

an exhaustive work of nearly a thousand pages, a general idea of the nature and scope of Dr. Pammel's† book can be given and special reference may be made to the various kinds of vegetable poisons and the species or groups of species of plants which are most injurious to man and other animals. An idea of the completeness with which Dr. Pammel's work has been done may be gathered from the fact that 1,097 books and papers are enumerated in the bibliography of poisonous plants which concludes the volume.

The introductory chapters deal with Bacterial Poisons; Dermatitis or skin diseases caused by plants; Forage Poisoning, Ergotism and Aspergilliosis, the latter caused chiefly by moulds; and Poisoning from Fungi. It is, however, chiefly plants of the higher orders that will be referred to in this summary and only the commoner or best known species, the order followed in their enumeration being that of Engler and Prantl and Gray's Manual.

The only fungi that need be mentioned are of the genus *Amanita* of which *A. muscaria*, Fly Agaric, and *A. phalloides*, Death Cup, are the commonest and most dangerous species. As distinguished from the ordinary mushroom, both species have white gills and a bulbous base, while the mushroom has pink or brownish gills and is without a bulbous base. Both species of *Amanita* grow usually in woods or along the borders of woods and seldom on lawns or in open fields. There are no ferns that are known to be very injurious to animals, although some are suspected of being so, but *Equisetum arvense* when in large quantity frequently poisons and sometimes kills horses. This has been proved by recent experiments, but fortunately it seems to be only the dried plant that is injurious. Hay which contains much *Equisetum* should not be used either for food or bedding. Many grasses are poisonous under certain conditions, but recent research shows that much of the poisoning that has been attributed to grasses is due to fungus growths rather than to the grasses themselves. *Lolium temulentum*, Poison Darnel, has long been known to be poisonous, its effects being usually seen when it is ground up with wheat. Some species of *Araceæ* such as *Acorus Calamus*, *Symplocarpus foetidus*, *Calla palustris* and both species of *Arisaema* are acrid and under some conditions poisonous. Only a few species of liliaceous and orchidaceous plants are poisonous. *Zygadenus* frequently poisons sheep and other stock in the west, but so far as experiments have gone only before the plants flower, and animals are usually killed by eating the leaves, or more frequently the bulbs, before the plant

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