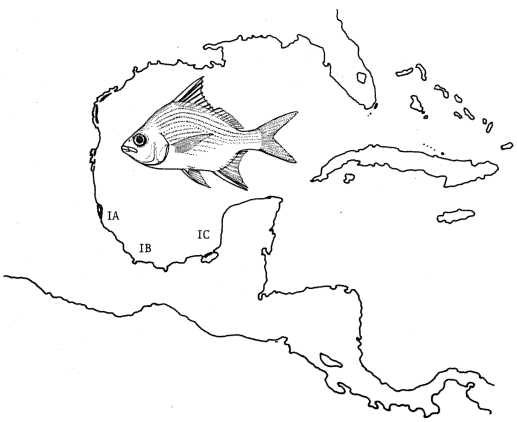

Fig 1. Sampling sites. 1A.- Tuxpam-Tampamachoco estuarine lagoon system, Veracruz; 1B.- Alvarado's Lagoon, Veracruz; 1C.- Terminos Lagoon, Campeche.

Nine of the measured morphometric variables (Table 1) are currently used in diagnostic keys. These variables are based on criteria given by Hubbs and Lagler (1958). Variables 10 to 18 are morphometric characteristics based on our preliminary observations. Deckert and Greenfield (1987) used meristic variables (number of gill rakers and anal-fin rays) to separate *E. brasilianus* from *E. plumieri*. Other non-morphometric characters; such as number of scales on lateral line, color of longitudinal stripes, etc., normally used for species determination were not considered here. Besides, we did not use morphometric variables in the form of proportional relationships.

Three classificatory approaches were followed on the data matrix:

i) A standarized Principal Components Analysis (PCA) was performed on the abovementioned sample to detect natural groups and to identify the most influential variables in the numerical ordination. We standarized data matrix to eliminate scale differences between morphometric (lengths) and meristic (counts) variables. A visual inspection of the scatter diagrams of the few first axes extracted by PCA could reveal natural grouping of the individuals with basis on their biometric relationships.

ii) An overall physiognomic examination of the 58 individuals allowed the recognition of two groups. This classification was restricted *a priori* to the formation of two groups, following the hypothesis that there were two morphotypes present in the sample.

iii) From the partition based on PCA, a null model was built with the purpose of falsifying a hypothesis of randomness. Group memberships were assigned at random to every individual in the sample. The final null model resulted from averaging 100 random classifications.

The three classifications were evaluated applying a Multiple Discriminant Analysis (MDA). Discriminant Analysis has been used

for two main purposes: (1) allocation of additional members to an existing classification and, more recently, (2) evaluation of classifications by means of the information of intra- and inter-groups differences provided by this technique (Matthews 1979). MDA searches for mutually independent discriminant functions that maximize distance between the groups produced by a previous classificatory process (Tatsuoka 1970).

RESULTS AND DISCUSSION

Table 1 shows basic statistics for twenty variables entered to PCA (except for variables 1, total length and 2, standard length). A Chi-square test showed that all biometric characters are normally distributed ($p < 0.05$). Sample size (n) showed to be significant ($p=0.05$) comparing standard deviation of observations (s) with an acceptable standard error of the mean (E_X), in terms of the desired inferences (Southwood 1978): $n = (s/E_X)^2$. Size interval was 75-192 mm for standard length.

TABLE 1

Basic statistics of twenty variables measured on a sample of 58 individuals identified as E. plumieri. *Variables 1 (Total Length) and 2 (Standard Length) were not entered to PCA*

Variable	N	Mean	Range	Variance	S.E.
1.Total Length	58	185.60	160	1568.42	5.20
2.Standard Length	58	128.88	120	919.90	3.98
3.Max. Length of Head	58	47.80	48.1	141.52	1.56
4.Predorsal Length	58	67.30	65.6	274.06	2.17
5.Med. Length of Head	58	25.50	25.4	42.78	0.86
6.Max. Heigth of Body	58	65.86	79.5	258.19	2.11
7.Width of Mouth	58	10.92	16.6	16.62	0.53
8.Maxilar Length	58	10.82	12.4	10.02	0.42
9.Ocular Length	58	13.60	10.7	5.93	0.32
10.Width of Caudal Pedunc.	58	17.55	19.0	18.41	0.56
11.Dist. Orig. of Dorsal Fin-Orig. of Anal Fin	58	81.05	75.9	327.89	2.38
12.Dist. Mouth Tip-Orig. Anal Fin	58	52.01	52.1	177.61	1.75
13.Mean Height of Head	58	33.07	36.3	88.57	1.23
14.Length of Second Spine of Anal Fin	58	37.37	19.7	20.15	0.59
15.Length Base of Anal Fin	58	27.36	23.1	30.71	0.73
16.Lengt of Second Spine of Dorsal Fin	58	44.14	19.7	21.39	0.61
17.Lengt of Pectoral Fin	58	46.72	47.2	113.56	1.40
18.Distance Anus-Base of Pelvic Fin	58	25.30	32.2	65.99	1.07
19.Anal-Fin Elements	58	11.05	2.0	0.12	0.04
20.Number of Gill Rakers	58	14.09	2.0	0.36	0.08

A summary of PCA is presented in Table 2. PCA-axis 1 explains by its own 72.66% of data matrix variance. PCA-axis 2 accounts for 8.06% of variance, and the third PCA-axis explains 6.58%.

TABLE 2

Principal Components Analysis (PCA) of 16 morphometric and two meristic (19 and 20) variables from a sample of 58 individuals identified as E. plumieri. *Eigenvalues, cumulative explained variance, and variables coefficients of the first three extracted components. For variables names see TABLE 1*

	PCA1	PCA-2	PCA-3
Eigenvalue	72.66	8.06	6.58
Cumulative Explained Variance (%)	72.66	80.73	87.31
		Coefficients	
Variable:			
3	0.272	-0.075	0.067
4	0.273	-0.038	0.051
5	0.264	-0.097	0.140
6	0.272	0.029	-0.036
7	0.257	-0.172	0.171
8	0.244	-0.059	0.251
9	0.262	0.014	0.007
10	0.273	-0.014	0.010
11	0.271	0.027	-0.023
2	0.268	-0.067	0.017
13	0.243	-0.157	0.195
14	0.184	0.489	-0.297
15	0.259	0.143	-0.049
16	0.202	0.442	-0.295
17	0.262	0.126	-0.042
18	0.149	-0.477	-0.250
19	-0.040	0.187	0.708
20	-0.035	0.431	0.313

We recognized two groups from visual inspection of the scatter diagram of the first two PCA-axes (Fig. 2a). No objective procedure was used to segregate individuals into groups.

Total length was not included in our analysis because there were serious problems in accuracy since many times the caudal fin was bended and/or broken, giving an unrealistic measure.

When standard length was included in PCA, this character, statistically under the multiple regression approach, was found to be the most important one. Nevertheless, as this length is an expression of a combination of the sixteen remaining morphometric characters, we decided not to include it in our analyses because this variable does not have a taxonomic meaning.

Morphometric and meristic variables entered significantly ($r^2 > 0.9$; $p < 0.001$) into multiple regression model (Table 3) explaining axis 1 of the PCA ordination were predorsal length (r^2=.98), and length of the second anal-fin spine (cum. r^2=.99). Second PCA-axis was explained by length of the second anal-fin spine (r^2=.35), distance from anus to base of pelvic-fin (cum. r^2=.80), number of gill rakers (cum. r^2=.91), and mean height of head (cum. r^2=.94). PCA-axis 3 was explained by number of anal-fin elements (r^2=.59), number of gill rakers (cum. r^2=.68), mean height of head (cum. r^2=.78), and length of the second anal-fin spine (cum. r^2=.94). Among these characters, we found predorsal length and length of the second anal-fin spine as the most important. They have a small probability of overlapping between two related samples of each species.

Many authorities (Jordan and Evermann 1896, Meek and Hildebrand 1925, Cervigón 1966, Randall and Vergara 1977 Castro-Aguirre 1978, Báez-Hidalgo and Guevara-Carrió 1983, Deckert and Greenfield 1987) agree in pointing out gill rakers on lower limb of the first gill arch and the lengths of second spine of anal and dorsal fins as the most important characters, taxonomically speaking, to discriminate between *E. plumieri* and *E. brasilianus*.

The most constant character is the number of gill rakers which is higher in *E. plumieri*. With reference to the lengths of second spine of anal and dorsal fins, Cervigón (1966) reports that for *E. brasilianus* the second spine of the dorsal fin is shorter than the head, contrasting with *E. plumieri*. Nevertheless, this difference holds only for small specimens. For Báez-Hidalgo and Guevara-Carrió (1983), this character is distinctive only in adult individuals. Furthermore, in spite of having detected a significant ($p < 0.05$) mean difference in the relationship length of head / length of second spine of dorsal fin for both species; in their data, the range of variation of this relationship for one species covers the range of the other one. So, these authors argue that this character should not be regarded as a definitive one.

Although a recent review by Deckert and Greenfield (1987) states that number of anal-fin elements and of gill rakers are the key characters to differentiate between *E. brasilianus* and *E. plumieri*, in our study these meristic variables were not as important. As a matter of fact, values of these characters are markedly constant in our sample (see Table 1).

TABLE 3

Biometric variables measured on a sample of 58 individuals identified as E. plumieri *entered in stepwise multiple regression models explaining variance of first three axes from Principal Components Analysis. For variables names see TABLE 1*

Indep. Var.	Coeff.	t	p	r^2	f	p
PCA-1:						
Constant	-17.20	-36.53	<0.00001			
Var 4	0.20	47.38	<0.00001	0.98		
Var 14	0.10	6.56	<0.00001	0.99		
Model				0.99	2035.33	<0.00001
PCA-2:						
Constant	-15.06	-15.59	<0.00001			
Var 14	0.20	23.05	<0.00001	0.35		
Var 18	-0.07	-12.70	<0.00001	0.80		
Var 20	0.73	11.50	<0.00001	0.91		
Var 13	-0.03	-6.77	<0.00001	0.95		
Model				0.95	263.04	<0.00001
PCA-3:						
Constant	-32.12	-21.02	<0.00001			
Var 19	2.32	21.07	<0.00001	0.59		
Var 20	0.61	9.63	<0.00001	0.68		
Var 13	0.06	12.71	<0.00001	0.77		
Var 14	-0.11	-11.73	<0.00001	0.94		
Model				0.94	192.81	<0.00001

Because both predorsal length and mean height of head are characters that must be expressed as a proportional relationship of some other morphometric character (*e.g.*, standard length or maximum head length), and allometric changes occurring in both species can make such proportion to vary among different ages; we belive that it is necessary to approach the analysis of primary. taxonomic characters at a finer level, such as a cytogenetic or electrophoretic one. Description and comparison of osteology of these species could offer additional evidence.

From the MDA performed on the three classifications, the one based on PCA (Fig. 2b, Table 4) is 98% correct, according to the significant function extracted ($p < 0.00001$). Individual 45, which lies between the two recognized groups in the PCA scatter diagram (Fig. 2a), was misclassified by us. Use of MDA solved this ambiguity.

TABLE 4

Results from Multiple Discriminant Analysis (MDA) used for the evaluation of three classifications of 58 individuals identified as E. plumieri. *See text for classifications details*

1. PCA classification ($p < 0.00001$):

Previous grouping	Grouping by MDA A	B	Total
A	41 (97.6%)	1 (2.4%)	42 (100%)
B	0 (0%)	16 (100%)	16 (100%)

2. Subjective classification ($p < 0.001$):

Previous grouping	Grouping by MDA A	B	Total
A	32 (86.5%)	5 (13.5%)	37 (100%)
B	5 (23.8%)	16 (76.2%)	21 (100%)

3. Null Model classification ($p = 0.87$):

PreviousGrouping by MDA grouping	A	B	Total
A	17 (54.8%)	14 (45.2%)	31 (100%)
B	8 (29.6%)	19 (70.4%)	27 (100%)

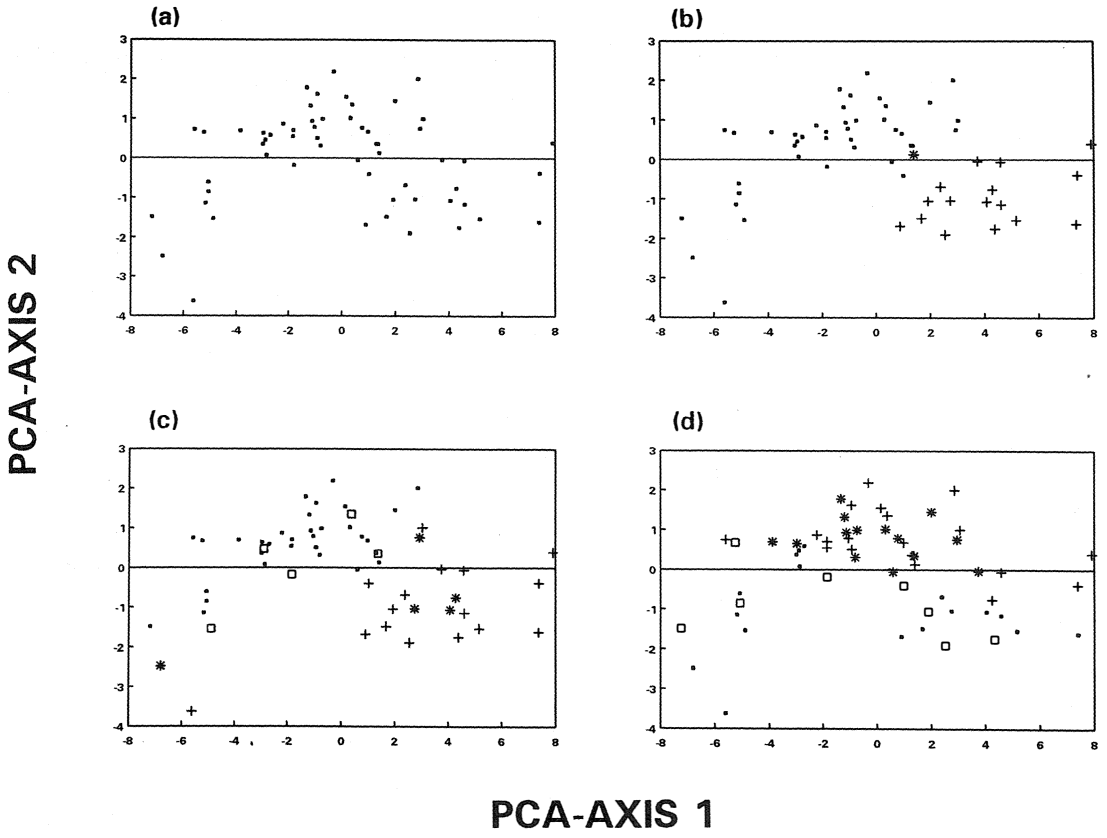

Fig. 2. Ordination results and evaluation of three classification apprroaches of 58 individuals identified as *E. plumieri*. (a) Dispersion diagram of 58 individuals on first two axes from principal components analysis. (b) Classification based on PCA. (c) Subjetive classification. (d) Null-Model classification. * denotes individuals classified in Group 'A'; + individuals assigned to Group 'B'; * individuals previously missclassified as 'A', belonging to 'B' according to MDA; and ▯ denotes individuals previously missclassified as 'B', belonging to 'A' according MDA.

The significant discriminant function ($p < 0.001$) extracted from subjective classification (Fig. 2c, Table 4) shows a 83% of well-classified individuals. Ten individuals (7, 15, 20, 32, 33, 34, 37, 38, 42, and 53) were missclassified by this classificatory approach according to MDA.

Discriminant function from random classification was neither significant ($P>0.05$), nor showed a clear differentiation of groups (Fig. 2d, Table 4).

The null hypothesis of random classification was rejected after contrasting it with the classification derived from PCA using a Chi-squared test. The alternative hypothesis of two morphologically defined groups was, at least provisionally, accepted.

Table 5 shows basic statistics for the two recognized groups. All mean values of the analyzed characters, except counts of anal-fin elements and gill rakers, are lower for group A (supposed to be *E. plumieri*). Nevertheless, dispersion statistics are higher for this group.

Acknowledgement of two groups in the analyzed *Eugerres* sample could imply, at least, two alternative hypotheses: (1), a clear morphological differentiation of *E. plumieri*, perhaps in response to distinct microenvironments in the locations where the sample was taken. We regard this hypothesis as unreliable because individuals belonging to the recognized groups were found in the three sampled sites. (2), The presence of another related species (presumably, although not necessarily, *E. brasilianus*, group B) in the sample.

TABLE 5

Basic statistics of twenty variables measured on a sample of 58 individuals identified as E. plumieri for two groups defined in this work. Variables 1 (Total Length) and 2 (Standard Length were not entered to PCA. For variables names see TABLE 1

Group A

Variable	N	Mean	Range	Variance	S.E.
1	41	167.90	118.0	909.64	4.71
2	41	115.27	90.0	531.54	3.60
3	41	41.97	28.7	62.80	1.24
4	41	59.44	43.7	139.37	1.84
5	41	22.25	16.5	18.05	0.66
6	41	59.04	63.6	170.96	2.04
7	41	8.72	8.1	4.45	0.33
8	41	9.35	9.8	5.47	0.36
9	41	12.54	7.7	3.81	0.30
10	41	15.61	12.8	10.04	0.49
11	41	73.52	62.6	215.85	2.29
12	41	45.71	46.8	95.79	1.53
13	41	28.34	22.9	38.03	0.96
14	41	37.15	19.7	24.70	0.78
15	41	25.45	21.8	26.72	0.81
16	41	43.68	19.0	24.51	0.77
17	41	42.77	31.8	83.25	1.42
18	41	22.20	31.3	47.85	1.08
19	41	11.07	2.0	0.12	0.05
20	41	14.15	2.0	0.38	0.10

Group B

Variable	N	Mean	Range	Variance	S.E.
1	17	228.29	75.0	574.10	5.81
2	17	161.71	58.0	328.47	4.40
3	17	61.88	22.8	49.28	1.70
4	17	86.25	31.0	88.31	2.28
5	17	33.31	12.9	15.34	0.95
6	17	82.29	30.4	86.26	2.25
7	17	16.22	8.4	5.80	0.58
8	17	14.36	6.6	3.16	0.43
9	17	16.16	5.2	1.75	0.32
10	17	22.21	10.1	7.75	0.67
11	17	99.20	37.7	133.25	2.80
12	17	67.19	21.5	46.61	1.66
13	17	44.47	18.4	25.10	1.21
14	17	37.90	11.9	11.04	0.80
15	17	31.98	11.5	10.60	0.79
16	17	45.25	13.2	13.10	0.88
17	17	56.26	25.7	59.79	1.87
18	17	32.78	19.1	31.44	1.36
19	17	11.00	2.0	0.12	0.09
20	17	13.94	2.0	0.31	0.13

The second hypothesis has some support from our results, but somehow it implies a contradiction with the accepted criteria of gill rakers and anal-fin elements as discriminant characters between *E. plumieri* and *E. brasilianus* (Deckert and Greenfield 1987). Although these characters are important determinants of PCA-axes 2 and 3 (see Table 3), they are not the most important ones. Besides, they are markedly constant among our sample (Table 1).

Both Meek and Hildebrand (1925) and Castro-Aguirre (1978) agree in the grouping (according to their dichotomous keys) of *Eugerres'* species, both from the Pacific Ocean and from the Gulf of Mexico, in two complexes with basis on the number of gill rakers. On one

hand, there are *E. plumieri*, *E. axillaris* and *E. mexicanus* with 13-16 gill rakers; and on the other, *E. brevimanus*, *E. lineatus* and *E. brasilianus* with 9-12 gill rakers. Second, the fourth and fifth of these species are from the Pacific coast.

If this arrangement reflects a true phylogenetic differentiation, it is possible to explain the morphological resemblance of *E. plumieri* and *E. brasilianus* as the consequence of convergence between two entities from two sections of the genera with different origins.

If the two species had a tight phyletic relationship; *i.e.*, if they had a sympatric origin, one could speculate that the detected morphological variation allowing the separation of two groups results from a parallel speciation. In this process, habitat differences play an important role. According to Rosenblatt (1963, In Matheson and McEachran 1984) there are many examples of "pair" species, reflecting habitat differences in coastal zones; being the "bay" forms from shallow waters different from the "coast" forms from deeper waters. A more detailed study should include ecological details of the *Eugerres* complex, identifying possible variations on its habitat. Deckert and Greenfield (1987: 193) conclude that : "The marine species in the genus *Eugerres* exhibit the northern and southern distributional pattern described by Robins (1971) with *E. brasilianus* occurring from Brazil north along the Central American coast to Belize and in Cuba. *E. plumieri* is the northern representative, ranging from Florida south to Venezuela. The two species co-occur in the transitional zone between Belize and Panama and at Cuba". From a zoogeographic point of view, and according to previous information and the results here presented, two considerations concerning the distribution of both species could be raised. First, the degree of overlapping in morphometric characters and the implied taxonomic confusion has carried some authors to the erroneous record of *E. brasilianus* at northern latitudes, north of its real distributional limit. This means that a possible record of this species in coastal waters of the Gulf of Mexico implies a widening of the co-occurrence transitional zone with *E. plumieri* reported by Deckert and Greenfield (1987). Second, such taxonomic confusion and a relatively low abundance of E. *brasilianus* in the subtropical and tropical North Atlantic coast, carries the fact that this species is poorly known in these zones and, not often considered in faunistic reports.

Presence of a group related to *E. brasilianus* in northerly zones (Central-South coasts of the Gulf of Mexico) is supported by our results. Additionally, if the presence of this species in such localities as north as South Carolina and Florida (Guitart 1977 and Castro-Aguirre 1978); the North-South pattern for *Eugerres* proposed by Deckert and Greenfield, (1987) would not be a valid one. Instead, this genus would show a distribution pattern similar to that described by the same authors for two species of *Diapterus*. This pattern does not reflect any zonation of North-South elements in the western tropical Atlantic coast.

The two groups detected in this study, represent morphologically determined discrete forms susceptible of being recognized as natural groups with a wide distributional range. So, the possibility of hybridization and, therefore, the lack of certain conspecific status in the studied complex cannot be discarded, as pointed out by Hubbs (1955). On the other hand, this kind of phenomena could be reflected in a morphological gradient of overlapped characters, mainly in those sites where both species (or morphologically different groups) come into "direct" contact. Kelsch and Hendricks (1986), using a comparative multivariate analysis, detected morphometric and electrophoretic differences among two species of freshwater catfishes which were difficult to distinguish among a distributional gradient. Besides, they could identify hybrid individuals in the points of contact of both species populations.

Finally, it should be stressed that the suitability of the status of *E. brasilianus* remains to be defined taking into account: (1) the number of primary morphological characters separating taxonomically both species; (2), the variants or ecotypes that could exist related to environmental heterogeneity; and (3), variations on the behavioural and biological characteristics. Evaluation of the magnitude of these three vectors could unveil important elements for the resolution of the problem.

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RESUMEN

Se realizó un análisis morfométrico de 58 individuos del género *Eugerres* provenientes de tres localidades del Golfo de México, con el propósito de probar la hipótesis de la existencia de dos especies en la muestra. Un Análisis de Componentes Principales mostró la segregación de la muestra en dos grupos morfológicamente diferentes. Esta clasificación fue evaluada mediante un Análisis Discriminante Múltiple y la asignación a los grupos fue comparada con un Modelo Nulo basado en un agrupamiento aleatorio. Un Análisis de Regresión Múltiple permitió la identificación de cinco variables morfométricas discriminantes que en conjunto, explicaron más del 95% de la varianza total de los dos primeros ejes del ACP. Nuestros resultados apoyan la hipótesis de la presencia de dos especies del género *Eugerres* en aguas costeras mexicanas. Por último se cuestiona el *status* de *E. brasilianus* (que sería la segunda especie presente en la muestra, además de *E. plumieri*).

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