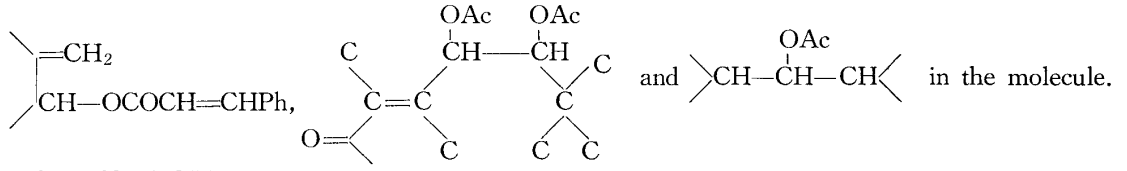
## Research Records

(Nov. 1963～Oct. 1964)

### I. Articles Published in Scientific Journals

**a) In "Yakugaku Zasshi" (Journal ofthe Pharmaceutical Society of Japan)**

(1) **Shojiro Uyeo, Kanichi Ueda, Yoshitomo Yamamoto and Yoshifumi Maki**: TaxineXI. The Structure of Taxinine and Toxinol (2) Based on chemical and physicochemical studies, it has been shown that taxinine, $C_{35}H_{42}O_9$, a constituent of *Taxus cupsidata*, contains moieties



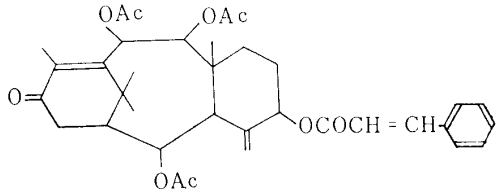
(**84**, 762 (1964)).

**b) In "Chem Pharm Bull"**

**Yoshifumi Maki and Kazunaga Obata**: Studies of Rearrangement Reactions Ⅷ Ring-contraction from Pyridazone Derivatives to Pyrazolone Derivatives (3) The behaniors of various 4, 5-di-and 3, 4, 5-trisubstituted 1-phenyl-6 (1 H)-pyridazinone against caustic alkali and hydrobromic acid were investigated. From these data, the mechanism of the ring-contraction from pyridazinone to pyrazolone was discussed. Action of 1-phenyl-4, 5-dichloro-6 (1 H)-pyridazinone with boiling caustic alkali took place the ring-contraction to give unexpected 1-phenyl-3-pydroxy-5-pyrazole carboxylic acid. The mechanism of this reaction was also assumed. Moreover, the reactivity of chlorines on 1-phenyl-3, 4, 5-trichloro-6(1H)-pyridazinone was elucidated to increase in the order 4-, 5-, 3-position from the result of its methoxylation reaction.
(**12**, 176 (1964)).

**c) In "Tetrahedron letters"**

**Shojiro Uyeo, Kanichi Ueda, Yoshitomo Yamamoto and Yoshifumi Maki**: The Structure of Taxinine, A Nitrogen-free Compound Occurring in *Taxus Cupsidata*. Based on chemical and physicochemical studies, it has been shown that taxinine is presented by the following structure. (No. 30, 2167 (1963)).



**d) In "Kagaku (chemistry)"**

**Yoshifumi Maki**: The 7th Synposium on the Chemistry of Natural Products. (**19**, 152 (1964)).

**Yoshifumi Maki**: The Nonchair Form in Cyclohexane Ring. (**19**, 786 (1964)).

**e) In "Naturwissenschaffen"**

**R. N. Castle and K. Kaji**: Synthesis and cleavage of dipyridazo-〔4, 5-b, 4, 5-e〕-1, 4-dithin-1, 6-dione. (**51**, 38 (1964)).

**f) In "Yakuzaigaku" (Arch. Pract. Pharm.)**

(1) **Mamoru Sugiura, Mitsue Yamamoto, Yō ko Yamada and Hiderō Tanaka**: Pharmaceutical Studies of the Antituberculous Drug (5) The Effect of PAS on the Tryptophan Metabolism (3) On the activity of the Enzyme on the Tryptophan Metabolism.

Experimental studies were made on the change of hepatic enzyme activity in tryptophan metabolism by continuous administration of PAS. The enzyme activity in rat liver after continuous administration of PAS showed marked decrease in Kynureninase, 3-hydroxy anthranilic oxidase, and no change in tryptophan pyrrolase, Kynurenine transaminase, Kynurenine oxygenase, and Picolinic carboxylase. (**24**, 79—83(1964)).

(2) **Taro Ogiso, Mamoru Sugiura**: Pharmaceutical Studies on Enzyme Preparations (2) On Influence of Anti-acid Powder of Enzyme Preparations on Amylase activity.

Amylase activity and acid-consuming capacity of marketing digestive enzyme preparations were tested in the artificial gastric juice of pH4 and pH2, in which starch solution was added. In ⅔ of the examined preparations pH were maintained in the region of 3—5 for about one hour by the modified Fuchs method.

In the artificial gastric juice of pH2, amylase activity of all marketing digestive enzyme preparations decreased more markedly than in the case of pH4.

The activity of the preparations not containing sodium bicarbonate was recognized to decrease remarkably to ¼ or ⅕.

The marketing preparations, containing sodium bicarbonate and insoluble anti-acid showed high anti-acid power and high amylase activity.

The marketing preparations, containing diastase and Koji-diastase, showed the highest amylase activity of the examined preparations. (**24**, 141 (1964)).

(3) **Taro Ogiso, Mamoru Sugiura**: Pharmaceutical Studies on Enzyme Preparations (3) Amylase activity of Digestive Enzyme Preparations by Temperature and Humidity.

The decrease of amylase activity in the enzyme preparations on the market and prepared preliminarily in hospital in summer and wet season was examined.

The enzyme preparations were stored for 10 days at 93% RH, 20°C and at 93% RH, 30°C and then the amylase activities and acid-consuming capacity were examined.

Amylase activity of the marketing preparations, not containing sodium bicarbonate, decreased very little after 10 days at 93%RH and 30°C.

Amylase activity of the preparations containing sodium bicarbonate, decreased a little after 10 days at 93%RH and 20°C, but increased remarkably after 10 days at 93%RH and 30°C.

Amylase activity of all the preparations did not change at 47%RH and 30°C. (**24**, 146 (1964)).

**g) In "Shokuhineiseigaku-zasshi" (Journal of the Food Hygienic Society of Japan)**

**Yōki Ose and Taira Ikeda**: Studies on the *Vibrio parahaemolyticus* Isolated from Night Soil (I)

Isolation of the *Vibrio parahaemolyticus* from Night Soil

*Vibrio parahaemolyticus* was isolated from night soil. The night soil was collected from Japanese lavatory (Kumitori-Benjo) in Gifu-shi by honey car.

Relation between the percentage of the strain isolated and the number of patients suffered from *Vibrio parahaemolyticus* was shown in Fig. 1. Because the night soil was laied by for ca. 20 days in lavatory jar, so the close relation is observed among them.

The experiment showed the hypothesis about the biocycle of *Vibrio parahaemolyticus* in nature as follows:

Patients suffered from *Vibrio parahaemolyticus*→faeces contaminated by the microorganismus→collection the contaminated night soil by car → falling out the night soil to sea water by ship → contamination of the sea water and the subsoil → contamination of the fishes in sea water → man who eat the fishes→ Patients→ (upper cycle). (**5**(3), 206 (1964)).

**h) In "Eiseikagaku" (The Journal of Hygienic Chemistry)**

(1) **Yōki Ose, Taira Ikeda, Shōzō Morishita and Saburō Yoshida**: Studies on the Pollution of the

Air in Automobiles.

The air pollution in automobiles was tested. When windows were shut, $CO_2$-content increase, especially in clos-water cooling system automobiles air pollution was remarkably, in short time. Many school-bus shut the windows from the point of accident prevention. More than 30% car shut the windows in winter, so air hygien in car must take care by driver. (**9**(2), 101 (1963)).

(2) **Yōki Ose, Taira Ikeda, Shōzō Morishita and Kōzō Ikuta**: Fundamental Studies on Hygiene of School Enviroment XIX The water in water-bottle I.

Water bottle has been used on school excursion, and recently used when water-supply insufficiency or water contaminated. But many clear water was contaminated by input them in contaminated-bottle.

Water hygiene must take care from this point view. (**9**(2), 106 (1963)).

**i) In"Yōsui to Haisui" (Journal of Watr and Waste)**

(1) **Yōke Ose, Taira Ikeda, Shozō Morishita, Saburo Yoshida, Yoshimi Furuyama and Tamotsu Okada**: About the Function of Refluence System Filtration Pond.

Most important trouble of water supply is in control of filtration membrane of pond. A new system filtration pond named "refleuence system" was tested by model plant in laboratory and town.

These plant succeeded to remove the muddiness and 30% bacteria were removed. (**6**(5), 57 (1964)).

(2) **Yōki Ose and Sumi Nishiwaki**: Sanitation of Swimming Pool (IV). Circulation System Filtration of Swimming Pools and Testing Method of them.

Number of circulation times of swimming pool water used circulation system will be calculated by the formula:

$$N=\frac{\sum^{n}B}{3V}\times E$$

N: number of swimmer, B: bathing boad of turbidity, V: volume of pool($m^3$), F: safety factor (1.5~2)

Some problem of flowseat about tank system and prycoat system was pointed out, and the indicator of agedness of water was discussed. $NH_3$-N, $NO_2$-N, $NO_3$-N and $Cl'$ were not suitable. (**6**(7), 25 (1964)).

**j) In "Yakkyoku" (the Journal of Practical Pharmacy)**

**Yoshio Kato**: Antibacterial Activity and the Application of Royal Jally. (**15**(5), 641~646 (1964)).

**k) In "Kagaku to Yakugaku no Kyōshitsu" (the Journal)**

**Kazuo Ito**: Elementary Russian for Chemical and Pharmaceutical Students〔I〕. 〔**1**, 58 (1963)〕.

**Kazuo Ito**: Elementary Russian for Chemical and Pharmaceutical Students〔II〕. 〔**2**, 65 (1964)〕.

**Kazuo Ito**: Elementary Russian for Chemical and Pharmaceutical Students〔III〕. 〔**3**, 63 (1964)〕.

**Kazuo Ito**: Elementary Russian for Chemical and Pharmaceutical Students〔IV〕. 〔**4**, 58 (1964)〕.

## II. Articles to be Published in Scientific Journals

**(a) In "Yakugaku Zasshi"**

(1) **Kazumi Toyoshi, Katsuhiko Kato, Katsuyo Yamada, Kazue Komoda and Uzuhiko Kurimoto**: Studies on Organic Mercurials IV

Antibacterial and Antifungal Properties of Organic Mercurials containing Theophylline derivatives.

(2) **Yoshifumi Maki, Makoto Sato and Kazuyuki Yamane**: Studies of Rearrangement Reactions X. Smiles Rearrangement on pyridine Derivatives (7)

(3) **Yoshifumi Maki, Kazuyuki Yamane and Makoto Sato**: Studies of Rearrangement Reactions XI Smiles Rearrangement on pyridine Derivatives (8)

(4) **K. Kaji, H. Nagashima, K. Mashimo, Y. Naka**: Synthesis of Mixed Acyloins.

(5) **T, Ohno, I, Mori**: Synthesis of bromofluoresceins.

(6) **T. Ohno, I. Mori**: Synthesis of bromo-chlorofluorescein.

(7) **T. Ohno, I. Mori**: Studies on mercuric compounds of phthaleins mercuration of halogeno-fluoresceins.

**b) In "Chem. Pharm. Bull"**

**Yoshifumi Maki, Makoto Sato and Kazunaga Obata**: Synthesis of steroidal $\alpha$-amino acid.

**c) In "Yakuzaigaku"**

(1) **Taro Ogiso, Mamoru Sugiura**: Pharmaceutical Studies on Enzyme Preparationes (4) Invalidation of Amylase Activity by Differentiated Degree of Preservation Condition of Enzyme Preparations.

(2) **Mamoru Sugiura, Seiko Kato, Hidero Tanaka, Kazuko Atrashi and Akiko Katagiri**: Pharmeceutical Studies on Enzyme Preparations (5) On the Alkaline Protease.

(3) **Mamoru Sugiura, Seiko Kato, Hidero, Tanaka**: Pharmaceutical Studies on Enzyme Preparations (6) On Influence of Surface active agents on Protease activity.

(4) **Mamoru Sugima, Hidero Tanaka, Yoshiko Kotake**: On Determination of Pyridoxal Phosphate by Tryptophanase.

(5) **Mamorn Sugiura, Keizo Nagase, Kazuo Hirose**: Pharmaceutical Studies on Enzyme preparations (7) On the Lipase produced by Candida.

(6) **Mamoru Sugiura, Tarō Ogiso, Katuhisa Hirose and Yoshio Katō**: Degradation Mechanism of FAD (1) On the Alhaline Degradation.

(7) **Mamoru Sugiura, Keizō Nagase, Shigeji Morisaki, Yoshio Katō**: Pharmaceutical Studies on Antituberocurocis (7) On the Effect of PAS on the tryptophan Metabolism (4) On the Excretion of Xanthurenic acid in the urine of tuberculous Patient by continuous Administation of PAS.

### III. Oral Reports in Scientific Society

**(a) In the 18th Annual Meeting of "The Pharmaceetical Society of Japan"** (Nov. 1963, Tokyo)

(1) **Kichitaro Takatori, Jiro Kitamura, and Kazuo Imai**: Studies on the Synthese of Mevalonic Acid and Mevalonyl-$\beta$-alanine and their Biological Activities. I.

(2) **Yoshifumi Maki and Makoto Sato**: Studies of Rearrangemement Reaction X Smiles Rearrangement on Pyridine Derivatives (7)

**(b) In the 19th Annual Meeting of the Pharmaceutical Society of Japan (April 1964, Tokyo)**

(1) **Kichitaro Takatori, Jiro Kitamura, and Kazuo Imai**: Studies on the Synthese of Mevaloinc Acid and Mevalonyl-$\beta$-alanine and their Biological Activities. II.

(2) **Yoshifumi Maki, Makoto Sato, Kazuyuki Yamane, Takashi Abe and Reiko Namerikawa**: Studies of Rearrangement Reactions XI Smiles Rearrangement on pyridine Derivatives (8)

**(c) In the Ordinary Meeting of the Tokai Branch of the pharmaceutical Society of Japan**

(1) **Yoshifumi Maki, Kazuyuki Yamane, Makoto Sato**: Studies of Rearrangement Reaction XII Smiles Rearrangement on pyridine Derivatives (9)

(2) **Mamoru Sugiura, Seikō Katō, Hiderō Tanaka**: Pharmaceutical Studies on Enzyme Preparations (6) On Influence of Surface active agents on Protease activity.

(3) **Mamoru Sugiura, Hidero Tanaka, Yoshiko Kotake**: On Determination of Pyridoxal Phosphate by Tryptophanase.

(4) **Mamoru Sugiura, Keizo Nagase, Kazuo Hirose**: Pharmaceutical Studies on Enzyme Preparations.

(5) **Mamoru Sugiura, Hidero Tanaka, Junko Tanahashi and Yoshio Katō**: Pharmaceutical Studies on Enzyme Preparation (8) On Enzyme activity in Digetive Enzyme Preparations.

(6) **Kazuo Ito, Akiyoshi Yoshida**: Studies on the Alkaloids of Magnoliaceous Plants. Alkaloids of the

Heartwoods of *Magnolia obovata* THUNB. (1).

(d) **In the 37th Annual Meeting of the Biochemical Society of Japan** (Oct 1964, Nagoya) (Sympodium on the Biochemistry of Indole derivatives)

**Kichitaro Takatori and Hiroo Miyata**: Studies on the Synthese of Melatonin and the Related Compounds and their Biological Activities.

## IV. 著　　書

**小瀬洋喜**（分担執筆）：公衆衛生学（広川書店）（昭39. 3）

**小瀬洋喜**：水の衛生（コロナ社）（昭39. 5）

**竹中英雄**（分担執筆）：不破竜登代編，新薬学（広川書店）（昭和39年4月）

**Kazuo Ito**: Annal Index of the Reports on Plant Chemistry in 1960 (Chief Editor: Tatsuo Kariyone) (Hirokawa Publishing Co. Inc.)（分担執筆）(1964).

**伊藤一男**：化学ロシア語入門（広川書店）(1964).