Since the Babylonians commonly employed only two distinct symbols to represent the first 59 natural numbers, *viz.*, a symbol for unity and a symbol for ten, their system of numerical notation can be more properly called a decimal system than a sexagesimal system. There is, however, a very striking difference between their system of notation and the systems employed by the other early nations, since their symbol for unity was used also to represent various positive and negative powers of 60, depending upon the relative positions, which are, however, frequently not clearly exhibited in their notations. Hence we meet here for the first time in the history of mathematics an approach to our modern positional notation where the same symbol is used to represent an infinite number of different numbers depending upon its position relative to the decimal point, either implied or expressed. When multiples of negative powers of the base are used to represent fractions, a symbol of separation, corresponding to our decimal point, is almost as important as an emptiness zero symbol, but the former has received much less attention on the part of mathematical historians than the latter.

In the periodical noted above Professor O. Neugebauer, of Göttingen, Germany, stresses the fact that the ancient Babylonians did not have a fully developed positional system of numerical notation but that it is likely that our modern system to the base 10 was influenced by their steps in this direction. In view of the fact that they made such important progress towards the solution of the general quadratic equation one might have expected that they would have easily mastered the simpler problem of completing their positional arithmetic by means of a symbol corresponding to our decimal point and by a much earlier and more common use of a symbol for an emptiness zero. The great importance of these apparently easy forward steps may be seen if it is noted that the translation of the numerical notations now frequently presents the greatest difficulties to the students of the ancient Babylonian literature. Just where one might have expected the greatest clearness one finds the greatest vagueness.

We are thus brought face to face with the fundamental fact of the history of mathematics—that unexpectedly advanced results are frequently found side by side with very crude ancient developments. It is therefore often very difficult for the mathematical historian to convey a correct picture of the actual attainments at a certain period of time. Naturally the most advanced developments are usually first considered and hence the beginner is apt to think too highly of the attainments of the ancient civilizations. The solutions of the quadratic equations to which we referred above are, however, also of great interest since they tend to exhibit the naturalness of this equation in our efforts to secure an intellectual penetration into our surroundings and hence they tend to dignify this equation as an intellectual tool. They also tend to emphasize the fact that mathematical history is a subject that must be frequently revised in order to be up to date even as regards very elementary results.

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A FOSSIL FROG, INDOBATRACHUS NOBLE, FROM THE EOCENE OF SOUTHWESTERN INDIA

A few months ago G. K. Noble[1] reported upon his study of a number of specimens of a fossil anuran which, from the geographical locality and geological horizon as well as general resemblance to the descriptions, seems to be what was first named *Rana pusilla*,[2] later called *Oxyglossus* by Stoliczka,[3] now *Oxydozyga*.[4] Noble regards the form as an "archaic bufonid" closely related to the "archaic bufonids" found to-day in Australia. Noble writes, "The discovery of a toothed bufonid in the Eocene of India lends support to the theory of a northern origin for the Australian frog fauna."

Noble's "toothed bufonids" now living in Australia are regarded as Leptodactylids by other herpetologists. These apparently arose in South America from true bufonids. The family Bufonidae may, for convenience, be divided into two divisions, the first including archaic forms of pre-Cretaceous or early Cretaceous origin in southern lands and belonging to genera other than *Bufo;* the second division including only the comparatively modern genus *Bufo,* which probably evolved in southeastern Asia in the Cretaceous period. The genera of the first division occur to-day in Australia, in northern South America, in Java and Borneo, Ceylon, southern India and in tropical Africa. From ancient bufonids evolved apparently: (1) *Bufo,* in southeastern Asia—*Aelurophryne* seems an intermediate form from this general locality. *Bufo* has spread to all parts of the world accessible since, say, the middle Cretaceous; (2) the Hylidae arising apparently in the Guiana-Brazil highlands after they united with the Ecuadorean island; (3) the Lepto-

[1] G. K. Noble, "The Fossil Frogs of the Intertrappean Bed of Bombay, India," *Am. Mus. Novitates,* No. 401, February 8, 1930.

[2] Owen, "On the Batracholites Indicative of a Small Species of Frog (*Rana pusilla,* Owen)," *Quart. Journ. Geol. Soc., London,* III, 1847.

[3] Stoliczka, "Osteological Notes on *Oxyglossus pusillus* (*Rana pusilla,* Owen) from the Tertiary Frog-beds in the Island of Bombay," *Mem. Geol. Survey India,* VI, 1869.

[4] "Kuhl," quoted by Tschudi in synonomy of *Oxyglossus, Mem. Soc. Sci. Nat. Neuchatel,* II: 85, 1838.

dactylidae, arising perhaps further south, in Patagonia, and spreading by way of Antarctica to Australia. But these three families so merge into one another that intermediate forms, especially fossil, may be difficult to assign. *Indobatrachus,* from its distribution, would seem to be a true archaic bufonid rather than a Leptodactylid.

The presence of *Indobatrachus* in the Eocene of southwest India has to me a different meaning from that indicated by Noble. During the Triassic period the great southern continent which I have called Equatoria (Gondwanaland[5] plus South America) apparently included southern India. So also, according to usual opinion, did the more restricted Jurassic continent, Gondwanaland. The presence of one of the more archaic genera of Bufonidae in the Eocene of southern India seems to show merely that one of these ancient bufonids, all of southern origin, persisted until Eocene times in northern Equatoria, or rather in a persistent fragment of this old southern continent, a fragment which has now established connection with northern land after the disappearance of the water channels of the archipelago which once lay between them.

To the biogeographer the word continent implies a region of free faunal and floral interchange. It is important to treat the biotic evidence with full tentative initial acceptance, slurring none of it, but giving frankly the conclusions to which it would most naturally lead. Such conclusions from the biotic data are then open to criticism from all germane sources. A well-nigh overwhelming mass of biotic data seems to point convincingly to faunal and flora interchange during Mesozoic or early Tertiary time between the southern continents, interchange which was itself southern and not by way of any northern lands. The familiar mammalian data indicating chiefly northern origin and southward distribution of mammals in the Tertiary do not militate against the general biotic evidence for pre-Tertiary or early Tertiary east and west communication between the southern continents. Indeed the biotic data show a sub-Antarctic fauna and flora in Antarctica, the sub-Antarctic islands, Australia, New Zealand, southern South America and, to a less extent, Africa, which seems as truly a unit as is any other faunal and floral unit. South Africa's connection was apparently not of long duration.

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[5] The name Gondwanaland has been applied by some authors to the Jurassic continent, Australia plus southern India plus the Indian Ocean Lemuria, including Madagascar, plus Africa. Others have applied the name Gondwanaland to this great southeastern land mass plus its Triassic extension to the west across the Atlantic Ocean and including South America. I have used the name Equatoria for this larger, Triassic continent, thus avoiding ambiguity.

NEW TYPES OF PLANTS IN FLORIDA

FLORIDA, being practically isolated by large bodies of water from other countries having a similar climate, was probably quite slow to acquire tropical and subtropical forms of plants till man intervened. Since that event, however, new types have appeared in the state with increasing frequency, taking their place among the native vegetation. One such accession, *Cassia rotundifolia* Pers. or *Chamaecrista rotundifolia* (Pers.) Greene, was discovered in June, 1930, on the grade of a branch line of the A. C. L. Railroad which runs from St. Petersburg, Florida, to Sanford, Florida. So far as I can learn this plant grows nowhere in the United States, except for a distance of not more than 500 feet on the railroad embankment near Palm Springs, about three miles west of the town of Longwood, Florida, where it grows vigorously and fruits abundantly.

From my examination I am unable to make this species fully conform to the published descriptions of either *Cassia* or *Chamaecrista.* It possesses the distinctive leaf and stamen characteristic of *Cassia.* It is also but slightly sensitive and is without leaf glands. On the other hand, the single axillary flower on a twisted peduncle, the slightly unequal petals and the distinctly flat pods are features possessed by *Chamaecrista.* It may possibly deserve to be given a new genus name.

Conjecturally, one may readily account for the presence of the plant where it was found. It is a native of Mexico and the seeds may easily have been included with the packing of a boat shipment to some of the ports around Tampa Bay; from there by train to their destination on the railroad in Seminole County.

Solanum jamaicense was first brought to the U. S. D. A. Laboratory, at Orlando, Florida, about June 15, 1930, by Messrs. W. H. Pope and W. D. White, wild host scouts searching for hosts of the Mediterranean fruit fly. In a letter from Dr. A. Wetmore, of the National Museum, he states that this species had not formerly been reported as growing in the United States.

The plant was found near St. Cloud, about 25 miles to the southeast of Orlando. A visit to the locality was made on July 19 and the *jamaicense* was found growing in considerable numbers on a slight rise along the margin of what is called East Lake. The elevation is not more than 8 or 10 feet above the high-water level of the lake, and the ridge is about 100 yards wide by 2¼ miles long and lies between the lake and a slough. There is no indication that the location has been a house site, and the nearest house is now more than one half mile away. Trees and shrubs, such as *Tamala humilis, Acer floridanum, Ilex*