

of fuller's earth. Quartz sand and amorphous silica exhibit practically no selective action. Powdered limestone was equally ineffective. Different clays show greatly differing capacity for separating the petroleum oils, the greatest effectiveness being secured as the clay approaches fuller's earth in composition and texture.

Interesting practical and scientific suggestions made by Dr. Day as a result of his experiments were, first, that the great variety in color, specific gravity, viscosity, etc., of the different Pennsylvania oils may be due to differences in amount of diffusion suffered by these oils in passing upward through Carboniferous shales from a common source, rather than to differences in original composition; and a corollary of this suggestion is that these oils and those of the Trenton district in western Ohio may have an identical original source far down in the geologic column, the present differences being due to the greater diffusion suffered by the Pennsylvania oils in passing upward through the intervening strata to the horizons in which they are now found.

An examination of the Texas oils shows that they contain considerable amounts of constituents which are most easily removed by diffusion, the conclusion being, therefore, that they are nearer the original source than the Ohio and Pennsylvania oils.

At the conclusion of Dr. Day's paper a number of geologists, among them Messrs. Hill, Eldridge, Hayes, Adams, Butts and Fuller, discussed various phases of the problem of the origin and storage of the fluid and gaseous hydrocarbons, the suggestions of Dr. Day as to the competency of fractional distillation by diffusion to account for the present differences in native oils, and the further suggestions of a common origin for many of them being regarded as of particular interest.

W. C. MENDENHALL,
Secretary.

DISCUSSION AND CORRESPONDENCE.

THE PROPOSED BIOLOGICAL LABORATORY AT THE TORTUGAS.

TO THE EDITOR OF SCIENCE: Since the subject of a research laboratory in or near the

tropics is under discussion, I would like to have the privilege of a few comments. For the last two years I have been discussing the matter privately with a number of people who are interested in establishing a subtropical biological laboratory. This is by no means new, since an attempt was made a few years ago to carry on research work at Bimini, an island about fifty miles east of Miami. At another time the question of locating a laboratory at Miami was under discussion, and my department (biology) at the Florida Agricultural College pledged a small sum to aid in the expense of carrying on this work.

The advantages of establishing such a laboratory at Miami may be stated as follows: (1) Miami is about one degree of latitude south of the northern limits of the Antillean flora. (2) The city is located on the Biscayne Bay, a magnificent sheet of water that is always navigable to sail-boats and launches. (3) The Gulf Stream is within easy reach, being only about six or seven miles out, cat-boats and launches making one or two trips a day during the tourist season. (4) The Miami River, Little River and other streams, which drain the everglades, may be explored easily for fresh-water forms. (5) The everglades can be reached by row-boat or bicycle, macadamized roads having been built to the edge of the glades. This vast unexplored region, about which so many erroneous ideas are abroad, is now open for botanical exploration. (6) Miami is within twenty-four hours of Havana and twelve hours of Key West by steamer. Washington can be reached in thirty-six hours. (7) Launches and sail-boats may be chartered at any time at reasonable rates. (8) Miami is located south of the 26th degree of north latitude.

At the present time the tropical laboratory has only one room which can be offered to visiting biologists. This has been in almost constant use during the past year. Among those who have taken advantage of this opportunity are Professors V. M. Spalding and J. H. Comstock.

There can be no doubt as to the healthfulness of the location, and the comforts of life

are abundantly supplied. The city has a population of about 4,000, and has water works, sewer system and electric lights. There are over forty miles of macadamized roads in the best of condition for wheeling. The question of mosquitoes has been raised by one of the people discussing this matter. There are certain places in the state of Florida that are seriously infested, but at the location under discussion there is very little difficulty. The hammocks and mangrove swamps will prove to be thickly infested during the summer months, but in the clearings and on the pine land the mosquitoes are certainly not more annoying than in Iowa or Minnesota.

In a recent number of *SCIENCE*, one of the correspondents discusses the question of locating the laboratory in Jamaica. The location may be an ideal one from several points of view; it is, however, an out-of-the-way place, and one difficult to get to and get away from. There are practically only three lines of steamers which permit one to visit the island comfortably. These sail from Boston, New York and Philadelphia. To reach the island it would be necessary to sail from one of these ports. The average worker would lose nearly a week in getting to the laboratory. To attempt to make the trip by way of Havana and Santiago requires nearly three weeks, together with a very heavy expense account. The fact of traveling in a foreign country has some fascination about it, but has likewise its disadvantages for scientific research. We have on our southern coast a vast unexplored region which has been given only a cursory examination.

Dry Tortugas has also been under discussion. This seems to be an ideal place for solitary confinement, as one of our correspondents points out. This is all right for about six or eight hours a day, but during the other sixteen or eighteen hours it is very pleasant to have the companionship of people. Dry Tortugas would have to be reached by way of Key West. It being about sixty miles west of Key West, one would have to charter a sail-boat or a launch and pay for at least two days to make the trip, a considerable loss of time.

The majority of people who work in these research laboratories have only two or three months to put in at one time, and it becomes very important, therefore, that they should not spend twenty-five per cent. or more of this time in going to and returning from the laboratory. A laboratory located at a railway station would prove much more convenient, even if located in a field not so rich as one that would be located at a point which requires a considerable amount of traveling to be reached.

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TO THE EDITOR OF *SCIENCE*: I have read with interest the letters in *SCIENCE* relating to the establishment of a biological station at the Tortugas, also Professor MacBride's suggestion favoring the Bahamas and Professor Duerden's favoring Jamaica.

Will you kindly allow me to make one further suggestion? I would ask that the Isle of Pines be considered as a location for this station and for these reasons:

1. As Professor MacBride says, West Indian waters 'surpass in interest and variety of species the Mediterranean.' The fringing cays, bays and rivers of the Isle of Pines give areas of water at varying depths and, it seems to me, conditions unsurpassed for collecting the greatest variety of species.

2. This island, though in the tropics has, because of sea breezes, a climate agreeable for study the year round. The dry, buoyant air prevents one feeling the languor usually experienced in the tropics.

3. The fresh water supply at the Isle of Pines is unsurpassed. The fertile gardens can supply food, and lumber and building material are abundant.

4. The climate is most healthful, there being no epidemic sickness. Yellow fever, typhoid fever and malaria are unknown. Americans can live there for years in excellent health.

5. This island belongs to the United States, and it is probable that a naval coaling station is to be located there. It is easy of access.

Students then could, on the Isle of Pines, have a delightful place of residence, with all

the requisites of health and comfort and variety of scenery and exercise, while perhaps no other place could supply a greater abundance of the material for study, both marine and terrestrial.

Of course I am unable to give an opinion of value on this subject. I only ask an investigation of this Island of Pines.

J. FRED. CLARKE.

'MOUNT PELEE.'

TO THE EDITOR OF SCIENCE: In SCIENCE for June 5 Mr. Mark S. W. Jefferson raises a question which is of interest to those who, like myself, are studying the volcanoes of the West Indies: What shall we call the now celebrated volcano on the island of Martinique? Mr. Jefferson seems to be inclined to use the name 'Mount Pelee.'

During a stay of four weeks on the island last year and another visit of like duration this year, I heard the mountain called almost invariably 'Mont Pelé,' very rarely if at all 'La montagne Pelée.' The latter form is that employed on the charts of the island, but the former is the one most commonly used by the French in correspondence and in written descriptions, as well as in conversation, as being more compact. The general tendency among geographers now is toward using geographical names in the way in which they are employed in the region containing the geographical feature, hence it seems to me better to write the correct French 'Mont Pelé,' than the Anglicized 'Mount Pelee,' in which there is little suggestion of the true pronunciation of the name. When but one word is to be used for the mountain, the generally accepted form, 'Pelée' is convenient and is to be recommended as conforming the formal appellation of the volcano. I speak with the more feeling on this topic, because I am one of those who have helped to perpetuate the incorrect combination, 'Mt. Pelée.'

Regarding the origin of the name and its applicability to the mountain it may be remarked that the accepted explanation among Martiniquans is that the term has been derived from the ancient Carib name for the

mountain. When Columbus discovered Martinique he found a Carib town at Le Carbet, nearly two miles south of the present site of St. Pierre. The Caribs were afraid to live any nearer to the volcano on account of their traditions regarding its activity; and they called it the 'bald' or treeless mountain, a name which in itself indicates traditional eruptions. Any one who has seen Mont Pelé since May 8, 1902, will grant that the mountain now merits its name.

EDMUND OTIS HOVEY.

SHORTER ARTICLES.

ON THE LIMITS OF UNAIDED VISION.

It is generally accepted that the sixth stellar magnitude is the limit of naked-eye vision. Though observers with eyes of unusual sharpness may under favorable conditions see stars nearly an entire magnitude fainter, that this is for all practical purposes the limit may be seen from a consideration of the faintest stars given in the various star catalogues and uranometriæ devoted to naked-eye stars. The average magnitude on the scale of the Harvard photometry of the faintest stars visible in several of these catalogues is as follows (*H. C. O. Annals*, Vol. XIV., Part II.):

Ptolemy's Almagest	5.38 M.
Sûfi	5.64 "
Argelander, Uranometria Nova..	5.74 "
Heis, Atlas Cœlestis Novus.....	6.06 "
Houzeau, Uranométrie Générale.	6.40 "
Gould, Uranometria Argentina..	6.71 "

Argelander states that his sixth magnitude comprised stars as faint as he could make out at Bonn; his eye, according to his own estimate, was of moderate sharpness. The faintest class of Houzeau comprised those stars which, under favorable conditions, could not be seen continuously, but only at intervals. Gould found in the clear atmosphere of Cordoba that on very good nights observers of ordinary vision might go even below his seventh magnitude (6.71 M. Harvard phot.), and attributes it mainly to the advantage given by the altitude of the observatory. Several of the observers at the Lick Observatory have, under the most favorable condi-