This peculiar style of the Indian flageolet I have not met with, except among the Indians of the United States, and those chiefly west of the Mississippi. There are whistles made of bone, stone or other materials by the Indians of the United States which are of the European character and they may have been known before the coming of the Europeans. But the peculiar construction of the flageolet I have described is so different from the common form that I have no doubt of its entirely Indian origin.

E. H. HAWLEY.

SCIENTIFIC BOOKS.

Traité élémentaire de météorologie. Par ALFRED ANGOT. Paris, Gauthier-Villars. 1899. Pp. vi + 417. Price, 12 francs.

Professor Angot occupies the position of meteorologist to the French Bureau Central Météorologique, and is so well known to meteorological workers the world over, that a formal treatise from his pen will receive careful consideration. It is not too much to say that Angot is to-day the foremost meteorologist in France, and as such his treatise will be considered an authority in his own country. The question naturally arises: Does the book represent the meteorology of to-day?

The author in his preface explains that he is not giving a complete treatise on meteorology, but merely a non-mathematical presentation of the elements of the science. The subject of meteorological instruments and their use has been excellently presented by the author in his 'Instructions météorologique,' and he has omitted this from his present treatise; thus having more space to devote to the results of meteorological observations and theories.

Professor Angot remarks that little attention is paid to instruction in meteorology in the institutions of learning in France, and he refers to the contrast existing in the United States, where 'a great number of special chairs are devoted to meteorology in the high schools as well as in the universities.' I must say that I am surprised to learn of this activity in the study of meteorology in our country, for my own observation has revealed an almost utter indifference, in fact the indifference which comes from ignorance, to the claims of meteorology on the part of those who have the say of what shall and what shall not be taught in our schools and colleges. If there is any institution in the United States, except Harvard University, that devotes $500 a year to meteorological instruction I have not yet heard of it; and, looking at the matter from another point of view, it may be remarked that our publishers who have brought out works on elementary meteorology express a disinclination to have their fingers burned by a repetition of the experiment.

Angot has divided his work into five books, which follow a brief introduction. Book I. treats of the Temperature; Book II. of the Atmospheric Pressure and Wind; Book III. of the Water in the Atmosphere; Book IV. of the Disturbances in the Atmosphere; Book V. of the Forecasting of the Weather and Meteorological Periods.

In the introduction the author explains the derivation of average values, the various periodic changes which occur in meteorology and the significance of interpolation.

Under the heading Temperature there is given first an excellent chapter on actinometry, which is followed by the usual treatment of the periodic diurnal and annual changes of temperature, and their variations with change of altitude, latitude and continental or oceanic surroundings, and the distribution of temperature over the earth's surface. An unusually full section treating of the influence of temperature on vegetation, and a quite lengthy chapter on the temperature of the soil and water surface closes this book. The charts representing the geographical distribution of the temperature (and the other elements) show the convergence of the meridians, and are consequently an improvement on the ordinary Mercator's projection.

The treatment of the barometric pressure is especially full as regards the diurnal variation; and, as was to have been expected, the cause of the semi-diurnal oscillation is referred to as still unknown.

The general conceptions concerning the direc-

tion, force and velocity of the wind are fully explained, but it is not until the author reaches the subject of the causes of the wind, and its relations with the temperature and pressure, that the reader's greatest interest is aroused. For it is here that the modern aspect of meteorology really begins, and it is just here that the author encounters his greatest difficulties. He gives first the cause and maintenance of fluid motions as depending on the differences of pressure at the same level, and establishes the complete circuit of such movements of the air; he then proceeds to explain the meaning of the terms *isobaric lines* and *barometric gradients*. Then follow, in succession, the influence of the earth's rotation on the movements of the air, the curve of inertia, the formation of cyclonic and anticyclonic whirls, and the circulation of the air around centers of warm or cold air. After this comes the general circulation of the atmosphere; the constant winds, the 'Trades;' the seasonal winds, the monsoons; the diurnal winds, the land and sea breezes, mountain winds, etc.

I must confess to a feeling of disappointment upon reading this part of Professor Angot's book. I had hoped that he would have given us a simple, clear, logical development of the air circulation somewhat after the manner of Ferrel's theory, but which should include the views of the best European investigators. That is what we need; but the author has contented himself with the older method of a disconnected treatment of the different features of the atmospheric circulation, some of which have been treated in one way and some in other ways by the various investigators who first developed them. I think that all of those who have tried to present in an elementary manner the results of the later investigators concerning the 'circulation of the atmosphere' have attempted an impossible short cut in meteorological literature, and that there must first be written an advanced treatment of the subject, which can later be simplified for an elementary treatise. Until this elaborate treatise has been written I think that Ferrel's development of the subject as given in his 'Popular Treatise of the Winds' (New York, 1889) will still remain the best for presentation to the student or general reader. We must bear in mind that Ferrel preceded this popular exposition of the subject by his highly technical 'Recent Advances in Meteorology.'

In Angot's chapter on atmospheric humidity the sections on condensation and clouds deserve special mention, and the reproduction of cloud photographs are unusually good. Under rainfall the charts showing the continental distribution of this element are valuable.

The subject of meteorological optics is really too difficult for presentation in a very elementary treatise on meteorology, but the author has succeeded rather better than is usual in his brief treatment of the subject.

The development of the subject of cyclones, thunder-squalls and spout phenomena is very full; but Faye's theories are given perhaps undue prominence from the German and American points of view.

In this, as in other recent treatises, the subject of Weather Predictions has not the space devoted to it which its practical importance demands.

The last chapter takes up briefly the meteorological periods or cycles, and cosmic influences.

Taking Angot's book as a whole, there is a deliberateness of treatment of each topic which can only be attained either by the making of a bulky volume or the exclusion of many important topics which deserve mention; and in the reviewer's opinion the use of the work as a textbook will be lessened thereby, but its value to the general reader will be increased. The lack of an index is, however, a most serious drawback to the free use of the book as a work of reference, for it requires the knowledge of a specialist to be able to turn at once to minor topics by the aid of the rather full table of contents alone.

Professor Angot's 'Meteorology' is a much more important contribution to French literature than it is to the world's literature of the subject, and it will, undoubtedly, do a great amount of good in supplying French readers with information concerning the present condition of a subject of very rapidly increasing interest. The French meteorological literature of recent years has not been nearly as abundant as that of other countries, and we trust that

this new book may arouse to action other authors and publishers, and especially such as will devote their energies to the presentation of the new meteorology. FRANK WALDO.

The Genesis and Dissolution of the Faculty of Speech. A Clinical and Psychological Study of Aphasia. By JOSEPH COLLINS, M. D., Professor of Diseases of the Mind and Nervous System in the New York Post-graduate Medical School; Neurologist to the New York City Hospital, etc. Awarded the Alvarenga Prize of the College of Physicians of Philadelphia, 1897. New York, The Macmillan Company. 1898. Pp. viii + 432.

This volume, to which was awarded the Alvarenga prize of the College of Physicians of Philadelphia for 1897, is a monograph of importance. There is no more fruitful field of investigation than the various forms of speech disturbance, for the student both of psychology and pathological anatomy. That progress has been slow is due to the fact, as Collins points out, that observation and analysis of speech defect has been inaccurate and post-mortem examinations incomplete. If not offering very much that is new the book before us has the merit of calling attention to our deficiencies and of urging greater care in the future. The author shows from beginning to end an admirable grasp of his subject and a complete acquaintance with the literature, which he has used with skill to produce throughout an eminently readable and stimulating book.

The monograph opens with a chapter on 'Disorders of intellectual expression, known as aphasia.' This is largely a discussion and criticism of terms, the outcome of which is a general classification of aphasia as follows:

1. True aphasia—aphasia of apperception. Due to lesion of any constituent of the speech region, the zone of language.

2. Sensory aphasia. Due to lesion of the central and peripheral pathways leading to the zone of language.

3. Motor aphasia. Due to lesion of the motor pathways, over which motor impulses travel in passing to the peripheral speech musculature.

4. Compound aphasia. Any combination of two or more of these.

Such a classification the author regards as sufficient for all practical purposes, but as a concession to established usage he makes certain sub-divisions in order to avoid possible confusion of nomenclature. For example, he retains the word 'motor' as applied to aphasia produced by lesion of Broca's convolution 'solely because such usage has been consecrated by time,' and not because he believes this center to be in reality entirely motor.

Following this chapter is a valuable historical sketch comprised in twenty-three pages, with a good bibliography. Charcot's autonomous speech centers are sharply criticised, both here and later in the book, and Dejerine's services to the subject receive the warmest appreciation, particularly because of their general opposition to Charcot's views.

Under the heading of 'An analysis of the genesis and function of speech,' Collins analyses, from the point of view of physiological psychology, the various elements which ultimately result in the development of the faculty of speech. It is clearly too large a subject for so cursory a handling, and on the whole is less satisfactory than the discussions which are concerned solely with the physical side of the process.

Chapter IV. concerns itself with remarks on the anatomy of the brain, the zone of language, and the evidence regarding a special graphic motor center. It is largely anatomical and presents with clearness the facts we should know relative to the structure of the brain in general, and particularly of those parts to which are attributed special functions in regard to speech. Flechsig's recently expressed views as to the zones of projection and the zones of association are narrated in considerable detail, because of their more or less direct bearing upon the conception of aphasia which the author has elaborated. Collins is definite in his opinion that the zone of language, made up mainly of Broca's convolution, the posterior portion of the first temporal convolution, and the angular gyrus, does not send fibers directly into the motor projection tract. The Rolandic cortex must first be called upon before an idea can be expressed as speech. He is equally confident that we now have sufficient evidence to overthrow com-