

NON-ALCOHOLIC SOLVENT FOR ACETYSALICYLIC ACID.*

BY IRWIN A. BECKER.

It is usually desirable to give medicines in solution to infants and young children. Hydroalcoholic vehicles, such as aromatic elixir, essence of pepsin, etc., may dissolve a sufficient amount of acetylsalicylic acid for the required dosage, but are, frequently, undesirable for other reasons—their alcoholic content or some other constituent of the preparation.

Recently, physicians in our community prescribed solution of potassium citrate, made with lemon juice, as a solvent and vehicle for acetylsalicylic acid. They were very particular relative to the method of preparation and, in some instances, designated the pharmacist by whom these prescriptions were to be compounded. Some pediatricians discovered that solution of potassium citrate readily dissolved acetylsalicylic acid in sufficient quantity for their needs in the treatment of children. It was also found that the proportion of potassium citrate to acetylsalicylic acid varied, within a limited range—between three and four parts of potassium citrate to one of acid, on the one hand, and an undesirable amount or the limit of solubility of the potassium citrate, on the other. The most desirable proportions, to insure complete solution under the various conditions of compounding, are about four to one, *i. e.*, for every gramme of acetylsalicylic acid, prescribed in a mixture, 4 grammes of potassium citrate are required. Syrup may be added, if desired by the physician, to make the preparation more palatable.

The writer experimented with sodium citrate and found that it answered the purpose as well as potassium citrate, and is considerably cheaper. A number of physicians who were interviewed relative to possible therapeutic incompatibilities between alkaline citrates and acetylsalicylic acid stated that in their practice none had occurred.

It may be mentioned that the delicate reaction with ferric chloride solution for free salicylic acid and soluble salicylates is inhibited. It was also attempted to remove the dissolved acetylsalicylic acid by shaking out with immiscible solvents, using both ether and chloroform alone, and together, but only a very small amount of residue was recovered on evaporation of the solvent, showing that, probably, a combination of the acetylsalicylic acid and the alkaline citrate is effected. It was also found that salicylic acid can readily be dissolved in water by the aid of sodium or potassium citrate in the proportion of four to one; so that with a solubility of 1 to 460 in water, 5 grains of salicylic acid and 20 grains of sodium or potassium citrate will readily dissolve in 60 minims of water, *i. e.*, in the proportion of about 1 to 11.

GALEN.*

BY LOUIS GERSHENFELD.

I will venture to ask your attention to a brief sketch of a historical personage, who may be considered as representing one of the most remarkable of medical and indirectly of pharmaceutical characters, one to whom we owe a debt of gratitude.

*Read before Section on Practical Pharmacy and Dispensing, A. Ph. A., New York meeting, 1919.

* Read before Section on Historical Pharmacy, A. Ph. A., New York meeting, 1919.

Claudius Galenus (A. D. 130-200) was born early in the autumn of the second century in the city of Pergamus, in Mysia, near the western coast of Asia Minor, opposite the Aegean Archipelago. He was a Greek by descent as well as by birth. His father, whose name was Nikon, was a man of influence, good fortune and wealth, and, as Galen himself informs us, in addition to his vast knowledge of architecture, astronomy, arithmetic, grammar and other branches of philosophy, he was a man possessed of patience, justice and numerous other virtues.

Galen received a liberal education in the various branches of knowledge obtainable at the time; nothing was spared to make this thorough and comprehensive. His first instruction was received from his father. At the age of 15, he entered upon the study of philosophy and logic, considering the subject with the ablest teachers of the day. Destined to become one of the greatest pupils of philosophy, his plans were quickly changed by his father, who in consequence of advice given him in a dream, chose for his son the profession of medicine. On what a delicate poise does the destiny of a great genius sometimes hang or turn. Thus a youth, who became one of the most celebrated physicians in the world—one whose influence in different branches of medical science has been more extensive and of far longer duration than that of any other individual either in ancient or modern times—had his helm put about and a new chart and new sailing directions given to him, in consequence of a whim suggested by a dream. The influence of this dream hovered over medicine during many subsequent ages.

Nothing was spared in his medical education so as to obtain the best of knowledge, though at the age of 21, he was called upon to mourn the loss of his father. He studied medicine under several masters of Pergamus and then left for Smyrna to study philosophy and medicine; he went to Corinth to attend other lectures and finally to Alexandria in Egypt, then the center of medical science, where he devoted himself more especially to anatomy. Not satisfied with the vast knowledge thus gained from the corps of instructors, he traveled into other countries to further and better witness the practice of men of eminence, to converse with experienced physicians, to observe natural peculiarities and the influence of climate on disease. He accordingly, with this end in view, traveled on foot (so that his opportunities for careful observation might be increased) to Phoenicia, Palestine, Crete, Cyprus, Italy and Macedonia.

Having in all these ways acquired an extensive and thorough knowledge of the principles and practice of medicine and surgery, he then returned to his native city at the age of 29, and such was the estimation in which he was held in Pergamus, that he immediately was appointed by the Pontiff, or High Priest, Physician to the School of Gladiators—a position which he filled with great reputation owing to his success in the treatment of fractures and wounds incident to the fierce combats there practiced. Owing to some seditious disturbances and popular commotions which occurred Galen (in his 34th year) left his own country and settled in Rome. Because of his successful disputations, lectures, writings and practice he excited so much envy and ill-will among the Roman physicians that he remained there only 5 years. He was, however, able to hold his own and succeeded in acquiring the friendship and confidence of many distinguished and influential persons and families, whom he treated. He later attended Emperor Aurelius and his son, preparing for them Theriaca.

Galen is sometimes said to have kept a pharmacy in the *Via d'acra* at Rome, but his "apotheca" there appears to have been a house where his writings were kept and where other physicians came to consult them.

He aimed to create a perfect system of physiology, pathology and treatment. He is alleged to have written 500 treatises on medicine and 250 on other subjects, as grammar, law, philosophy, alchemy, etc. All his writings, originally in Greek, have been translated by different persons into Latin; the most important and well-known volumes being those on anatomy, physiology, hygiene, physic and surgery, materia medica and pharmacy, philosophy, and miscellaneous subjects. In some of these foregoing volumes, there may be found descriptions of numerous foods and drugs used to-day, as oats, wheat, barley, rice, beans, flaxseed, hempseed and the poppy seed. Considering that the microscope, chemistry, and other sciences were not yet known, we wonder how Galen was capable of obtaining the information that one can obtain from his writings. He is acclaimed as the first one to describe the nervous system and to tell in detail all about circulation.

He probably died in the year 200 or 201, either in Pergamus or Palestine.

THE NEW EMPLOYEE—HOW TO SELECT HIM AND IMPROVE THE PERSONNEL OF AN ORGANIZATION.*

BY EARL H. CONE.

By reducing the number of replacements effectiveness is increased—
the employee should be carefully selected for the job; rules are suggested—
the form to be filled out by the prospective employee and its scope.

An employee is selected for his fitness to do certain work for an organization. The success or efficiency of an organization depends in a large degree on infrequent changes in the clerical and sales forces.

The following simple rules for selecting employees are submitted for guidance:

The requirement of filling out the application and information blank is the first essential. Why?

Some will decline to fill out the blank; these are not suited for the positions you desire to fill. Others may have to be coached and require several trials before they complete the records. For each question there is a reason, and a study of all of them, separately and conjointly, gives the employer information of great value for estimating the possibilities of the applicant, and lifts the right man into the class in which he belongs.

Every position in a drug store demands more or less detail. The careful, accurate man will fill out the blank, neatly and completely.

The filing of the blank gives the prospective employer a test as to how quickly the applicant thinks and acts.

The data serve the employer in the investigation of references submitted by the applicant; these investigations should be made.

The importance of investigating the obligations and indebtedness of the applicant will be recognized.

* Read before Section on Commercial Interests, A. Ph. A., New York meeting, 1919.