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*

cassine, Ilex glabra, Morella cerifera, Vitis rotundifolia, Taxodium distinctum, etc., form a dense growth over most of the area and appear to be many years old. The *Solanum* grows around the edge of the denser portion of the vegetation. The *jamaicense* seems to be thrifty in the habitat and fruits abundantly and when last seen bore all stages from bloom to ripe berries.

Aeschynomene americana L. has been observed growing and seeding profusely in waste low pine in Orange, Polk and Hillsborough counties, Florida. It seems well suited to the new environment.

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DREIKANTER IN WYOMING AND MONTANA

WHILE engaged in geologic work during the past summer in company with Dr. C. K. Wentworth, associate professor of geology, Washington University, St. Louis, the attention of the writer was called to several occurrences of dreikanter or wind-etched pebbles in Wyoming and southern Montana.

Text-books generally tell us that dreikanter are found in desert areas where there is an abundant supply of loose sand. With this conception in mind, the occurrence of the dreikanter found during the past summer is doubly interesting.

The most perfect examples of dreikanter were found on the western slope of the Wind River Mountains in western Wyoming. Here is an ancient land surface, apparently undisturbed during recent geologic time, with a relief low enough to allow for the free sweep of the wind. The pebbles were partly buried, with the upper etched portion protruding from the ground. Many finely polished specimens with the three angular edges so characteristic of true dreikanter were found at this locality. Far exceeding these in number were those showing only one well-developed angular edge (Einkanter), and others in which the upper portion of the pebble had been removed by the sand-blast action. The average size of the pebbles was about that of a lemon, although many larger specimens were found. The largest seen was a very well-developed dreikanter boulder which measured 24 inches long, 16 inches high and about 14 inches wide.

Another Wyoming locality between Rawlins and Medicine Bow yielded numbers of wind-etched cobbles of various sizes. Here the shaping of the individual cobbles had not progressed to completion, but a large proportion of the boulders studding the surface showed definite evidence of sand-blast action, many of them with characteristic einkanter shape. Wind-etched cobbles were also found in the neighborhood of Bosler, Wyoming.

The surface of terraces in the valley of the Yellowstone River east of Livingston, Montana, were found to contain numbers of etched cobbles, only a few of which showed a definite shaped dreikanter profile. Here, as elsewhere, were found many einkanter, but these were far outnumbered by fragments showing only partial etching and shaping.

It is interesting to note that at none of these localities does the country show true desert characters. All are in areas of scanty rainfall and sparse vegetation, but the amount of loose sandy material is small. Again, it may be worthy of mention that the better shaped cobbles were found in localities where the ground was not too thickly studded with rock fragments.

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DEMONSTRATIONS IN CYTOLOGY

THE teaching of cytology requires abundant microscopic demonstrations to acquaint the student with factual evidence of the different topics discussed in the lectures. At the present time cytologic investigation is so diversified and specialized that it is impossible to prepare adequate material for this purpose. To overcome this difficulty, the writer proposes to establish a mutual exchange of slides among the many investigators in cytology. The following plan is submitted as a tentative procedure.

(1) The writer offers to exchange preparations of polar body formation, fertilization, segregation of germ-cells and cleavage stages up to blastoderm formation in *Drosophila melanogaster* and Cerebratulus for any other preparations of great cytologic interest.

(2) From the slides thus received the writer will select some for his own collection and offer the remainder to all others who are interested on the basis of mutual exchange. Slides will be itemized on a mimeographed list.

The writer discussed this proposition with several cytologists in Woods Hole this summer and it was approved by all. Most investigators have duplicate preparations or some which can not be used in their work but would serve a useful purpose in general cytology. Instead of discarding such preparations, they should be put into service to demonstrate cytologic phenomena.

Teachers of cytology who wish to cooperate in this mutual exchange should label the slides carefully, and if the point of interest is limited to a small field, the area should be marked.

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