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Outline of the Present and Past Work of the Society of Rubber Industry of Japan

T. YAMAZAKI

Sumitomo Electric Wire and Cable Works, Osaka.

本文は 1938 年 5 月ロンドンに於て開催せられたる Proceedings of the Rubber Technology Conference の席上日本護謨協會を代表して筆者によつて朗讀せられたるメッセージであるが大會の組織上止むを得ず個人名義にて發表せられたるものである、茲に本文を會員諸氏に披露し、筆者の勞に感謝する次第である。

(編輯委員記)

ABSTRACT

An account is given of the status and activities of the Society of Rubber Industry of Japan, including the holding of meetings, publication of the Journal and of the Handbook for rubber technologists, drafting of standard methods of analysis and testing, preparation of standard specifications for rubber goods, and arrangements for the exchange of publications. Attention is drawn to the notable contributions made by Japanese workers to the knowledge of rubber, as indicated by a résumé of their published papers on rubber science and technology. A list is given of laboratories and institutions in Japan where rubber research is carried on.

Japan is well-known as a country which utilises science to the best advantage in its industrial development. This holds true of Japan's rubber industry, whose annual production is valued at 150 million yen, of which 60 million yen represents exports. This development has resulted from continuous research.

The progress of science in Japan had lagged behind that in Europe and America, and as it was thus necessary for us to develop our arts and sciences

very quickly in order to reach the level attained in the western world, past efforts have been directed only to the absorption of European and American civilisation. Accordingly, there are many technologists who can read books in foreign languages, although few can speak or write them. Moreover, the Japanese language can be understood only with difficulty by Europeans and Americans. Hence many of our investigations have unfortunately not been published in Europe or America. In future every effort will be made to publish the results of our work in such a way that they may become known in other countries, and we hope that co-operation will be forthcoming in disseminating this knowledge.

There were formerly two societies for rubber research in Japan, one established in Osaka in 1928 and the other in Tokyo in 1929. In 1932 these amalgamated to form the Society of Rubber Industry of Japan (Nippon Gomu Kyokwai). The membership has reached 670 and includes several foreign members. The Society publishes a monthly journal (*Journal of the Society of Rubber Industry of Japan*) of 50 to 70 pages, $8 \times 11\frac{1}{2}$ ins. Monthly meetings are held in Tokyo and Osaka, and informal discussions and visits to factories are arranged from time to time. The Society has also published a pocket-size handbook for rubber technologists; this, written by 50 authors who are specialists in their particular subjects, comprises 499 pages of 896 words each. The Society's Committees have been engaged also on the selection of rubber technical terms, preparation of specifications, and formulation of methods of analysis and testing. Specifications for rubber belting and methods of chemical test for rubber have been published, as has also an English translation of the latter in response to requests from various foreign countries. The preparation of other specifications is in progress. Moreover, the Society is planning to co-operate internationally by exchanging journals or publications with foreign societies and institutions, and will welcome communications from any such organisations that may be interested in this scheme.

Whilst these activities have been carried on by the Society, various institutions and research laboratories have been making fundamental contributions to rubber technology. Institutions carrying out research on rubber are as follows:—

Department of Applied Chemistry, College of Engineering, Kyushu Imperial University (Fukuoka).

Research Laboratory, Sumitomo Electric Wire and Cable Works (Osaka).

Research Laboratory, Dainichi Electric Wire Company (Amagasaki).

Second Department, Osaka Imperial Industrial Research Institute (Osaka).

Research Laboratory, Dunlop Company (Far East) Ltd. (Kobe).

Department of Applied Chemistry, Kiryu Higher Technical School (Kiryu).

Second Division, Scientific Research Institute of the Imperial Army

Department (Tokyo).

Research Laboratory, Tokyo E. C. Industrial Co. (Tokyo).

Research Laboratory, Fujikura Electric Wire Co. (Tokyo).

Research Laboratory in Yokohama Factory of Furukawa Electro-Industrial Co. (Yokohama).

Fifth Department, Tokyo Imperial Industrial Research Institute (Tokyo).

Rubber Research Laboratory, Department of Applied Chemistry, Tokyo Engineering College (Tokyo).

Fifth Department, Government Electro-Technical Research Institute (Tokyo).

Department of Chemistry, Physico-Chemical Research Institute (Tokyo).

Rubber Research Institute, Imperial Aviation Research Institute (Tokyo).

Chemical Department, Heisen Yôkô Co. (Tokyo).

Reference may be made to the papers published by Japanese workers on researches dealing with rubber. These comprise something like 80 papers during the period 1922-37, covering such varied subjects as the ageing of vulcanised rubber (T. Yamazaki), ageing in sunlight (K. Asano), reactions of aniline and its homologues as accelerators (T. Kimishima), sulphur chloride (H. Endo), the hard rubber reaction (S. Numaziri), fundamental characteristics of organic accelerators (K. Shimada), acetone extract of raw rubber (H. Endo), thermo-chemical studies of vulcanisation (K. Hada), dielectric constant of the rubber-sulphur system (S. Kimura, T. Sizawa, and S. Takeuchi), variable factors in outdoor exposure tests (S. Saito), outdoor exposure ageing at high altitudes and low levels (S. Saito), estimation of mineral matter in hard rubber by using sesquiterpene as a solvent (S. Uchida), carbon black for rubber (T. Semba), use of accelerator combinations (S. Minatoya, K. Kojima, I. Nagai, and I. Aoe), synthesis of new anti-oxidants (S. Kunisawa), liquefaction of waste rubber by thermal decomposition (T. Kato and K. Sameshima), hysteresis at low temperatures (B. Yamaguchi, T. Asahina, S. Hachiya, and S. Ogawa), Joule effect of rubber (Y. Tanaka, S. Kambara, and H. Fujita), oil-

resistance (Y. Tanaka, S. Kambara, and J. Noto), balata resins (T. Kuwata), and magnesium carbonate and transparency of vulcanised rubber (Y. Tanaka). Most of these papers have been published in the *Journal of the Society of Rubber Industry of Japan*, whilst others are to be found in the *Journal of the Society of Chemical Industry, Japan*; *Reports of the Osaka Imperial Industrial Research Institute*; *Memoirs of the Faculty of Engineering, Kyushu Imperial University*; *Journal of Electricity, Japan*; *Transactions of the Institution of the Rubber Industry*; *India-Rubber Journal*.

Recent membership statistics of the Society of Rubber Industry of Japan, published on March 31, 1937, are as follows:—

	Ordinary members.	Supporting members
Kanto District	309	26
Kansai District	258	20
Non-district	11	
Subscription	19	
Total	—	643

Activities of the Society during 1936 include:—

- (a) Change of the Society's system into a corporate juridical body.
- (b) Compilation of literature on synthetic rubbers.
- (c) Preparation of specification for rubber hose to be used with water.
- (d) English edition of the methods of chemical analysis of rubber products.
- (e) Holding annual meetings.
- (f) Holding lectureclasses on rubber.

Discussion.

The GENERAL REPORTER (Mr. F. H. COTTON) asked what arrangements were in existence for exchange of publications between the Society of Rubber Industry of Japan and other societies, and what was being done regarding the translation of important Japanese papers into English.

Dr. T. YAMAZAKI, in reply, said that until now exchange had been made by mutual understanding with societies in foreign countries. With the rapid increase in the number of papers dealing with rubber research, translation was becoming difficult because it was necessary for the translator to have a knowledge not only of the language but also of rubber technology. What had been done, and what it was proposed should continue to be done, was to make short abstracts in English, or sometimes German, of the original papers and circulate these.