

Etsuo Miyamichi and Mamoru Sugiura : Influences of Sodium
Hydrogen Carbonate on the Saccharifying Power of Diastase.

Diastase is applied as a digestive agent for starch in combination with sodium hydrogen carbonate, magnesium oxide etc. in order to neutralize hydrochloric acid in the stomachic liquid.

As we have observed occasionally that the effect of diastase could be reduced remarkably when combined with sodium hydrogen carbonate as an alkaline agent, we studied the following in order to find out influences of sodium hydrogen carbonate.

We investigated the change of saccharifying power (SP) in the course of time and that when accurately neutralized alkalinity.

(1) Lowering of SP of diastase by sodium hydrogen carbonate. SP of diastase lowered as time elapsed, and after 35 hours it was reduced almost to nothing.

(2) SP of diastase in several market preparations. By testing of digestive power of stomachic agents in market containing sodium hydrogen carbonate and diastase, we have recognized that SP of diastase in these preparations was lowered considerably or reduced to nothing.

(3) Selection of neutralizing agents. As SP of diastase is the strongest (PH 5.6~5.9), and the stomachic liquid is in PH 1.1~2.5, neutralizing agents are required. By the results of our experiments, we have recognized that calcium carbonicum praecipitatum and calcium phosphoricum were the best as diluent.

(4) Cautions for preparation of stomachic agents. It is necessary to mix neutralizing agents harmless for ferments and as the latter are influenced by temperature, stomachic agents should be prepared in low temperature, in absence of water, and as speedily as possible.

(Koichi Kimura), Takeshi Shimano and Toshikazu Harada :

Pharmacognostical Studies on Huang-lien. I. On the Peking market products.

Huang-lien (黃連) is generally supposed to be a Rhizome of *Coptis Teeta* Wallich in China, but the products, which we obtained in the market of Peking, contain four species belonging to the *Coptis* group.

Characteristic points to be noted through the microscope are as follows :

雅黃連 contains stone cells and fibre group in the cortex. (Fig. 2-St., 2-F., 3-St., 3-F.) The membrane of medullary ray is ligneous.

川黃連 contains stone cells in the cortex. (Fig. 4-St.) The medullary ray consists of cellulose membrane.

雲連 contains rarely the sclerenchymatic cells in the cortex. The medullary ray consists of cellulose membrane.

慈黃連 doesn't contain the sclerenchymatic cells in the cortex. The membrane of medullary ray is ligneous.

Takeshi Shimano and Shintaro Nomura : Constituents in
the Bark of *Hamamelis japonica* Sieb. et Zucc.

Oxalic acid mp 189.5° and citric acid mp 153° were isolated from the bark of *Hamalis japonica* Sieb. et Zucc.. Needle crystals, mp 145°, obtained were found not to be identical with Bergenin by the the qualitative

analysis and melting point. Mansaku-tannin previously found in the leaves was also proved in the bark by the reactions with various reagents. The best condition of the decomposition of the tannin was found by heating it at 100° for 15 hours with 10% sulphuric acid. Since trimethyl gallic acid, mp 168° and m-p-dimethyl gallic acid, mp 158° were obtained by saponification of the methyl derivatives, it was proved that Mansaku-tannin is also composed from m-digallic acid. It was assumed that Mansaku-tannin has ester linkage formed from a certain carbohydrate and digallic acid, but has not the same structure as gallo-tannin.

Yüzō Nagase, Takeo Ohno and Ushio Matsumoto: Studies on the Mercuric Compounds of Phthalein Derivatives. III.
On the Position of Bromine Atoms in Mercurochrome.

1). Hydrolysis of dibromofluorescein which was obtained by dibromination of fluorescein with 50% sodium hydroxide resulted 2-(3'-bromo- γ , 4'-dihydroxy-benzoyl)-benzoic acid and 2-bromoresorcinol. The latter was identified as 2-bromoresorcinol by non-depression of the melting point on mixing, color reactions and chemical properties.

2). From this experimental results, it was decided that the bromine atoms on dibromofluorescein occupy the 4, 5-positions, and Mercurochrome derived from the latter by mercuration was therefore as 4, 5-dibromo-2-hydroxymercurifluorescein sodium salts formulated.

3). Condensation of 2- and 4-bromoresorcinol with phthalic anhydride was studied under several conditions in presence of zinc chloride, conc.-phosphoric acid or boron trifluoride as a condensation reagent, but only a fluorescein was obtained at certain conditions instead of 4, 5- and 2, 7-dibromofluorescein.

Tōzaburo Kurihara and Hiroshi Niwa: Studies on the Preparation of Dibenzothiophene and Dibenzothiophene-5-oxide.

Dibenzothiophene can be prepared from diphenyl, sulphur and anhydrous aluminium chloride by the Gilman's method. In this case, yield of dibenzothiophene is delicately influenced by the reaction-temperatures, times and quantities of raw materials. In order to find out the best condition, we tried various experiments and obtained the results shown in the table I. Generally speaking, reactions in higher temperatures gave larger quantities of by-products than the lower. Then, the purification of these by-products was practised and three chemical pure substances were separated. By means of elementary analysis and measurement of molecular weights, it was estimated that one of by-products was diphenylene disulfide and the other two were condensation-products of biphenyl with dibenzothiophene. Of these three substances, only diphenylenedisulfide could be converted into dibenzothiophene using copper powder.

Furthermore, dibenzothiophene-s-monooxide was obtained by the reaction of sulphur dioxide to diphenyl in the presence of aluminium chloride. This is a new preparative method of this compound, and by the reduction dibenzothiophene can be obtained in pretty good yield.

Kichitaro Takatori, Yasuo Yamada and Kei Ose: Sulfonamides Containing Thiocyano Group For Chemotherapeutic Agents

Chemotherapeutic values of the following were examined: *p*-Sulfanilamido-thiocyanobenzene (I), *p*-sulfanilamido-*m*-methylthiocyanobenzene (II), *p*-sulfanilamido-*o*-methylthiocyanobenzene (III), *p*-sulfanilamido-*o*-carbo-methoxythiocyanobenzene (IV), *p*-sulfanilamido-*o*-carbethoxythiocyanobenzene (V), 2-sulfanilamido-6-methylbenzothiazole (VI) and *p*-sulfanilamido-iodobenzene (VII).

1) (I), (II), (III) and (VII) showed a powerful growth-inhibition in vitro against coccal bacteria, the action not being antagonized by *p*-aminobenzoic acid.

2) The toxicities of the acylated compounds of *p*-thiocyananiline were found to be different according to the kind of the acyl group present, the tolerable dose against mice being 2 mg. in acetyl, 20 mg. in benzoyl, and 30-50 mg. in sulfanilyl compounds.

3) The sulfonamides of thiocyano series showed some promising results in therapeutic tests against induced pneumococcal infectioe in mice.

Toshikazu Harada: Pharmacognostic Studies of Japanese "Wild Ginger."

Domestic market product of "Wild Ginger" can variously be attributed to *Asiasarum Sieboldi* F. Maekawa, *Asia. dimidiatum* F. Maekawa, *Heterotropa Blumei* F. Maekawa, *H. nipponica* F. Maekawa, *H. hexaloba var. perfecta* F. Maekawa and *H. subglobosa* F. Maekawa. The macro- and microscopic features of rhizomes and roots of this vegetable drug and its allied plants were studied pharmacognostically, and important differences (e.g. diameter of the root, number of oil-cells and the occurrence of fibre) among them are discussed.

Toshikazu Harada: Pharmaceutical Studies on Ferns. Historical Reseaches on Phloroegrucide in Ferns.

Up to the present, phloroegrucide has chemically been found in the rhizome and stipes of *Dryopteris cras-sirrhizoma* Nakai and *D. lacera* O. Kuntze in Japan.

* It was also recognized by a histochemical method in the rhizome and stipes of *Dryopteris uniformis* Makino, *D. tokyoensis* C. Christensen, *D. cycadina* C. Christensen, *D. Sieboldii* O. Kuntze, *D. Bissetiana* C. Christensen, *D. Yabei* Hayata, *D. sordidipes* Tagawa, *D. erythrosora* O. Kuntze, *D. cystolepidota* C. Christensen, *D. fuscipes* C. Christensen, *D. Labordei* C. Christensen and *D. pseudoerythrosora* Kodama, which grow throughout holartic⁽¹⁾ and neotropical⁽²⁾ floral zone.

The method of detections was as follows:

Powder of rhizome and stipes was digested for two days with carbon disulfide, the digest solution filtered and evaporated. The residue was extracted with 5% barium hydroxide, filtered, acidified with 5% hydrochloric acid, and the precipitates extracted with petroleum ether. The crystals obtained melted at 156°, corresponding to that of flavaspidic acid. A few drops of Ehrlich-Koziczowsky's reagent added to these crystals under the microscope will allow observation of their change to reddish crystals.

(1) J. Pharm. Soc. Jap., 71, 506 (1951). (2) *ibid*, 72, 153 (1952).

Toshikazu Harada : Microscopic Studies on Rhizomes
and Stipes of Ferns containing Phloroglucide.

The macro- and microscopic features of the rhizomes and stipes of several ferns, containing phloroglucide were studied. The important differences, such as the form of glandular hairs, great tannin crystals and the number of sclerenchymatic layers, are discussed.

Sadanori Sawanobori : Sociology of Law.

Sociology of law is a science which is proposed before us as a problem. And at the present time many things are being discussed about "what is sociology of law"⁽¹⁾ mainly by jurists. Most of these discussions are not on sociology of law, but on social jurisprudence or sociological jurisprudence.

The most important tendencies in sociology of law and sociological jurisprudence today may be said to be :

- (1) Sociology of law of Eugen Ehrlich.
- (2) Sociology of law of Max Weber.
- (3) Sociological jurisprudence of Roscoe Pound.

In this study in the first place the thoughts of these famous sociologists or jurists are defined and in the second the theories of the representative sociological jurists today in Japan, Dr. Odaka and Prof. Kawashima are defined also. And lastly the objects of sociology of law as a branch of pure sociology will be studied according to the theory of Prof. Dr. Usui who insists purely on the standpoint of sociology.

Dr. Usui says that the objects of sociology as one of the special social sciences are to be : (1) Social behaviour (of Max Wecer). (2) Social relations (of Simmel, Vierkandt and Wiese etc.). (3) Social groups⁽¹⁾. Accordingly the objects of sociology of law, if it is to be a branch of sociology, are to be concerned in these three elemental categories.

On the next opportunity the study of the concrete problems which are to be treated by sociology of law will be made.

(1) Jishō Usui ; The Object and Method of Sociology, The Review of Social Sciences, Vol. 5., 1950.