the specimen: ecological, racial, biological, genetical, etc., and could then evaluate each factor correctly, we might not only be able to determine exactly the species to which that individual should be assigned but might even say with assurance that it was of mixed origin and indicate by a fraction its inheritance from each group.

It has recently become apparent that we must add another grouping to these two kinds of species. Perhaps as good a name as any for the kind to which I refer would be "administrative species." An administrative species, then, would be an aggregation of organisms of more or less similar appearance under a single name for some specific purpose, usually, in this country, for the administration of some kind of regulatory measures. Perhaps an extreme example of administrative species would be the "wild duck" of some of our earlier game laws.

Two examples of administrative species have very recently come to my attention. In one case, which occurred in another state, I must, for obvious reasons, be rather vague in some statements. Some fish specimens were taken to a certain man for identification. They evidently belonged to a particular section of a large and popular group of game fishes. It was also evident that they pertained to one or the other of two groups, neither of which agrees very closely with a single taxonomic species but is rather a hybrid aggregation of derivatives from several taxonomic (and perhaps natural) species. The man to whom they were submitted felt that it was necessary for him to make a definite, decisive statement in the case, and did so. When he sought confirmation of his decision, he found that others, who had considerable experience with that group, did not agree with him. After some lengthy discussion he came to the conclusion that these particular fishes could not be adequately protected under one name but could under the other. Therefore, so far as he was concerned, those fishes were definitely the species that he considered could be given the protection that they obviously required. Whether he was right or wrong in all or part of his ideas does not alter the fact that this is an excellent example of an administrative species.

In the present fish and game code of Illinois, we have another example of an administrative species. The little grass pickerel, *Esox americanus,* called *Esox vermiculatus* by various authors, and the northern pike, *Esox lucius,* are grouped together under the administrative name "Pickerel." No individuals of this "species" less than sixteen inches long may be taken, regardless of the fact that the grass pickerel so rarely reaches that size that it is not likely than any fisherman will ever see one of legal length. This ruling also ignores that fact that the grass pickerel might be a very interesting game fish if its capture were permitted. This part of the code also fails to take into account the fact that the grass pickerel is one of the most efficient destroyers of young bass, sunfish and perch in the waters of this state. The young are hatched early in the spring and are large enough to eat young bass in early summer when the latter leave their nests and scatter into the weed beds for food and protection. The grass pickerel spend their entire lives in the weed beds and must surely account for a very large part of the losses of bass and sunfish less than a year old.

There is one respect in particular in which the Illinois code of fish and game laws is highly commendable. The fish species mentioned in that code are defined by being referred to the names and descriptions published in a standard technical work on the fishes of the state.

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## NAMES OF THE FOUR CULTURE ROOTS IN THE SOUTHWEST

GLADWIN[1] recognized four basic cultures in the Southwest. He called these "roots" and named them the Caddoan Root, Basket-Maker Root, Hohokam Root and Yuman Root. Although most of the archeologists who are familiar with the Southwest agree that such a four-fold division is valid, yet many have taken exception to some of Gladwin's terms.

Gladwin used Basket-Maker Root for that basic culture which grew into the Pueblo culture. Some archeologists call this the Basket-Maker-Pueblo Root, others the Pueblo Root. Kidder,[2] feeling that the word Basket-Maker and Pueblo brought up pictures in the mind that were not always true, suggested the term Anasazi, a Navajo name for "old people."

The word Hohokam was proposed by Russell[3] for the ancient people who dwelt in the valleys of the Gila and the Salt. It is a Pima Indian name meaning "that which has perished." Huntington, 1914, applied the word to cover all the ancient people of the Southwest on the plateau as well as on the desert. Gladwin[4] proposed that the word Hohokam be restricted to the ancient people who dwelt in the Salt and Gila Valleys in Arizona. The name is very appropriate and has been widely accepted and is in good usage.

The words Caddoan and Yuman have been criticized because they are names of Indian languages and so infer that the ancient people of the region spoke those tongues. Gladwin called one of the principal branches

[1] Winifred and Harold S. Gladwin, Medallon Papers No. XV, p. 3, 1934.

[2] A. V. Kidder, "The Pueblo of Pecos." Vol. 2, p. 590, New Haven, 1936.

[3] Frank Russell, 26th An. Rpt. B.A.E., p. 24, 1908.

[4] *Loc. cit.*

of his Caddoan Root, in the Southwest, Mogollon. Usage has slowly shifted the meaning of the word Mogollon from a branch name to a root name. Mogollon is an excellent name for a root as the various phases in this root include the Mogollon Mountains in New Mexico and the Mogollon rim in Arizona as well as surrounding areas. Mogollon is derived from the name of Governor Flores of New Mexico, 1712–1715, whose full name was Don Juan Ignacio Flores de Mogollon, Captain General of New Mexico.[5]

The name Yuman also refers to an Indian language group and has met the same criticism as Caddoan. To avoid any suggestion of this kind, we suggest the name Pataya for this root. Pataya is the Walapai name for ancient people. Patayan is the adjective.

For the four roots of Southwestern Culture we then have the names Anasazi or Pueblo, Hohokam, Mogollon and Patayan. Usage alone will establish the terminology.

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## ALLEGED BIRTH OF TRIPLETS IN THE RHESUS MONKEY

ON April 16, 1938, a shipment of rhesus monkeys, consigned to Henry Trefflich, animal dealer, arrived in New York Harbor from India. In one large box six fully mature females were caged, of which one was in possession of three babies; hence word went forth that for the first time in history birth of triplets in a monkey would be recorded. The event was, indeed, so "recorded" in the daily press. The mother was duly photographed, holding only two babies, however, for one had died during the night.

By good fortune I happened to be on the ground and was able to analyze the interesting situation with regard to the alleged multiple birth. On the basis of the following facts, I was forced to the conclusion that the case was not one of multiple birth but one of multiple kidnapping.

In the first place I palpated the uteri of the cagemates and found that two of them had also given birth quite recently, one so recently in fact that she had not yet delivered the afterbirth, for the placental discs were readily palpable. The second female had delivered a baby some days, perhaps even a week, before.[1]

It seemed most likely, therefore, that two additional females had rightful claims upon babies in possession of the allegedly prolific mother. But any doubt that existed was all but dispelled by inspection of this female's ovaries. After a couple of weeks all three babies were dead and the monkey was acquired by the Carnegie Colony. Laparatomy performed on May 20 disclosed a *single distinct corpus luteum* quite characteristic of the early puerperium.

We may, therefore, interpret the case as follows: Of 3 pregnant females caged together, *A* gave birth to a baby which was later adopted by *B*. The latter and female *C* delivered babies the same day (parturitions are said to have been witnessed by members of the ship's crew and mistakenly attributed to the same female) and *B* promptly got into possession of *C*'s baby also.

Kidnapping is not uncommon among monkeys. I have photographed such a case.[2] Doubling up babies in this way is a favorite trick of zoo authorities and other exhibitors for enhancing the public's interest in the collection.

Theoretically, it is of course possible for monkeys to produce triplets. Marmosets occasionally do so, as Dr. Geo. B. Wislocki has observed. Twins are the rule in marmosets and have been reported with some frequency in other primates which are normally uniparous. But the New York case of alleged triplets here reported must be dismissed as three single births under conditions favorable to double kidnapping by a mother well endowed with the "retrieving" instinct.[3]

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## CYANIDE BEARING ORE MILL REFUSE AS A MENACE TO FISH LIFE

DESTRUCTION of the fish in a small tributary to the upper Columbia River, Washington State, was traced to refuse from an ore mill using the cyanide process for the recovery of gold. The small watercourse was strewn with dead eastern brook trout, *Salvelinus fontinalis,* and cottoids, *Cottus* sp. The area of destruction began immediately in front of the mill and extended throughout the lower portion of the stream. No live fish were observed in this region, although several live frogs were seen. A duck of unidentified species carried away one of the dead fish, showing the possibility of damage to waterfowl. The vegetation and bottom of the creek were covered with a thin film of finely divided ore from a flow of tailings into the creek.

Plant records show that 230 pounds of NaCN are used during a day's milling of approximately 85 tons of ore. Filter sludge deposited on the tailing pile carried 1.21 pounds of NaCN per ton, dry weight, and 5.4 pounds per ton, dry weight, were found in the filter by-pass solution. Analysis of material on the refuse pile for a year or more showed 0.04 to 0.08 pounds of

[5] Will C. Barnes, *Univ. of Ariz. Gen. Bul.* No. 2, p. 282, January 1, 1935.

[1] Hartman, "Contributions to Embryology," 1932.

[2] Frontispiece, Hartman and Straus' "Anatomy of the Rhesus Monkey," Baltimore, 1933.

[3] Wiesner and Sheard, "The Maternal Behavior in the Rat," London, 1933.