THE Ninth Annual Exposition of Power and Mechanical Engineering is to be held from December 1 to 6 in the Grand Central Palace, New York, N. Y., under the leadership of I. E. Moultrop, chairman of the advisory committee of the exposition. This year plans call for an exhibit which will include many indications of progress during the year which has already seen numerous mechanical advances.

THE Seventeenth French Congress of Hygiene will be held at the Institut Pasteur, Paris, under the presidency of Professor Delépine, of the Académie de Médecine, from October 20 to 23, it is announced in the *British Medical Journal*. The following subjects will be discussed: the successive changes in the French pharmacopoeias, introduced by the president; comparative statistics of infantile mortality, introduced by Dr. Lesage; the relation of health offices to health inspection, introduced by MM. Aublant and Prunet, and Brocquin-Lacombe and Bennet; and hygiene and reconstruction in the flooded area in the south of France. Lectures will also be delivered by Professor Sacquépée on psittacosis, and by Dr. Dujarric de la Rivière on Lavoisier as hygienist. Further information can be obtained from Dr. Dujarric de la Rivière, Institut Pasteur, Rue Dutot, Paris, XV^e.

MR. EDWARD S. HARKNESS has given to Columbia University $500,000 to supplement his original gift of $2,000,000 for a residence hall at the Medical Center.

AN exposition, the object of which will be to demonstrate the general health conditions and progress in physical culture in Switzerland, will be held in Berne next year. The exposition will be divided into groups, as follows: Climatic; climatic and bathing resorts: housing; architecture, popular dwellings, unhealthy houses and quarters, heating systems, cleaning, ventilation, disposal of refuse, drinkable water: food; meat and its food value, unhealthy meat, animal diseases, milk and milk products, frauds and unsanitary handling of food products, sanitary maintenance of stables, vegetables' nutritive value, falsifications: fashions and clothing; history of clothing, methods of examining tissues and colors, irrational and eccentric clothing, industry and trade. Corporal hygiene and sports; physiological effects of hygiene, bathing and baths, sport societies and establishments: labor; protection of workers, safeguards and insurance: infectious diseases; campaigns against epidemics, vermin and parasites: care of sick and ailing; hospitals, clinics, polyclinics, dispensaries, training schools for nurses, National Red Cross. Scientific and medical research; goiter, cancer, intoxication, alcoholism, origin, preparation and use of medicines: child welfare; traffic; sanitary installations, traffic rules, antidust campaign: man; anatomy and physiology, medical and natural science history, racial hygiene and heredity. Statistics; statistics pertaining to hygienic and medical facts: sanitary service of the army: industries and trade; general review of present sanitary and hygienic conditions and facilities.

DISCUSSION

YARDANG AND ZASTRUGA

USING the right term in the right place is like choosing the proper tool for a particular operation in carpentry. Both facilitate good work. Hence this note regarding two terms useful to geologists but somewhat confused in usage and not yet widely employed.

The words *yardang* and *zastruga* denote certain features made by the action of the wind. The first is a native Asiatic word utilized by the explorer Sven Hedin[1] to name the curved and often undercut ridges that the sandblast carves from weakly indurated deposits of silt and sand. Such forms are found in all deserts. The German spelling used by Hedin is "jardang" but the Anglicized form is preferable for English-speaking workers.

Zastrugi (singular *zastruga*) are wind-made ridges of snow, well known to polar explorers and to dwellers in cold regions in general. The Russian word *zastruga* means a splinter made by planing a board against the grain.[2] From that it was modified to designate a sand bank undercut by a stream and also mere sand bars built by currents. In Siberia it came to be used for the low ridges, most of them sharply undercut on the windward side, that are characteristic of snow surfaces abraded by strong winds. The first use of the term in scientific writings, so far as the writer has been able to learn, was in a geographical report by Baron von Wrangel[3] who thus referred to the wavy ridges on the snow in the Arctic wilderness. In transliterating into German, the Russian *zastruga* became *sastruga,* and the latter spelling has unfortunately been adopted by most later English and American writers. The Century Dictionary, however, gives only the original and correct form, *zastruga.*

Snow, sand and silt are all mineral deposits of sim-

[1] Sven Hedin, "Central Asia and Tibet; towards the Holy City of Lassa," Vol. I, p. 365, 1903.

[2] Vladimir Dal, "Explanatory Dictionary of the Russian Language," Vol. I, p. 661, 1880.

[3] Baron Ferdinand P. v. Wrangel, "Journey along the North Coast of Siberia," pp. 311–312, 1839.

ilar grain and consistency. The action of the wind upon them forms almost identical features, some by erosion and others by heaping up the material swept from elsewhere. In view of these facts it seems at first glance that one term for the eroded ridges and another for the built features would suffice. We might then have silt zastrugi and snow zastrugi and also sand dunes and snow dunes. Out of 28 geologists and explorers to whom I have referred the question seven adopted this position, while two made no choice.

Of the fourteen who believe that both *zastruga* (or less correctly *sastruga*) and *yardang* are needed terms and should be retained, some are influenced by the fact that snow differs from silt in being subject to melting. Others, including three Arctic explorers and two eminent geomorphologists, employ the word zastrugi to denote the various minor irregularities of the snow surface whether due to erosion, deposition or differential melting.

The yardang is apparently a definite type of land form due exclusively to the abrasive action of wind on suitable material. If any one chooses to speak of *snow yardangs* he will be perfectly understood, as he will be also in speaking of *snow dunes, snowslides* and *snow ripples*. The term zastrugi, however, has never been thus limited, and it is evidently in common use by Arctic explorers to describe features some of which are wind carved, others wind built and some not wind made at all. From these facts it may be concluded that both terms probably have their uses and will be retained, but of the two yardang is the more definitely limited in meaning and hence more satisfactory for the purposes of the careful geomorphologist. Zastruga is likely to be used chiefly by Arctic explorers and geographers not primarily concerned with processes of land sculpture.

ELIOT BLACKWELDER
STANFORD UNIVERSITY

WHAT IS CHITINE?

THE entomologists and the chemists have come to a curious dilemma with reference to this very common word. The entomologists universally give it a physical interpretation, using it to refer to the characteristic system of organic substances which make up the insect exoskeleton, while the chemists as consistently use it of a single chemical compound, which they can isolate by the proper chemical processes from this complex. Many people have assumed that the difference was trivial, on the ground that the chemists' "chitin" was the principal substance of the entomologists' "chitin." In fact, Campbell's recent study[1] shows plainly that the chemists' chitin is in fact a secondary constituent of the insect skeleton, never constituting more than half of its substance, and occasionally (as in egg-shells and tracheal lining) wholly wanting.

On turning to the original proposal of the term,[2] we find that the author undoubtedly was the originator of the misconception that his chitine was the principal substance, on account of the somewhat loose way in which he presents his analysis; but that he obviously had specially in mind the substance that the chemists now call chitin (or rather chitosan), and that he postponed for a later study, which I believe never was carried out, the study of the larger amount of substance which he calls "the part of the precipitate insoluble in alcohol" on page 33, and which obviously includes the substance or substances which give the insect exoskeleton its hardness, its color and the major half of its substance.

Shall entomologists then continue to call "chitine" the substances that make the exoskeleton of insects, as they have been doing for nearly a century, since Newport, or shall they grant to the chemists a word which was originally proposed by a chemist and has had an even longer period of use in chemistry, though there is an older name (fungine) for the same substance? I suspect that we shall probably go on as we have been doing; the entomologists will use chitine (like bone) for a physical system of substances which is formed into structures of interest to them; while the chemists will continue to use it of the soft transparent "filler" of the insect skeleton which is on the whole of very little interest to the entomologist, but is a chemical substance of known composition.

There seems need for further research on both sides; the composition of the substances which give the insect skeleton its hardness and its characteristic tint has never been made out—a thing which only the chemists can do; and there is need for the entomologist in turn to find what place in the insect economy is taken by this other substance the chemist calls chitin, and which so commonly makes up a substantial proportion of the skeleton.

WM. T. M. FORBES
CORNELL UNIVERSITY

TOPOGRAPHIC CONTROL OF CLOUD DISTRIBUTION

IN Giles and Montgomery Counties, Virginia, and the adjacent portion of West Virginia, there are three minor physiographic provinces, the state line separating the northwestern from the central. The Cumberland plateau, the northwestern province, is made up of round and oblong hills which rise to

[1] *Annals Ent. Soc. Am.*, 22: 401–426, 1929.

[2] Odier, *Mém. Soc. Hist. Nat. Paris*, 1: 29–43, 1823.