ZOOLOGICAL NOTES.

A short time ago two tusks of an African elephant were noted in Science, weighing respectively 224 and 239 pounds. Messrs. Tiffany & Co., in whose rooms these tusks are now on exhibition, have kindly given the following measurements of these huge tusks: Length 10 feet and ¾ inches and 10 feet 3½ inches; circumference 23 inches and 24½ inches. Sir Samuel Baker gives the weights of the two largest tusks that came under his observation as 188 and 172 pounds, but says that the average weight of a pair of tusks of the African elephant is 140, one being usually about ten pounds heavier than the other.

The weight of the tusks of the extinct *Elephas ganesa* is unknown, but so far as the dimensions can be taken from a cast the measurements are as follows: Length 12 feet 4 inches, circumference 2 feet 3 inches.

One of the largest, if not the largest, of Mammoth tusks is one brought from Alaska by Mr. Jay Beach of Oakland, Cal. This is 12 feet 10 inches long and 22½ inches in circumference and weighs about 200 pounds. The average Mammoth tusk is from 7 to 9 feet long and 60 to 80 pounds in weight.

The tusks of the Mastodon seem as a rule to be a little more robust than those of the Mammoth and to taper more rapidly, a large tusk is 9 feet 4 inches long and 23 inches in circumference.

A large deposit of fossil bones has been found near Kimmswick, Mo., and excavations are being made by a company formed for that purpose. Many bones of the Mastodon have been exhumed as well as those of Bison and other animals. The locality is thought to have been an ancient salt lick about which the animals became mired as at Big Bone Lick, Kentucky.

A miner has filed a claim in Death Valley, California, for the purpose of excavating the bones of three Mastodons which were discovered in the spring of this year and another claim has been taken out for mining a Pliocene whale in southern California.

Dr. J. L. Wortman recently called my attention to the fact that text-books of comparative anatomy state that the lachrymal bone is wanting in pinnipeds, at the same time saying that his own belief was that examination of good specimens would show that this bone was present in young animals. Material in the U. S. National Museum enabled me to completely verify Dr. Wortman's prediction, for the lachrymal is present in fœtal or very young fur seals, *Callorhinus*, although at an early date it fuses so completely with the maxillary that, as a rule, all traces of it are lost within a month or six weeks after birth.

The lachrymal is a thin, scale-like bone, applied to the posterior face of the orbital portion of the maxillary and in a small fœtus there is a distinct lachrymal process and lachrymal foramen, the bone projecting slightly beyond the maxillary. At this stage the growth of the lachrymal is arrested and the maxillary soon comes to project beyond it, while later on the two bones fuse and all trace of the lachrymal is lost. The same thing evidently occurs in *Otaria* and *Eumetopias*, as in skulls of the young of these two genera the lachrymal is indicated by a suture which is completely obliterated in adult animals.

F. A. Lucas.

BOTANICAL NOTES.

GENERA OF AMERICAN GRASSES.

Professor Lamson-Scribner, Agrostologist of the United States Department of Agriculture, has issued as Bulletin No. 20, a useful little book of about two hundred pages, bearing the title of 'American Grasses, III,' containing descriptions of the tribes and genera of the grasses of North America. Each one of the 137 genera is illustrated by drawings of the plant with enlarged details of spikelets, flowers, grains, etc. These genera are distributed among the thirteen commonly recognized tribes as follows: Maydeae, 4; Andropogoneae, 9; Osterdamiae, 4; Tristegineae, none; Paniceae, 11; Oryzeae, 7; Phalarideae, 3; Agrostideae, 26; Aveneae, 8; Chlorideae, 13; Festuceae, 40; Hordeae, 11; Bambuseae, 1. Ample keys make it easy to distinguish the tribes and genera, and the descriptions of both are full and apparently well drawn. This volume closes with a bibliography of works cited on its pages, and an index of Latin and English names.

WEEDS OF THE NORTHWEST TERRITORIES.

THE bulletin on 'Noxious Weeds and How to Destroy Them,' prepared by T. W. Willing, Territorial Weed Inspector, and published by the Department of Agriculture of the Government of the Northwest Territories of Canada, contains matter of botanical as well as agricultural interest. It is curious to notice that some plants which elsewhere are never thought of as weedy in their habits are catalogued in the 'list of the worst weeds.' Thus we find that *Hierochloe borealis* (now known as *Savastana odorata*) is spoken of as 'one of the most troublesome weeds in the Northwest Territories.' One is surprised at finding in the 'list of worst weeds' such elsewhere harmless plants as the common white anemone (*Anemone dichotoma*), the golden fumitory (*Corydalis aurea*), the spider flower (*Cleome integrifolia*), the erect cinquefoil (*Potentilla norvegica*), Silver-weed (*Potentilla anserina*), etc.; and also that some of the most common weeds of other regions are omitted, for example, crab-grass (*Panicum sanguinale*), green foxtail (*Chaetochloa viridis*), yellow foxtail (*C. glauca*), jimson weed (*Datura stramonium*), purslane (*Portulaca oleracea*), oxeye daisy (*Chrysanthemum leucanthemum*), burdock (*Arctium lappa*) and dandelion (*Taraxacum taraxacum*).

THE FERNS AND FLOWERING PLANTS OF OKLAHOMA.

PROFESSOR E. E. BOGUE, of the Oklahoma Experiment Station, publishes as Bulletin 45 a list of the ferns and flowering plants of Oklahoma. It is the first attempt at such a catalogue, and the author disclaims completeness for it, yet it is more than ordinarily interesting, since so little has been published in regard to the flora of the territory that it is to most botanists a *terra incognita*. Looking over the list we find 13 Pteridophyta, but one Gymnosperm (*Juniperus virginiana*), 99 Gramineae, but one Orchid (*Gyrostachys gracilis*), 131 Compositae, etc. There are 30 species of trees, including hickories (3 species), the black walnut, cottonwood, willows (3), oaks (5), hackberries (2), elms (2), mulberry, sycamore, hawthorn, wild plum, red-bud, honey locust, Kentucky coffee-tree, box elder, China tree, woolly buckthorn, persimmon, and ashes (2). One is struck by the absence from this list of bass-wood, crab apple, wild cherry, maple, ironwood, and birch. Among herbaceous plants we notice 12 species of *Eragrostis*, 13 of *Panicum*, 15 of *Polygonum*, 5 of *Astragalus*, 7 of *Lespedeza*, 6 of *Psoralea*, 14 of *Euphorbia*, 4 of *Convolvulus*, 6 of *Ipomoea*, 7 of *Verbena*, 6 of *Physalis*, 6 of *Solanum*, 8 of *Plantago*, 6 of *Artemesia*, 10 of *Helianthus*, etc. There is no *Lilium*, *Taraxacum*, *Hepatica*, *Phlox*, nor any species of *Ericaceae*, but oddly there is a *Claytonia*, a *Castalia*, an *Aquilegia*, *Lobelia cardinalis*, and *Chrysanthemum leucanthemum*. We shall look with interest for further results of Professor Bogue's studies of this interesting flora.

NORTH AMERICAN FOX-TAIL GRASSES.

THE American species of the weedy grasses known as Fox-tail or Pigeon grasses, and which were until recently described under the generic name of *Setaria* have been carefully revised by Professor Lamson-Scribner in a recent bulletin (No. 21) of the Division of Agrostology, of the United States Department of Agriculture. The name *Setaria* having fallen into synonymy, and the autonomy of the genus making *Panicum* impossible, *Chamaerophis* and later *Ixophorus* were suggested, only to be discarded after further study, these genera being clearly distinct from the grasses under consideration. Nothing remained but to re-christen the genus, which was done in 1897 (Bull. 4), with the name *Chaetochloa*. Accordingly these grasses should now bear this generic name instead of *Setaria*, or any of the others mentioned above.

In the present paper 23 species and 12 varieties are described, nine of which are new to science, viz: *C. gibbosa* from Texas and Mexico; *C. hispida*, Cuba; *C. leucopila*, Mexico; *C. rigida*, lower California; *C. latifolia breviseta*, Mexico; *C. macrosperma*, Florida and Texas; *C. villosissima*, Texas; *C. grisebachii ampla*, New Mexico and Mexico; *C. grisebachii mexicana*, Mexico. The more common species in the United States are *C. Glauca*, Yellow Fox-tail; *C. verticillata*, Hispid Fox-tail; *C. viridis*, Green Fox-tail; *C. italica*, Millet; and *C. italica germanica*, Hungarian Grass. The paper closes with lists of excluded (11) and doubtful (12) species, and a good index.

MOSSES OF THE CASCADE MOUNTAINS.

UNDER this title the Cambridge Botanical Supply Company is publishing sets of mosses collected by J. A. Allen, in 1898, in the Cascade Mountains of Washington. Each set contains 147 numbers, one of which (56. *Pohlia porosa*) is new to science, and another (46. *Zygodon rupestris*) is new to North America. The determinations have been made by Mrs. E. G. Britton, with the aid of Geo. N. Best, J. Cardot, Harold Lindberg, F. Renauld and others. An examination of the specimens shows them to be ample and well preserved. The collection is a notable addition to the exsiccati of Western North American Mosses.

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*ACTIVITY IN MAGNETIC WORK.**

Magnetic Survey of Wurtemburg.—Work on this survey, under the direction of Professor August Schmidt, will be begun during present summer.

Magnetic Survey of the Azores.—Captain F. A. Chaves writes, that the magnetic survey of the Azores was begun last year, and that he has established at Ponta Delgada a declinometer for eye-readings, with the aid of which he will reduce the field observations to the same moment of time.

Magnetic Work in Japan.—In Japan, complete photographic registrations of the variations of magnetic elements are now being continuously made at the Central Meteorological Observatory, and the four stations belonging to the Earthquake Investigation Committee, viz:

	Lat. (North)	Long. (E. of Gr.)
The Meteorological Station, Nemuro.....	43° 20′	145° 35
The Second Higher School, Sendai.....	38 15	140 52
Central Meteorological Observatory, Tokio.	35 41	139 45
The Meteorological Station, Nagoya.....	35 10	136 55
The Fifth Higher School, Kumamoto.....	32 48	130 42

All these stations are provided with a set of Mascart's self-registering magnetograph, and the instruments for direct measurements. The daily records are all dispatched without delay to the Central Meteorological Observatory for comparative investigations.

Since 1897, at the Central Meteorological Observatory, the absolute measurements of magnetic elements are being taken once a month. The instruments with which the measurements are carried out are the declinometer, vibration and deflection apparatus constructed by Professor Tanakadatè, of the Tokio Imperial University, and a dip circle of Kew pattern.

The buildings at all the stations are constructed of wood, with exclusion of iron, and the supports for instruments are made of granite, or marble, placed on the masonry work of white bricks which are free from magnetic ingredients.

The extreme dampness of the soil in this country renders it difficult to use underground rooms, which are very desirable for constancy of temperature. On this account the buildings at the four stations, except at Tokio, are made above the surface of the ground, and great care is taken to keep off the sudden changes in temperature.

At Tokio, besides the underground rooms for the variation instruments there is also a building for absolute measurements, constructed with proper precautions against any disturbing influence.

The first annual report on the observations of terrestrial magnetism and atmospheric electricity made at the Central Meteorological Observatory is now passing through the press.

The precise account of the recent magnetic survey in Japan carried out under Professor Tanakadatè, we understand, is to appear shortly in the *Journal of the College of Science*, Tokio. The first and second papers of the magnetic survey made in this country several years ago have already been published in the same Journal.

Magnetic Survey of the United States and Countries under its Jurisdiction.—The Congress of the United States has appropriated for field expenses, and purchase of magnetic instruments during fiscal year, July 1, 1900, to July 1, 1901, the sum of $25,000; this is exclusive of office expenses and salaries of permanent employees. The field work is fairly well under way. Ten complete magnetic outfits are now in use by observers in various parts of the United States and Alaska. A site for the standard

* From advance proofs of *Terrestrial Magnetism and Atmospheric Electricity.*