south of Harrisburg, Pennsylvania. The investigation, which was sponsored by the American Geographical Society, the Carnegie Institution of Washington and Columbia University, was under the direction of Professor Douglas Johnson and was carried on in cooperation with the Pennsylvania Geological Survey. Publication of the formal report has been delayed, but certain of the conclusions have been briefly set forth in a recent bulletin[1] of the Pennsylvania Survey, prepared by the director, Dr. George H. Ashley. The writer's responsibility to the sponsors of the investigation for these conclusions prompts publication of this statement.

In 1928 Leverett published a brief note[2] in which he reported Illinoian pebbles approximately 100 to 120 feet above the Susquehanna at Harrisburg. These pebbles occur on a stream-cut, gravel-mantled rock terrace that is well developed throughout the Great Valley-Triassic Lowland section of the Susquehanna Valley. The terrace stands at the same or nearly the same elevation as broad lowlands of the well-known Somerville peneplane (400 to 420 feet above sea level, or 90 to 110 feet above the river near Harrisburg). This relationship was interpreted by the present writer to mean that the terrace was formed by the lateral swinging of the Susquehanna River during the same pause in downcutting that permitted reduction of weak limestone belts to the Somerville peneplane by weathering and solution. The presence of rock types foreign to the drainage basin of the Susquehanna in the Somerville terrace gravels (laid down *pari passu* with the cutting of the rock benches) indicated that the Somerville cycle was interrupted during or after the advance of some ice-sheet into the drainage basin. On this evidence the writer fixed the age of the Somerville peneplane as Pleistocene. If Leverett's correlation is correct, the age of the Somerville is more definitely fixed as Illinoian or post-Illinoian Pleistocene.

Topographic maps of the terrace surfaces at and below Harrisburg were prepared by the writer with the able assistance of Dr. William O. Hickok and Mr. Forrest T. Moyer, both of the Pennsylvania Survey. A part of one of these maps, printed in the bulletin, is, through oversight, specifically credited in the legend and the accompanying text to Hickok and Moyer alone.

The original purpose of the terrace study was the investigation of the "knickpoint" concept, applied in the interpretation of the erosional history of the Susquehanna Valley by E. B. Knopf[3] in 1924. Hickok has extended the application of this concept in a recent publication.[4] Ashley, in the bulletin mentioned above, leaves the issue open. The writer takes this opportunity to state his conclusions in regard to the "knickpoint" theory, in advance of the publication of the complete report. These are, briefly, that as originally found by Stose,[5] the terraces slope downvalley; that the profile breaks considered by Knopf and Hickok to be cyclic ("knickpoints") are due rather to resistant rocks in the river bed; and that only two post-Harrisburg cycles (the Somerville and the present cycle) are recognizable in the Susquehanna Valley, as opposed to four found by Knopf and eight by Hickok.

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[1] George H. Ashley, "The Scenery of Pennsylvania," Pennsylvania Topographic and Geologic Survey: *Bulletin G 6*, 1933.

[2] Frank Leverett, "Results of Glacial Investigations in Pennsylvania and New Jersey in 1926 and 1927" (abstract), *Bull. Geol. Soc. Am.*, 39: 151, 1928.

[3] E. B. Knopf, "Correlation of Residual Erosion Surfaces in the Eastern Appalachian Highlands," *Bull. Geol. Soc. Am.*, 35: 633–668, 1924.

[4] William O. Hickok, "Erosion Surfaces in South-Central Pennsylvania," *Am. Jour. Sci.*, 5th ser., 25: 101–122, 1933.

[5] G. W. Stose, "High Gravels of the Susquehanna River above Columbia, Pennsylvania," *Bull. Geol. Soc. Am.*, 39: 1073–1086, 1928.

A NEW HORIZON FOR THE EXTINCT GOOSE, CHENDYTES

THROUGH the kindness of Dr. Chester Stock I have been permitted from time to time to examine fossil bird remains in the collections of the California Institute of Technology. Based on a single specimen from Ventura County, this note is offered as a record of the following points:

(1) A new bird-bearing locality—the twenty-third for the state of California.

(2) The third station for *Chendytes lawi*, an extinct diving goose.

(3) An extension downward of the known range of this species from Upper San Pedro to Lower San Pedro.

The specimen referred to is a single complete left tarso-metatarsus No. $\frac{211}{1670}$, California Institute of Technology from south flank of the Ventura anticline, west bank of Sexton Cañon, 800 feet south of intersection of Lake Cañon, 350 feet above the base of the San Pedro formation. Except for a slight degree of slenderness, the specimen is identical in character with one of the same segments from Arnold's Lumber Yard Station at San Pedro (Upper San Pedro Formation). The difference in stoutness is not greater than is evident within the species limits of any of our modern geese.

The type locality of *Chendytes* is at Santa Monica in shell beds 150 feet above the sea and about a mile

back from the present strand line. Tibia and tarsus were the parts retrieved here by Dr. F. C. Clark, of Santa Monica. The two segments were assigned to the same species on purely biological grounds, there being no immediate proximity within the matrix.

Later an almost exact duplicate of the tarsus was taken at Arnold's Lumber Yard locality in San Pedro thirty miles to the southeast. Here also were found specimens of a femur that were ascribed to the same species, again on purely biological grounds. The specimen from Ventura is considered to be of Lower San Pedro age, whereas the former specimens are from Upper San Pedro. Just what is the time hiatus between Upper and Lower San Pedro remains uncertain, but there is evidence of considerable orogeny having taken place in the interim. This was very generously checked for me by Dr. U. S. Grant in oral discussion of the Ventura area. Bird species are apparently of rather long life span compared with mammals, hence there appears no cause for challenge of identity on the basis of age. Molluscan species associated in the matrix include *Nassarius fossatus* Gld., *Olivella pedroana* (Conrad) and *Cryptomya californica* Conrad.

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WHY DANDELIONS?[1]

A RECENT investigation at the Massachusetts Agricultural Experiment Station has thrown more light on the food value of the common dandelion.

Dandelions in the form of greens have had a place in our diet in the spring of the year for generations. The indulgence in green foods of this kind was very appropriate after a long winter diet of cured or preserved foods. The literature, however, confirms the suspicion that people ate such things largely because they liked them and not because of any specific knowledge of their nutritional value.

Results obtained at this station have shown the dandelion to have a high protein (15.76 per cent.) and a very low fiber (9.79 per cent.) content, accompanied by a high ash, and to contain such minerals as calcium and phosphorus in abundance.

A comparison has been made of the amounts of some of the minerals with that found in other vegetables commonly used as greens.

(*Dry matter*)	*Ca* Per cent.	*Mg* Per cent.	*P* Per cent.
Dandelions	1.60	0.46	0.51
Mangold leaves[2]	1.20	0.89	0.18
Lettuce (common)[2]	0.59	0.20	0.26
Cabbage leaves[2]	1.82	0.33	0.28
Spinach[2]	1.40	0.62	0.36

[2] Analyses given in "Compilation of Analyses," Massachusetts Agricultural Experiment Station, 1919.

The dandelion contains much more phosphorus than any of the others listed and is exceeded only by cabbage leaves in calcium and by mangold leaves and spinach in magnesium. Spinach, probably the most popular of those mentioned, is slightly lower than the dandelion in content of calcium and significantly lower in phosphorus. The dandelion can therefore be rated as an excellent source of these minerals. Perhaps we may therefore say that our taste is not as fallacious as we sometimes think.

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DR. BRITTON'S INTEREST IN MINING AND GEOLOGY

DR. H. H. RUSBY'S excellent obituary of N. L. Britton, in your August 3 issue, omits something that would have thrown interesting light on the story of how the Director of the Botanical Garden, to avoid an annoying delay, went out and personally ran a rock-drill for several hours. N. L. Britton graduated from the Columbia School of Mines, with the degree of engineer of mines, with class of 1879. Presumably he took the mining course because it was the best curriculum in general science that Columbia College then offered. From 1879 to 1887 he was assistant in geology in the School of Mines, becoming instructor on botany in the latter year. Although it is therefore not remarkable that he was competent to run a rock-drill, he was, nevertheless, a man of wide as well as great ability.

THOMAS T. READ,
Vinton Professor of Mining

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

IODINE–POTASSIUM–IODIDE, AS A FIXATIVE AND DIFFERENTIAL STAIN[1]

IODINE-POTASSIUM-IODIDE, prepared according to the usual formula of one gram of iodine crystals, two grams of potassium iodide and 300 cc of water, was found to be useful as a fixative and differential stain in studies on the germination of conidia of the Peronosporales. Its value in this connection was discovered while studying the relation of time and temperature to the rate and percentage of germination of conidia of *Peronospora effusa*. In these studies drops of a suspension of conidia in water were placed on

[1] Contribution No. 192 of the Massachusetts Agricultural Experiment Station.

[1] Presented before the Biology Section of the Virginia Academy of Science, April 23, 1931.