

extends for a short distance north of the Churchill River, where it appears to reach its northern limit.

Tamarac (*Larix Americana*) is found growing on the low wet land from the northern edge of the prairie region, northward as far as Lake Athabasca, but its northern limit has not yet been reached.

Cedar (*Thuja occidentalis*) has its general northwestern limit east of Lake Winnipeg, but an isolated colony occurs on the high ridge between Winnipegosis and Cedar lakes, two hundred miles distant from the general limit. No trace of cedar could be found in the intermediate country.

Red Pine (*Pinus resinosa*) also has its general northwestern limit some distance east of Lake Winnipeg, but an outlying grove is said to occur on Black Island, a large sandy island in the lake. Cones collected from trees on this island, and undoubtedly belonging to this species, were sent to the writer by Mr. A. Neison, of Badthroat River.

Scrub Pine (*Pinus banksiana*) grows on the high stony morainic hills on the northeastern portion of Duck Mountain, and on the sandy ridges to the north.

From here it extends northward and northwestward, keeping north of the heavy white spruce forest. It is the principal tree in the rocky and sandy region from the Churchill River northward to Black River, where it grows to a height of from twenty to forty feet, and to a diameter of from eight to twelve inches. On the more level sandy plains it here forms typical pine barrens, the trees being thinly scattered over the surface, while the land beneath them is quite devoid of undergrowth and there is little or no fallen timber, so that the whole country has a park-like aspect. On the rocky slopes it has taken root in the niches and crevices, and is usually stunted and very irregular. It extends north of Black River and Lake Athabasca, and its northern limit has not yet been traced.

THE AFFINITIES OF BASQUE AND BERGER.

BY CANON ISAAC TAYLOR, M. A., LL. D., LITT. D., YORK, ENGLAND.

In the Transactions of the Berlin Academy for June, 1893, Professor Von der Gabelentz has published a paper in which he endeavors to establish a connection between Basque and the languages belonging to the Berber family of speech, such as Kabyle and Tuareg. He admits that the results of his comparison are small, the languages differing in structure of speech, in gender, and in most of the formatives. But he urges that they had certain analogous laws of phonetic change, and that there is a resemblance in a few culture words, mainly the names of animals and of articles of dress. The paper is one of the numerous examples of the way in which pure philologists may be led astray by want of an adequate acquaintance with anthropology. The author bases his attempt on a recent paper in *Ausland* on the craniological resemblance between the Berbères and the ancient Iberians. He then assumes that Basque represents the ancient Iberian speech, whereas Van Eys and Vinson, the two highest authorities, consider that it is impossible to explain such remains as we possess of the ancient Iberian by means of Basque. Broca, moreover, has proved that while the skulls of the Spanish Basques resemble, to some extent, those of the Iberians, the skulls of the French Basques belong to a different type. It is now believed that the race to which the French Basques belong imposed its language on the Spanish Basques, a feebler people of the Iberian type. If this is the case, the results obtained by Von der Gabelentz would be easy of explanation. A conquered people acquiring the language of their conquerors would retain their own phonetic tendencies, and at the same time would incorporate into the acquired language certain classes of words such as those which agree in Basque and Iberian, notably the names of articles of dress and of domesticated

animals. In short, the ancient Iberian may have affected Basque much in the same way that Celtic has affected English and French. It has introduced sundry phonetic tendencies, and some loan words belonging to certain classes. Hence we may still hold fast to the old conclusion that the nearest affinities of Basque are with Accadian and the languages of the Ural-Altaic type.

LETTERS TO THE EDITOR.

* * * Correspondents are requested to be as brief as possible. The writer's name is in all cases required as a proof of good faith.

On request in advance, one hundred copies of the number containing his communication will be furnished free to any correspondent.

The editor will be glad to publish any queries consonant with the character of the journal.

THE SO-CALLED SAND OF GREAT SALT LAKE.

THE white deposit which covers Garfield Beach and the adjacent shore of Great Salt Lake, Utah, although commonly called sand, does not consist of true sand. An examination under a low magnifying power, such as that afforded by a common pocket lens, shows that all the particles or grains composing this so-called sand are very smooth and shiny, many being globular, others ovoid, and others dumb-bell and club-like in form. None of them present angular or irregular surfaces, and none have sharp edges or points. When treated with hydrochloric or nitric acid this oölitic "sand" rapidly dissolves with energetic effervescence, leaving but tiny little specks of silicious matter behind, which latter form nuclei in the centre of the oölitic grains. The solution thus obtained contains lime. A very careful scrutiny under high microscopic powers shows the most of each grain to consist of a white, fibrous or somewhat crystallized mineral, with a central enclosed bit of dark gray mineral, that which is left as silicious undissolved matter after the acid treatment aforesaid. In fact I have found a few grains containing nuclei so large that they could be readily seen by the unaided eye. It appears, therefore, that each grain of this deposit is a nodule or concretion, consisting of white crystalline calcite, containing a minute bit of silica or silicious matter as a central nucleus around which the calcite has collected. Some months ago Professor Rompletz reported traces of what he regarded as an alga in oölitic sand from the shores of Great Salt Lake. But Dr. George Jennings Hinde, F. G. S., of London, who has made recent examinations of samples of this oölitic "sand," writes me that he has not discovered any evidence of organic origin in it. In all other respects Dr. Hinde's observations seem to agree with those made by me during the past year.

HENRY MONTGOMERY.

University of Utah, Salt Lake City, July 31.

NATURE'S ROTATION OF CROPS.

An open sandy field which the writer has passed several times a week, for the past ten years, has illustrated well this fact.

No record has been kept, but for the past five years, my recollection is accurate, and for a longer period, I am sure that the "crops" have been of the character stated, though the order of succession may not be strictly correct.

Seven or eight years ago there was a yield of *Eriogonum biennis* which was phenomenal. The following year there was scarcely a plant of this species to be noticed, but a fine crop of mullein succeeded. Daisies followed the mullein, the next year daisies and golden rod (*S. nemoralis*). The year after the solidago took full possession and was a most magnificent crop. The year following but little golden rod could be seen, and very few daisies. Last year was the most magnificent crop of *Hypericum perforatum* I have ever seen. When in blossom, the field was one mass of solid color; it seemed the petals must touch