Award of Medals

The Seventieth Annual Award of Medals was held on Wednesday, June 11, 1980, at 10:00 a.m., in the presence of His Majesty the Emperor.

The function was opened with an address by the President, in which he made a brief statement of each award. Then the Medals and Prizes were presented to the respective recipients.

After this, congratulatory addresses were given by the Prime Minister and the Minister of Education.

The function was closed at 11:25 a.m.

The Recipients of the Prizes and the Subjects of their Studies

Yoshio Okada

Cell Fusion and Cell Engineering

Okada discovered the cell fusion phenomenon by HVJ (Hemagglutinating Virus of Japan, synonym: Sendai virus). It was first observed *in vivo* and then set up successfully for *in vitro* cell fusion reaction in 1957 and 1958. The basic characteristics of cell fusion reaction *in vitro* were published in 1962. In these papers, the most effective conditions for cell fusion were demonstrated practically, including factors such as temperature shift from 0°C to 37°C, pH range, reaction medium, reaction conditions and the use of UV-inactivated virus, etc. These conditions have become established as the standard method for cell fusion. In 1963, it was found that cultured cells of a wide range including human and animal cells can fuse by HVJ. Heterokaryon formation between human and mouse cells was demonstrated in 1965. These results were valuable for somatic cell genetics using heterokaryons or hybrids, which started internationally in 1965.

In classic genetics, an individual animal body is understood as only the phenotype of the genomes of a fertilized egg, then, a somatic cell is only one member of the whole body. However, since Carrel (1912) demonstrated the growth of cells from a tissue of chick embryo *in vitro*, it became possible to handle a somatic cell as an autonomous individual in a Petri dish. A complete set of genomes derived

from parents is included in each somatic cell. Thus, one can use a somatic cell *in vitro* for genetic analysis instead of a whole body. Unfortunately, however, technical freedom for genetic analysis of somatic cells in culture has not been so great because they do not show such phenomena as the male and female conjugation of germ cells. The development of artificial cell fusion solved the largest problem and led the way to the establishment of somatic cell genetics.

Recently, the development of a new cell engineering technique has appeared in Okada's laboratory which based on the cell fusion phenomenon by HVJ. Three such methods have been established. Method I is a technique for introduction of macromolecules into living cells, utilizing diffusion of macromolecules through cell membranes at the early stage of the cell fusion reaction. Okada's group utilizing this method demonstrated that the defective function of Xeroderma Pigmentosum cells was restored to normal by the introduction of endonuclease V of T4 bacteriophage. This effort was the first successful trial for the rescue of cells from a hereditary disease. Method II employs the fusion of cells with erythrocyte-ghosts, in which macromolecules have been trapped. This method is named as "Wooden Horse Method" on "New Scientists". Method III utilizes the fusion of cell membranes with liposomes containing viral spikes. By this method, a selective introduction of macromolecules into a given cell population in a mixed culture is accomplished. Transplantation of cell surface receptors to viable cell membranes is also available by a modification of this method.

Seiji IMAHORI

The Social Structure of Feudal China

This work is a report of the field-work carried out by the author in the provinces of Chahar and Suiyuan of Inner Mongolia from May to December 1944. He collected all sorts of available materials concerning the socio-economic structure and functions of the village community, the peasant organization, the guilds and other local groups of different levels, by means of personal geographical observations, interviews with local elders, rubbings of monumental inscriptions, purchases and copies of unpublished documents, etc.; and the results of the field-work have been supplemented with the study of the related historical texts. The aim of the author is to offer comprehensive data on the investigation of the nature of traditional Chinese society, which

he called "feudal", in the frontier of Inner Mongolia during the Ch'ing period.

In the first part, the cities of *Pao-t'ou* and *Chang-chia-kou* are treated, followed by descriptions of the river ports of *He-k'ou chen* and *Nan-hai-tzŭ* in the second part, *Fêng-chên* and other *hsien-ch'êng* (walled chief town of county district) in the third part, *Pi-k'e-ch'i* and other *chên* (huge village or market town closely connected commercially with the *hsien-ch'êng*) in the fourth part, and *Pai-t'a* and other villages in the fifth part. Based upon the materials presented in the foregoing parts, an analytical synthesis is made in the sixth part about the socio-economic features of these social units, in reverse order beginning with the villages.

The historical development of the villages of the region was as follows. In the first stage, the Chinese with sufficient capital went to the frontier zone, loaned the money to the Mongolian nobles, and gradually took control over the land as owners; and in the second stage, many Chinese immigrated to this area as their tenants who later acquired the status of *ti-hu* (landed person) and played a major role in the rural economy. The *kung-she* (community or communal organization), which was practically controlled by rich land holders, functioned as an economic and religious body and eventually came to carry out some of the functions that pertained to the governmental authorities such as the collection of taxes.

In the larger unit of the *chên,* there was a socio-economic organization called *ta-hang,* which controlled the main office of this local unit, which its entire population participated in. Half of the population of the average *chên* engaged in agriculture, and the author noticed in them the development of trades, small industries and rudimentary small guilds. The *hsien-ch'êng,* being the seat of a governmental office, was a full-fledged guild city, which produced sufficient goods within its walls to supply the demand of the entire county, and it had a well developed *hê-huo* share holding system. The large cities were guild cities basically similar to the *hsien-ch'êng,* and were also the centers of international trade.

This book offers invaluably important materials for the socio-economic study of traditional Chinese society before it was completely revolutionalized by the new political regime.

Akira HIRAKAWA, Shunei HIRAI, Noriaki HAKAMAYA,
Giei YOSHIZU, and So TAKAHASHI

Index to the "Abhidharmakośabhāṣya"

The *Abhidharmakośabhāṣya,* hereafter referred to as the *Kośa,* is a basic text in the study of Buddhism. In Japan a Chinese translation of this text has been the object of continuous scholarly interest since the Nara period. The publication in 1967 of a Sanskrit manuscript of the *Kośa* first provided the conditions necessary for a comparative examination of translations of this text, one in Tibetan and two in Chinese, with an original version. A thorough critical study of this sort would not only help to clarify the meaning of the *Kośa,* but would be a significant contribution to the understanding of Buddhism in general. The *Kośa,* however, is a voluminous work that, if it is to be put to practical use, requires an index. The present work has filled this need.

Each of the three parts of the *Index* contains all the principal words in these versions. That of Part 1 gives the Tibetan and Chinese equivalents for each word in the Sanskrit original; that of Part 2, the Sanskrit equivalents for words in the Chinese texts; and that of Part 3, the Sanskrit equivalents for each word in the Tibetan text. Part 1 also contains a relatively lengthy introduction to the *Kośa,* an index of Sanskrit proper nouns and a corrigenda of the 1967 edition of the Sanskrit text; Part 2, indices of Chinese characters arranged by stroke-count and Pin-yin system; and Part 3, a concordance of the seven major extant editions of *Kośa* texts in Sanskrit, Tibetan and Chinese. Care was taken in compiling the concordance to allow for easy cross-referencing of passages in any of the seven editions of the text. Part 3 also contains an addenda and a corrigenda to Parts 1 and 2 of the present work.

As a result of the *Index,* subsequent research requiring collation of the Sanskrit, Tibetan and Chinese texts of the *Kośa* has been made easy. Undoubtedly, the contribution of this work to the study of Buddhism will be very considerable. The *Index* additionally represents an advance in the study of Buddhist Sanskrit as the meaning of many heretofore enigmatic words has been clarified by contrasting Sanskrit terms with their Tibetan and Chinese equivalents. For its achievement in this last mentioned field of research, this work is also highly praised.

Yoshio ATOJI

Georg Simmel's Sociological Method

This work consists of the general research on Georg Simmel's sociology written by the author who has been studying G. Simmel, a German sociologist, for a long time. Simmel's advocation of formal sociology opened an epoch-making period in the history of sociology, and the author has done outstanding research on the subject. The characteristic of his research lies not only in his methodological study of Simmel's sociological method, but also in his thorough re-examination of it in relation to the essential theory of sociology by which he intends to make Simmel's meaning clear again.

In the first part, the author points out that, considering the philosophical viewpoint on which Simmel's sociology was based, even though he was influenced by Kant and accepted the epistemology as well as the concept of interrelation, after trying to consider the philosophy of life, Simmel established his own methodical relativism which agreed with the dialectic of life. And also, the author points out that Simmel's methodological standpoint was exceedingly thoroughgoing, because his concept of interrelation, which made up the main theme of his sociology, was not only considered the functional existence over and above the opposition between a person and a society, but it was also considered the concept of involving a connection as well as a conflict.

In the second part, the author considers Simmel's whole sociology which had the methodological characteristics as mentioned above, and, in them, he points out that what exerted great influence upon the subsequent sociology was the theory of small groups, of dominance and of conflict. And then, he clearly emphasizes its significance for today and, at the same time, tries to illuminate his methodical relativism as considered above, and to re-affirm it.

Though Simmel's sociology became a subject of discussion after the First World War particularly about his method, and it became a new matter of concern after the Second World War because his sociology was considered unsystematic and so on, his sociological method has never been investigated in relation to the material sociological theory. Under these academic circumstances, the author re-examines the whole of Simmel's sociology which is noted for its difficulty. It is worthy of note that the author throws Simmel's methodological uniqueness into relief as against the theory of Tönnies, Max Weber, Durkheim and so forth. And, internationally, the con-

tents of this work should be appreciated as a study of Simmel's sociology which is unparalleled in importance.

Sumio UMEZAWA

Studies on the Synthesis of Aminoglycoside Antibiotics

Aminoglycoside antibiotics, produced mainly by streptomycetes, comprise a large class of antibiotics including streptomycin, kanamycin, neomycin, and other useful antibiotics. They now have an important established position in medicine. However, synthetic chemistry in this field, long obstructed by the stereochemical complexity of molecular structures of the antibiotics, has recently developed rapidly. Umezawa has been at the forefront of these synthetic advances.

Total syntheses of a number of natural aminoglycoside antibiotics including the abovementioned antibiotics have been achieved by Umezawa. Particularly, the total synthesis of streptomycin (the first aminoglycoside antibiotic discovered by Waksman *et al.* in 1944) was achieved in 1974 as a highlight of natural products synthesis.

On the other hand, Umezawa has made efforts to synthesize compounds effective against resistant bacteria. Resistant bacteria are a serious subject in present chemotherapy. By extension of the abovementioned synthetic schemes and by rational design suggested on timely revealed biochemical mechanisms of resistance of resistant organisms, Umezawa has successfully synthesized a number of aminoglycosides remarkably effective against resistant bacteria. He has further developed synthetic processes for industrial production by chemical transformation of the natural antibiotics into their variants. One of the semisynthetic aminoglycosides assigned the generic name 'Dibekacin' is now used world-wide as a drug effective against resistant infections. In addition, contributions of his work apply to the progress of organic chemistry, for example his study on the optical rotatory shift of copper complex of aminocylitol and aminoglycoside, and on the use of zinc complex as an intermediate for regiospecific acylation of aminoglycoside.

The abovementioned achievements of Umezawa have greatly contributed not only to the chemistry of antibiotics and carbohydrate chemistry but also to human welfare.

Koichi SHIMODA

Studies on Laser Physics and Laser Spectroscopy

Just after Maser was born from researches in Prof. C. H. Townes' laboratory, Shimoda carried out detailed studies on basic problems concerning the Maser, some with collaboration with Townes' group and others independently. Problems cover functional characteristics, theory of the Maser oscillation, and the effect of hyperfine structure on the oscillation. In particular he derived theoretical formulae for threshold conditions of Maser and Laser oscillation valid under various experimental conditions. His study on Lamb dips due to saturated emission or absorption contributed much to clarify this experimentally important nonlinear effect. Furthermore the work on "Fluctuation in Maser Amplifier", done jointly with Profs. Takahasi and Townes, was a remarkable achievement, which may be regarded as the pioneering work in the field of quantum noise including recent theories based on quantum statistical mechanics.

Another important achievement of Shimoda is the absolute standardization of the 3.39 μm He-Ne Laser frequency with reference to a vibration-rotation transition of CH_4. Based on his idea, constructions of Lasers for the frequency standard have been carried out at national metrology institutes in Japan and abroad. The most precise measurement of the speed of light in vacuum at present is based on simultaneous measurements of frequency and wavelength of the CH_4-stabilized He-Ne Laser. His contribution to metrology is recognized worldwide.

Highly monochromatic and intense Laser light delivered a remarkable impact to spectroscopy. In order to employ Lasers for spectroscopy, however, it is required to vary the frequency of Laser emission or to modulate absorption frequencies of molecules. In early 1960's Shimoda succeeded in constructing a tunable laser by applying a magnetic field, although the tuning range was limited. This made it possible to measure many lines of organic molecules with CH bonds. On the other hand, he developed "Laser Stark spectroscopy", by which frequencies of molecular absorption lines were varied and "resonance absorption" was measured. With this technique he measured thousands of absorption lines of NH_3, NH_2D, etc., and determined various molecular constants of vibrational-rotational motion. Finally, he made extensive use of higher order phenomena such as double resonance, triple resonance, multiphoton processes in molecular spectroscopy, and succeeded, for instance, in determining rotational

structures in excited vibrational states of molecules, which is difficult in traditional spectroscopy.

In summary, Shimoda is one of the key scientists who have explored Laser physics extensively and deeply with rich theoretical insight, and he himself has made major contributions to recent developments in metrology and molecular spectroscopy with the use of coherent Laser light.

Ko TAMADA

Theoretical Studies on Transonic Flow Past an Aerofoil and Related Problems

Ko Tamada started his studies on transonic flow in the early 1940's, when strange difficulties were first encountered in the flight of aeroplanes at transonic speeds, from slightly below to slightly above the speed of sound in air. Even when the flight speed is below the speed of sound, the motion of the air relative to the aerofoil is accelerated beyond the local speed of sound, leading in most cases to the formation of shock waves when decelerated, which are liable to cause the loss of lift and endanger the safety of flight. Solution of the basic equations being extremely difficult, it remained unknown whether a continuous transonic flow could exist without involving shock waves.

By assuming the speed of flow everywhere sufficiently close to the speed of sound and applying a special transformation of variables, Tamada was successful in finding an exact solution to the equations that represents the flow through a Laval nozzle, a convergent-divergent nozzle used for accelerating air beyond the speed of sound. He then extended the solution to the flow past an aerofoil, which provided the first example without any mathematical question of the transonic flow past a solid body. The result was remarkable for indicating that a continuous flow without involving shock waves is possible even when the motion locally exceeds the speed of sound. This prediction has not only been confirmed by later wind-tunnel experiments, but also evaluated as prophesying the advent of the current "supercritical aerofoils", designed such that the shock wave be delayed in appearance and its adverse effect be minimized.

Subsequently, Tamada extended his theory to magneto-fluid-dynamics, that is, the flow of a conducting fluid, such as the gas ionized at high temperatures, in the presence of a magnetic field.

Recently, however, his concern shifted to the flow of a rarefied gas, in close association with the flight in space. The mean free path of the molecule is no longer small compared to the dimension of the solid body, but the effect of the coarseness is confined to a thin layer adjacent to the solid wall. Some of his work shed light on the structure of the layer, bridging the gap of continuum and free molecule flows.

Tamada's work outlined above has greatly contributed to a correct understanding of some novel phenomena observed during the progress of the flight in atmosphere and in space.

Hisateru MITSUDA

Studies on the Biosynthesis of Vitamin B_2 and Its Application

For more than forty years the award recipient, Hisateru Mitsuda, has studied vitamin B_1, B_2 and C, and folic acid in connection with the physiological implications of their derivative compounds in plants. His accomplishments on the biosynthesis of vitamin B_2 encompass some of most significant work done to date in the field of vitaminology. And some of his findings have significantly availed in advanced human welfare.

The biosynthetic pathway of vitamin B_2 which the award recipient elaborated heretofore can be represented as follows:

Xanthine→Xanthine monophosphate→Guanosine monophosphate → Guanosine triphosphate ---→ 4-Ribitylamino-5-amino-2,6-dihydroxypyrimidine→6,7-Dimethyl-8-ribityllumazine→Vitamin B_2 →Flavin mononucleotide→Flavin adenine dinucleotide.

In his earlier works, the award recipient isolated from green plant leaves, a greenish fluorescent compound and identified it to be 6,7-dimethyl-8-ribityllumazine (compound G), and in addition a violet fluorescent compound that was identified as 6-methyl-7-hydroxy-8-ribityllumazine (compound V). He subsequently provided an unequivocal array of vitamin B_2 synthesis in green leaves. Included in these are that the stoichiometry of vitamin B_2 synthesis from compound G is 1 mol product from 2 mol precursor, *i.e.* the riboflavin ring is completed *via* the transfer of four-carbon unit not from exogenous sources but from a second molecule of compound G; that aerobic conditions favor production of compound V by a dehydrogenetic demethylation of compound G with the action of quinones

which are ubiquitous in green leaves; and that the anaerobic conditions lead to exclusive production of vitamin B_2 in lieu of compound V. In his later works with non-growing cells of *Eremothecium ashbyii,* the recipient demonstrated that 4-ribitylamino-5-amino-2,6-dihydroxypyrimidine is involved in the vitamin B_2 biosynthesis as the immediate precursor of compound G and at the same time is also the second product in the bimolecular condensation reaction.

Vitamin B_2 or riboflavin, is a precursor in the synthesis of flavin mononucleotide (FMN) and flavin adenine dinucleotide (FAD). These flavin nucleotides are readily hydrolyzed to vitamin B_2 by the action of acid phosphatase and nucleotide pyrophosphatase respectively, both surpassing *in vitro* activity the two enzymes involved in their synthesis. The award recipient found that the phosphatase and pyrophosphatase are remarkably inhibited by a number of nucleotides including adenosine triphosphate (ATP), adenosine diphosphate, and adenosine monophosphate as well as by inorganic phosphate. This finding had added to the understanding of an important role of ATP in controlling the *in vivo* level of vitamin B_2 nucleotides besides its essential functions in their synthesis.

Not only was the award recipient engaged in the basic studies but he applied his findings accumulated during the course of these studies to innovate on the food science and technology. One of the typical examples of his accomplishments is the carbon dioxide exchange method (CEM) he invented for the skin-packing and preservation of cereal grains. The CEM can conserve the germination activity of seed-rice for much prolonged period, beyond three years, compared with the conventional preservation methods. The CEM prevents brown rice and polished rice from deteriorating in quality during storage. He also found that added vitamin C is effective in preventing the growth of haze in bottled beer, the technique having found applications in the Japanese and Korean beer industries. The award recipient is responsible for the introduction of vitamin B_1 and B_2-enriched rice, which has contributed to the promotion of nutrition for the entire nation over the last 27 years.

Tetsuji KAMETANI

Total Synthesis of Natural Products via Mass Spectral Synthesis

Organic compounds, when submitted to mass spectrometry, generally give their characteristic mass spectral fragments. This fact

led the author to conceive the idea, that the original compounds should be synthesized from synthons having the same or equivalent structure to the mass spectral fragments. This idea was validated when he succeeded in synthesizing xylopinine, a well-known protoberberine group of alkaloids. Thus he proposed to call this methodology "Retro Mass Spectrometry", and this synthetic method "Retro Mass Spectral Synthesis", now a widely and well-accepted proposal.

The generality of this method was shown by his further success in synthesizing not only other protoberberine type bases, but also those bases, belonging to phthalide- and spirobenzyl-isoquinoline. This method also opened a new and facile route to synthesize indole bases, such as ruthecarpine and yohimbine, in good yield, which appears promissing for the large scale production of these useful medicinal bases.

He also achieved brilliant success in the synthesis of numbers of other natural products of terpene, steroid and β-lactam antibiotic groups, some of which appear to be especially fascinating from the industrial viewpoint.

Since he initiated this study in 1972, about one hundred compounds of seventeen species have been synthesized. This method has thus proved to be a key step for the final stage of synthetical works, and for this purpose it was mandatory to select suitable synthons or their equivalents as starting materials. If so, the reaction proceeds in a suitable solvent or neat, without the aid of any reagent and under mild conditions, giving the products, usually in good yield, with high degree of regio- and stereo-selectivity equal to the natural products.

PROCEEDINGS AT THE 740TH GENERAL MEETING

The 740th General Meeting of the Academy was held on Thursday, June 12, 1980 at 1:05 p.m., Dr. Kiyoo WADATI, President, taking the chair. Eighty-six members were present, and the following communications were made:

A scanning electron microscopic study on vascular changes in the endometrium at the pre-implantation stage in the rabbit . . . . . Hiroyoshi NINOMIYA and Tsunenori NAKAMURA

Studies on the karyotype differentiation of the Norway rat. II. A mosaic rat carrying the translocation and inversion of pair no. 1 chromosomes with a note on their transmission to offspring . . . . . Tosihide H. YOSIDA

Further studies of the chromosomes of the Labridae (Pisces). A preliminary note . . . . . Yoshio OJIMA and Eiji KASHIWAGI

Chromosome aberrations and sister chromatid exchanges induced by tryptophan pyrolysates, Trp-P-1 and Trp-P-2, in cultured human and Chinese hamster cells . . . . . Motomichi SASAKI, Keiko SUGIMURA, Mitsuaki A. YOSHIDA, and Takashi KAWACHI

A note on banded karyotypes of the BN strain rat, *Rattus norvegicus*, with an unusually long Y chromosome . . . . Yoshiaki KODAMA

Cyto-histological and biochemical studies on pollen abortion in *Datura alba* L. plants treated with gametocidal compounds . . . . . S. V. S. CHAUHAN and Toshiro KINOSHITA

Above six, communicated by Sajiro MAKINO, M. J. A.

Analytic expressions of unstable manifolds . . . Shigehiro USHIKI

On the strong convergence of the Cèsaro means of contractions in Banach spaces . . . . . Kazuo KOBAYASI and Isao MIYADERA

On τ functions of a class of Painlevé type equations. I . . Yasuko MÔRI

A note on quasilinear evolution equations. . . . . Kiyoko FURUYA

A uniqueness theorem in an identification problem for coefficients of parabolic equations . . . . Takashi SUZUKI and Reiji MURAYAMA

Polynomial Hamiltonians associated with Painlevé equations. I . . . . . Kazuo OKAMOTO

Deformation of linear ordinary differential equations. III . . . . . Michio JIMBO and Tetsuji MIWA

Above seven, communicated by Kôsaku YOSIDA, M. J. A.

Immunological study on the *B* gene-associated α-galactosyltransferase . . . . Hisao TAKIZAWA, Koichiro KISHI, and Shoei ISEKI, M. J. A.

HLA grouping of Cadavers' sera by the microcytotoxicity inhibition test applied to a paternity case . . Kouichi YOSHIMURA, Kazuhiro TAKAHAMA, Masaaki HARA, Jun-ichi, YANAGIDA, and Hayato HASEKURA

Communicated by Shoei ISEKI, M. J. A.

Poincaré Waves and Kelvin Waves in a rotating straight canal of parabolic section . . . . . Koji HIDAKA, M. J. A.

Chemical synthesis of 2-amino-3-methylimidazo [4, 5-f] quinoline (IQ), a potent mutagen isolated from broiled fish . . . . . Hiroshi KASAI, Susumu NISHIMURA, Keiji WAKABAYASHI, Minako NAGAO, and Takashi SUGIMURA

Communicated by Kyosuke TSUDA, M. J. A.

On surfaces of class VII_0 with curves . . . . . Ichiro ENOKI
The basis problem for modular forms on $\Gamma_0(N)$ . . . . . Hiroaki HIJIKATA, Arnold PIZER, and Tom SHEMANSKE
On the linear sieve. I . . . . . Yoichi MOTOHASHI
Nonexistence of minimizing harmonic maps from 2-spheres . . . . . Akito FUTAKI
Suites limite-périodiques et théorie des nombres. III . . . . . J. -L. MAUCLAIRE
A note on the Tate conjecture for $K3$ surfaces . . . Takayuki ODA
A note on the large sieve. IV . . . . . Yoichi MOTOHASHI
Above seven, communicated by Kunihiko KODAIRA, M. J. A.
Studies on bilirubin metabolism. VIII. Further studies on the structure of bilirubin conjugate "C" . . . . . Tokio YAMAGUCHI, Michiharu IKAWA, and Hiroshi NAKAJIMA
Communicated by Kenji YAMAOKA, M. J. A.
Host-specific toxins from *Alternaria alternata*. Problems and prospects . . . . . Syoyo NISHIMURA
Determinant for pathogenicity without apparent phytotoxicity in plant diseases . . . . . Hachiro OKU
Above two, communicated by Naohide HIRATSUKA, M. J. A.
Lower incidence of nodular hyperplasia of the adrenal cortex after ovariectomy in neonatally estrogenized mice than in the controls . . . . . Seiichiro KAWASHIMA, Katsumi WAKABAYASHI, and Yasuaki NISHIZUKA
Amphiprion clarkii juvenile: Innate protection against and chemical attraction by symbiotic sea anemones . . . . . Kazuko MIYAGAWA and Toshitaka HIDAKA
Above two, communicated by Kiyoshi TAKEWAKI, M. J. A.
The presence of substance P carboxy-terminal heptapeptide in pig brain stem . . . . Takeshi KATO, Masamichi OKADA, Tamotsu NAKANO, Toshiharu NAGATSU, Junji EMURA, Shumpei SAKAKIBARA, Yukio IIZUKA, Shoichiro TSUSHIMA, Nobuhiko NAKAZAWA, and Hiroshi OGAWA
Communicated by Setsuro EBASHI, M. J. A.
Decreased activity of prostaglandin endoperoxide synthetase in prostaglandin I_2 (prostacyclin) biosynthesis from arachidonic acid in isolated rat aortae . . . . . Yoshiteru HARADA, Kunio TANAKA, and Makoto KATORI
Communicated by Masahiro OKADA, M. J. A.

After a recess during which the members present met in their respective Sections, the General Meeting was resumed for business transactions.

First, President announced that Dr. Masamichi ROYAMA, M. J. A., had died on May 15, 1980; the members rose from their seats in silence, expressing profound sense of grief.

Next, Dr. Yuzo YAMADA, M. J. A., paid a high tribute to the late Dr. Ichiro NAKAYAMA's meritorious services to the academic circles.

Then, the Chairmen of both Sections made reports on the matters dealt with at the Sectional Meetings.

After that, it was reported that Dr. Chuji TSUBOI, Chairman of Section II, was re-elected at the Sectional Meeting.

Finally, it was reported on the result of election of half of the members of the Administrative Committee, which had taken place at the Sectional Meetings. The Committee members elected are: Juichi KATSURA, Sanji SUENOBU, Kazuo OKOCHI, Kenjiro KIMURA, Masao YAMAGATA, Kin-ichiro SAKAGUCHI, and Toshio KUROKAWA.

The Meeting adjourned at 4: 57 p.m.

日本学士院紀要

昭和五十五年六月　第五十六巻A　第六号

昭和五十五年七月五日　印刷
昭和五十五年七月八日　発行

編集兼発行者　日本学士院
東京都台東区上野公園七の三十二

印刷所　株式会社東京プレス
東京都板橋区桜川二丁目二七の十二

印刷者　依田高夫
東京都板橋区桜川二丁目二七の十二

Printed by
TOKYO PRESS COMPANY LIMITED
No. 27-12, Sakuragawa 2-chome, Itabashi-ku,
Tokyo 174 Japan
Tel.: (932) 9291～4