

Several significant internal correlations appeared in the data that may be of physiological significance:

(1) The pre-albumin complex appeared in almost all birds sampled after the initiation of a corn based diet in October. It was identified as a lipoprotein (Elevitch, pers. comm.). Evidently some corn lipid was being transported in a fast running molecular complex, or induced the production of much higher concentrations of the observed pre-albumin.

(2) A strong positive correlation was noted between the bird's age and %Rbc, but %Wbc and the concentrations of each of the eight proteins decreased as the bird aged.

(3) No sexual differences were apparent in any of the variables measured. The birds were not in breeding condition during the sampling period, July 1968 to February 1969. The serum of one female did exhibit the intensely staining irregularly shaped band ("zigzag" band Elliott and Bennett, Poultry Sci., 50: 1365, 1971) that appears characteristic of egg laying in chickens.

(4) The concentration of transferrin was much lower in serum than in plasma samples.

Agarose gel was chosen with the knowledge that it does not produce the clarity of separation achieved by acrylamide gels at their best. The problem was to make as large a survey as possible with the available time. Acrylamide "disc" systems provide very good resolution at a very high unit investment in time. The slab survey techniques in acrylamide or starch do not generally provide similar resolution and require an investment in gel preparation time. The commercially prepared and standardized agarose gels seemed well-suited for this survey when time, uniformity, and resolution were all considered. The study was terminated early because a change of manufacturing procedure produced gels with markedly different properties (even reversing the relative positions of the albumin and pre-albumin). Thus the manufacturer's inability to deliver reliable standardized gels to us confounded the earlier arguments for agarose gel, and in further studies the acrylamide slab system would seem more appropriate.

We are aware of the demonstration of allelic differences in serum enzymes and other proteins in a number of avian species, but we have discovered no reports of similar discrete variation in the Mallard and are disappointed in finding no evidence of it in our material.

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**First Pomarine Jaeger specimen from Brazil.**—During the course of a visit to the Museu de Zoologia da Universidade de São Paulo, Brazil, I found a Pomarine Jaeger, *Stercorarius pomarinus*, study skin collected at Urucurituba 160 km south of Santarem at the mouth of the Tapajós River in Pará State, Brazil (ca. 3° 30' S, 55° 30' W), 7 May 1960, by Alipio Pimentel for the field naturalist A. M. Olalla, São Paulo, who sent it to the Museu. The record is remarkable for two reasons. Not only was this specimen of a usually pelagic species collected nearly 800 km (480 miles) inland from the Atlantic, but it also constitutes the southernmost specimen record of the species for South America and the first record for Brazil. The specimen (No. 61777) is an immature, light phase female in freshly molted alternate plumage. The black cap is well-differentiated from the light nape and cheeks but lacks the golden hackles of a full adult. The base of the neck and back are dark with narrow white edges on the feather tips; wings and underparts as in adult; but it shows axillaries, under wing coverts, rump, and under tail coverts barred across with white and dark as are typical of a second-year bird. Its fresh and blunt-ended rectrices do not extend beyond the

adjacent quills. Its measurements are: wing chord 343 mm, tail 150, exposed culmen 37.5, gonyes 10.5, tarsus 58, middle toe with claw 55, and middle toe without claw 47.

In the western Atlantic Ocean, the Pomarine Jaeger, which breeds generally within the Arctic Circle, winters at sea regularly from Cape Hatteras south to the Caribbean with straggling specimen records to Venezuela (Phelps and Phelps, 1958: 109-110) and Guyana (Chubb, 1916: 96-97). There are sight records for Punta del Este (35° S), Uruguay (Escalante, 1970: 118), and Cabo San Antonio (36° 30' S), Argentina (Olrog, 1967: 297-298). So far as known, however, the main wintering grounds in the Atlantic lie in the upwelling, fish-rich waters off West Africa from Cape Vert, Senegal, to the Gulf of Guinea and in the Pacific presumably from California to the Humboldt current off Peru, though few reliable records exist for this latter area (Koepcke, 1970: 68). The extreme southern records of the species in the Western Hemisphere are on the Antarctic Peninsula (Sladen, 1954; Beck, 1968). Sladen (1954) explains these occurrences as "possible . . . stragglers in the west wind drift of the Southern Ocean from the Australian and not the South American area." In the light of the present report and other recent ones (Olrog, 1967; Escalante, 1970), these vagrants may have come down either coast of South America or even crossed from South Africa.

Wynne-Edwards (1935) suggests that Pomarine Jaegers from the American side of the Atlantic may possibly cross the Isthmus of Panama (where there are few records (Wetmore, 1965: 436)) to winter in the Humboldt current. The peculiar westward and inland wandering of this Brazilian specimen, although not without precedent elsewhere (e.g. Dalquest, 1958; Watson, 1966), lends some credence to Wynne-Edwards's suggestion.

Williams (1965) in a paper on jaegers in the Gulf of Mexico concludes that "there is some substantial evidence that most jaegers which occur there in fall reach the Gulf by flying southward over United States mainland." Perhaps, in the broadest part of the South American Continent, there are also some jaegers that migrate south and northward across land.

On the other hand the recent demonstration through banding that Sooty Terns, *Sterna fuscata*, from the Dry Tortugas cross the Atlantic to feed in the Gulf of Guinea (Robertson, 1969) raises the possibility that many jaegers may follow the terns across the Atlantic. In this same order of ideas we can suppose that some Pomarine Jaegers may follow the freshwater and maritime terns far up the streams of the large basins. This could be the case for this inland Brazil specimen collected so far from the Atlantic coast. While visiting the Museu Nacional in Rio de Janeiro (April 1971), I noted a specimen of Common Tern, *Sterna hirundo* (checked in the U. S. Natl. Mus. by A. Wetmore, pers. comm. of H. Sick), collected near Aragarças (approx. 16° S, 52° W, Goiás State, Brazil) in the Araguaia River on 23 October 1952. This locality is 1,200 km from the Atlantic and 1,500 km from the mouth of the Amazon River. It is of significance that seabirds penetrate deeply inland up the larger rivers of Africa. H. Schouteden wrote me (in litt.) of obtaining a juvenal African Royal Tern, *Thalasseus maximus albidorsalis*, (skin now in the Musée Royal de l'Afrique Centrale, Tervuren) in the Congo, 12 December, from the "quite unexpected" locality of Basankusu (1° 10' N, 19° 40' E), 1,000 km from the Atlantic. Furthermore Wells (1966) reports a Pomarine Jaeger seen at Shaganu (Iloring Province, Nigeria) almost 300 km from the seacoast. Clearly these interesting facts and hypotheses deserve further study.

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**Effect of water depth on diving times in the American Coot (*Fulica americana*).**—A number of feeding waterfowl show notable variations in their diving times (Heintzelman, 1963; Heintzelman and Newberry, 1964; Dow, 1964; Stewart, 1967; Jenni, 1969). Some of these authors (Heintzelman, 1963; Heintzelman and Newberry, 1964; Jenni, 1969) point out that "local ecological factors" such as water depth or amount of vegetation may influence the duration of foraging dives. Although authors sometimes give or try to approximate water depth when reporting the diving times of various foraging water birds, none has yet, to our knowledge, attempted to measure directly the variations of an ecological parameter (e.g. water depth) and the effects, if any, that these variations might produce on the foraging behavior of waterfowl.

On 9 and 12 April 1971 we recorded the number of foraging dives per minute and measured diving times and pause times in a group of American Coot (*Fulica americana*). On the 2 days approximately 200 and 230 birds in Orleans Parish, Louisiana, were feeding on a small freshwater pond 2 ha in extent, 6.7 km east of Paris Road on Interstate Highway 10 and about 50 m south of the highway. A strip of grassy tussocks about 10 m wide divided the pond into two discrete areas of 1.5 ha (pond I) and 0.4 ha (pond II). Small waterways and channels through the median grassy area connected both ponds and coots often swam from one to the other.

To obtain more accurate locational records we established a grid of 20 × 20-m