

SUMMARY.

1. Studies have been made of the effect of temperature and concentration on the distribution of caffeine between water and chloroform.
2. The effect of the presence of other solutes in the aqueous layer on distribution has been determined at 25°.
3. The solubility of caffeine in water and certain aqueous solutions has been measured at 25°.
4. Further proof of the existence of molecular compounds of caffeine with sodium salicylate and sodium benzoate in aqueous solution has been obtained by cryoscopic measurements.
5. The distribution of antipyrine has been determined under similar conditions.
6. The solubility of *p*-acetoxy-acetanilide in water and chloroform has been measured at 25°. Its distribution between water and chloroform has likewise been determined.
7. Comparison of the distribution curves for caffeine and antipyrine between water and chloroform confirms the earlier assumption that the distribution ratios of these substances are nearly if not quite identical.

WASHINGTON, D. C.

HOLLYHOCK ROOT (?) FOR ALTHAEA.

BY OLIVER A. FARWELL.

There has come upon the markets of this country what purports to be althaea or marshmallow root. Superficially it bears a strong resemblance to the official drug and is of about the same size and is covered with loosened bast fibers; it is lighter colored, the longitudinal ridges are not so prominent, the grooves broader and shallower or these entirely absent; the cambium zone is circular while in Althaea it is usually angular, but in undoubted Althaea, the root often is not grooved and the cambium zone not angled; in testing for lignified tissues, we find that in the official drug the wood groups are separated, very minute and evenly distributed throughout the central cylinder; in the substitute they are less numerous, but larger, the largest forming concentric circles. It is unquestionably the root of some malvaceous plant closely related to Althaea and may be that of *Althaea rosea*, the Hollyhock, which is often used in place of Althaea.

SOURCE OF BALSAM POPLAR BUDS.

BY OLIVER A. FARWELL.

The present edition of the National Formulary allows this product to be derived from *Populus nigra* Linn or from *Populus balsamifera* Linn, the latter name interpreted as currently but wrongly applied to the northern Balsam Poplar, the proper name for which is *Populus Tacamahacca* Mill. As a question concerning the accuracy of this source arose, I determined, if possible, to verify the botanical source. While on my vacation in August, I collected branches of *P. candicans* with well-developed buds and I have seen commercial samples exactly similar; also I have seen commercial samples that agree in every particular with the buds of *P. Tacamahacca* Mill. A third sort was found upon the market that was much larger and more angled than the above mentioned.

Through the courtesy of Parke, Davis & Co., of Detroit, Mich., and of S. B. Penick & Co., of New York City, I received leafy branches with the well-developed buds of this latter kind. I identified these as the Carolina Poplar or Cottonwood, *Populus balsamifera* Linn; but to make doubly sure the specimens were sent to Dr. C. S. Sargent of the Arnold Arboretum who confirmed my identification. We therefore have Balsam Poplar buds derived from *P. Tacamahacca* Mill., *P. candidans* Ait., and *P. balsamifera* Linn. True *P. balsamifera* Linn is one of the cottonwoods that has been generally included in *P. deltoidea* Marsh while the name has been misapplied to the northern Balsam Poplar, the proper name for which is *P. Tacamahacca* Mill. *P. angulata* Mx. f. is a synonym of *P. balsamifera* Linn and has sometimes been used to designate the species when given recognition. It is also probable that the common or Virginia Cottonwood, *P. balsamifera* var. *Virginiana* (Castig.) C. S. Sarg. (*P. deltoidea*, Marsh.), is a source of the Balsam Poplar buds. I have seen nothing on the market that might be classed as having been derived from *P. nigra* Linn. The proper time to collect these buds is in the spring when the trees are in full bloom and before the leaf buds have broken, so as to avoid gathering flowering buds, which could scarcely be helped if collected at any other time, the buds being developed sufficiently for gathering.

DEPARTMENT OF BOTANY,
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MALARIA PREVENTION AND CONTROL.

BY E. H. GANE, PH.C.

Malaria is one of the most widespread and destructive of all diseases affecting mankind. In some form or other it is prevalent all over the world and in some countries is responsible for an enormous number of deaths. In India, for example, malaria is responsible for over 100,000,000 cases of illness and an average of 1,130,000 deaths per year. In our own country it is very prevalent, more so perhaps than is generally imagined, all along the low-lying lands of the Mississippi and Missouri rivers and, in fact, in all those states which contain many rivers and marshes. There is, perhaps, no more important problem than the control and eradication of malaria in many sections of the United States. Not only does it affect the health of the people and cause many deaths, but it reduces the value of the land and, to a very large extent, the earning value of large numbers of patients who are affected with the disease but not to such an extent as to incapacitate them for light work. Many persons are infected without knowing it and the diminution in the efficiency of these people is a serious economic loss in many parts of the country.

Malarial fever, which is called by various names, such as Chills and Fever, Ague, Swamp Fever, Spring Fever, Congestive Chills, etc., is caused in only one way. Many people, including some physicians, are under the impression that it may be caused by drinking bad water, eating indigestible food or inhaling the night air. This is not so; malaria is always caused by infection and this infection is only brought about in one way, and that is, by the bite of the *Anopheles* female mosquito. The male mosquito does not bite. These facts have been experimentally proved over and over again by English, Italian and American investigators. Their