

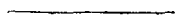
MEMOIRS  
OF THE  
COLLEGE OF SCIENCE

KYOTO IMPERIAL UNIVERSITY



VOL. XI,

1928



KYOTO

## CONTENTS OF VOLUME XI

---

	PAGE
<b>Goro Shima</b> —On the Electrolytic Reduction of Aldehydes, Part II. Metanitrobenzaldehyde ... ..	1
<b>Toshizô Matsumoto</b> —Group-Theory of Sequences of Numbers ...	11
<b>Toshimichi Yamamoto</b> —On the Arrangements of the Micro-Crystals in Zinc and Cadmium obtained by Sublimation ... ..	39
<b>Gennosuke Ando</b> —On the Reflective Power of some Eutectic Alloys in Relation to their Micro-Structures ... ..	43
<b>Gennosuke Ando</b> —The Quantitative Determination of the Degree of Tarnishing of a Metallic Surface by its Reflective Power ...	65
<b>Rokuro Nakaseko</b> —Studies in Micro-Estimation of Metallic Elements, Part I. The Micro-Chemistry of Potassium Ferrocyanide ...	95
<b>Rokuro Nakaseko</b> —Studies in Micro-Estimation of Metallic Elements, Part II. The Micro-Detection of Iron with Dimethylglyoxime ...	113
<b>Keiji Yamashita</b> —On the Theory of Reverberation ... ..	119
<b>Hiroshi Kawai</b> —On the Brinell Hardness of the Ternary Alloys consisting of Copper, Zinc and Aluminium as an <i>a</i> -Solid Solution ... ..	137
<b>Noboru Furutani</b> —On the Measurements of the Vapour Pressures of Concentrated Aqueous Solutions of Potassium Iodide ...	149
<b>Shigeru Komatsu and Masao Kurata</b> —Studies on Catalytic Action, XXII. Catalytic Action of Reduced Copper on Unsaturated Hydrocarbons ... ..	163
<b>Riki Horiuchi</b> —On the Transformation of Aliphatic Terpenes into Monocyclic Terpenes—A Synthesis of Menthol ... ..	171
<b>Kenzo Tanaka</b> —Bending of Aluminium-Crystals ... ..	199
<b>Shigeru Komatsu and Naohiko Matsunami</b> —On Kakishibu, IV. Constitution of Shibuol, III ... ..	205
<b>Shigeru Komatsu, Naohiko Matsunami and Masao Kurata</b> —On Kakishibu, V. Methylation of Shibuol ... ..	211
<b>Jinzo Tsutsumi</b> —An Examination of the Micro-Crystals of Calcium Carbonate in Molluscan Shells by means of X-Rays, Part I ...	217

	PAGE
<b>Hidehiko Fukushima</b> —The Arrangement of Micro-Crystals in the Banded "Supposed Aragonite (Arareishi)" ... ..	223
<b>Kenzo Tanaka</b> —The Recrystallization of Aluminium ... ..	229
<b>Issei Yamamoto</b> —The Influence of the Heliographic Activity upon the Solar Constant, with two Appendices ... ..	233
<b>Usaburo Y shida</b> and <b>Jinzo Tsutsumi</b> —A Peculiar Reversal of the Discharge-Figures on Photographic Plates ... ..	267
<b>Shogo Tsuboi</b> —On the Fibrous Structure in Metals Deposited by the Difference of Electrolytic Solutional Pressures... ..	271
<b>Tokutaro Sakao</b> —On the Destruction of the Single Crystal of Aluminium by the Process of Rolling ... ..	279
<b>Takeo Fujiwara</b> —Laue-Photograph taken with Convergent X-Rays	283
<b>Issei Yamamoto</b> —Some Notes on Solar Research ... ..	303
<b>Yoshikatsu Watanabe</b> —On some Functions defined by certain Infinite Products ... ..	311
<b>Tatsumi Terada</b> —"The Reversal-like Phenomena" of the Secondary and the Tertiary Discharge-Figures impressed on Photographic Plates... ..	355
<b>Kenzo Tanaka</b> —The Orientation of Single-Crystals of Zinc ... ..	361
<b>Toshizô Matsumoto</b> —On Paradoxes and Definitions ... ..	367
<b>Shogo Tsuboi</b> —The Arrangement of the Micro-Crystals in Com- pressed Magnesium and Aluminium Plates ... ..	375
<b>Shunzo Koidzumi</b> —The Electrolytic Oxidation of Alcohols, III. Electrolytic Oxidation of Benzylalcohol ... ..	383
<b>Shunzo Koidzumi</b> —The Electrolytic Oxidation of Alcohols, IV. Electrolytic Oxidation of Propylalcohol in Alkaline Solutions	391
<b>Jinzo Tsutsumi</b> —An Examination of the Micro-Crystals of Calcium Carbonate in Molluscan Shells by means of X-Rays, Part II	401
<b>Goro Shima</b> —On the Electrolytic Reduction of Aldehydes, Part III. Ortho-and Para-Oxybenzaldehydes ... ..	407
<b>Goro Shima</b> —On the Electrolytic Reduction of Aldehydes, Part IV. Vanillin and Piperonal ... ..	419
<b>Hideki Hirata</b> —On the Arrangements of the Micro-Crystals in Bismuth and Antimony deposited by Electrolysis ... ..	429
<b>Usaburo Yoshida, Hidehiko Fukushima</b> and <b>Megumu Iso</b> —The Probability of Lightning Strokes ... ..	451
<b>Setsuzo Takeyama</b> —A Method of Determining the Orientation of Crystal-Axes by X-Rays ... ..	469
<b>Shigeru Komatsu</b> —Biochemical Studies on Pityrol, I. Introduction	

	PAGE
to the Biochemistry of Pityrol ... ..	481
<b>Shinzaburo Fujita</b> —Biochemical Studies on Pityrol, II. Distillation of Rice Bran ... ..	497
<b>Saburo Sakami</b> —Biochemical Studies on Pityrol, III. Neutral Con- stituents of Pityrol ... ..	505
<b>Bunkichi Masumoto</b> —Biochemical Studies on Pityrol, IV. Acidic Constituents of Pityrol ... ..	517
<b>Shigekiyo Suzuki</b> —Biochemical Studies on Pityrol, V. Basic Con- stituents of Pityrol ... ..	521
<b>Seiichi Shoyama</b> —Biochemical Studies on Pityrol, VI. Distillation of Palmitic Acid ... ..	533
<b>Hiroshi Ogata</b> —Biochemical Studies on Pityrol, VII. Distillation of Oleic Acid ... ..	543
<b>Yoshinori Hidaka</b> —Biochemical Studies on Pityrol, VIII. Distilla- tion of Sucrose ... ..	549

---

# INDEX OF AUTHORS TO VOLUME XI

	PAGE
<b>Ando, G.</b> —On the Reflective Power of Some Eutectic Alloys in Relation to their Micro-Structures ... ..	43
<b>Ando, G.</b> —The Quantitative Determination of the Degree of Tarnishing of a Metallic Surface by its Reflective Power ... ..	65
<b>Fujita, S.</b> —Biochemical Studies on Pityrol, II. Distillation of Rice Bran ... ..	497
<b>Fujiwara, T.</b> —Laue-Photograph taken with Convergent X-Rays ... ..	283
<b>Fukushima, H.</b> —The Arrangement of Micro-Crystals in the Banded "Supposed Aragonite (Arareishi)" ... ..	223
<b>Fukushima, H.</b> (See <b>Yoshida, U., Fukushima, H. and Iso, M.</b> ) ... ..	451
<b>Furutani, N.</b> —On the Measurements of the Vapour Pressures of Concentrated Aqueous Solutions of Potassium Iodide ... ..	149
<b>Hidaka, Y.</b> —Biochemical Studies on Pityrol, VIII. Distillation of Sacrose ... ..	549
<b>Hirata, H.</b> —On the Arrangements of the Micro-Crystals in Bismuth and Antimony deposited by Electrolysis ... ..	429
<b>Horiuchi, R.</b> —On the Transformation of Aliphatic Terpenes into Monocyclic Terpenes—A Synthesis of Menthol ... ..	171
<b>Iso, M.</b> (See <b>Yoshida, U., Fukushima, H. and Iso, M.</b> ) ... ..	451
<b>Kawai, H.</b> —On the Brinell Hardness of the Ternary Alloys consisting of Copper, Zinc and Aluminium as an $\alpha$ -Solid Solution ... ..	137
<b>Koidzumi, S.</b> —The Electrolytic Oxidation of Alcohols, III. Electrolytic Oxidation of Benzylalcohol ... ..	383
<b>Koidzumi, S.</b> —The Electrolytic Oxidation of Alcohols, IV. Electrolytic Oxidation of Propylalcohol in Alkaline Solutions... ..	391
<b>Komatsu, S. and Kurata, M.</b> —Studies on Catalytic Action, XXII. Catalytic Action of Reduced Copper on Unsaturated Hydrocarbons ... ..	163
<b>Komatsu, S. and Matsunami, N.</b> —On Kakishibu, IV. Constitution of Shibuol, III ... ..	205
<b>Komatsu, S., Matsunami, N. and Kurata, M.</b> —On Kakishibu, V. Methylation of Shibuol ... ..	211
<b>Komatsu, S.</b> —Biochemical Studies on Pityrol, I. Introduction to the Biochemistry of Pityrol ... ..	481
<b>Kurata, M.</b> (See <b>Komatsu, S. and Kurata, M.</b> ) ... ..	163
<b>Kurata, M.</b> (See <b>Komatsu, S., Matsunami, N. and Kurata, M.</b> ) ... ..	211
<b>Masumoto, B.</b> —Biochemical Studies on Pityrol, IV. Acidic Constituents of Pityrol ... ..	517
<b>Matsumoto, T.</b> —Group-Theory of Sequences of Numbers ... ..	11
<b>Matsumoto, T.</b> —On Paradoxes and Definitions ... ..	367
<b>Matsunami, N.</b> (See <b>Komatsu, S. and Matsunami, N.</b> ) ... ..	205
<b>Matsunami, N.</b> (See <b>Komatsu, S., Matsunami, N. and Kurata, M.</b> ) ... ..	211
<b>Nakaseko, R.</b> —Studies in Micro-Estimation of Metallic Elements, Part I. The Micro-Chemistry of Potassium Ferrocyanide ... ..	95

	PAGE
<b>Nakaseko, R.</b> — <i>Studies in Micro-Estimation of Metallic Elements, Part. II. The Micro-Detection of Iron with Dimethylglyoxime</i> ... ..	113
<b>Ogata, H.</b> — <i>Biochemical Studies on Pityrol, VII. Distillation of Oleic Acid</i> ... ..	543
<b>Sakami, S.</b> — <i>Biochemical Studies on Pityrol, III. Neutral Constituents of Pityrol</i> ... ..	505
<b>Sakao, T.</b> — <i>On the Destruction of the Single Crystal of Aluminium by the Process of Rolling</i> ... ..	279
<b>Shima, G.</b> — <i>On the Electrolytic Reduction of Aldehydes, Part II. Metanitrobenzaldehyde</i> ... ..	1
<b>Shima, G.</b> — <i>On the Electrolytic Reduction of Aldehydes, Part III. Ortho and Para-Oxybenzaldehydes</i> ... ..	407
<b>Shima, G.</b> — <i>On the Electrolytic Reduction of Aldehydes, Part IV. Vanillin and Piperonal</i> ... ..	419
<b>Shoyama, S.</b> — <i>Biochemical Studies on Pityrol, VI. Distillation of Palmitic Acid</i> ... ..	533
<b>Suzuki, S.</b> — <i>Biochemical Studies on Pityrol, V. Basic Constituents of Pityrol</i> ... ..	521
<b>Takeyama, S.</b> — <i>A Method of Determining the Orientation of Crystal-Axes by X-Rays</i> ... ..	469
<b>Tanaka, K.</b> — <i>Bending of Aluminium-Crystals</i> ... ..	199
<b>Tanaka, K.</b> — <i>The Recrystallization of Aluminium</i> ... ..	229
<b>Tanaka, K.</b> — <i>The Orientation of Single-Crystals of Zinc</i> ... ..	361
<b>Terada, T.</b> — <i>"The Reversal-like Phenomena" of the Secondary and the Tertiary Discharge-Figures impressed on Photographic Plates</i> ... ..	355
<b>Tsuboi, S.</b> — <i>On the Fibrous Structure in Metals Deposited by the Difference of Electrolytic Solutional Pressures</i> ... ..	271
<b>Tsuboi, S.</b> — <i>The Arrangement of the Micro-Crystals in Compressed Magnesium and Aluminium Plates</i> ... ..	375
<b>Tsutsumi, J.</b> — <i>An Examination of the Micro-Crystals of Calcium Carbonate in Molluscan Shells by means of X-Rays, Part I</i> ... ..	217
<b>Tsutsumi, J.</b> (See <b>Yoshida, U. and Tsutsumi, J.</b> ) ... ..	267
<b>Tsutsumi, J.</b> — <i>An Examination of the Micro-Crystals of Calcium Carbonate in Molluscan Shells by means of X-Rays, Part II</i> ... ..	401
<b>Watanabe, Y.</b> — <i>On some Functions defined by certain Infinite Products</i> ... ..	311
<b>Yamamoto, I.</b> — <i>The Influence of the Heliographic Activity upon the Solar Constant, with two Appendices</i> ... ..	233
<b>Yamamoto, I.</b> — <i>Some Notes on Solar Research</i> ... ..	303
<b>Yamamoto, T.</b> — <i>On the Arrangements of the Micro-Crystals in Zinc and Cadmium obtained by Sublimation</i> ... ..	39
<b>Yamashita, K.</b> — <i>On the Theory of Reverberation</i> ... ..	119
<b>Yoshida, U. and Tsutsumi, J.</b> — <i>A Peculiar Reversal of the Discharge-Figures on Photographic Plates</i> ... ..	267
<b>Yoshida, U., Fukushima, H. and Iso, M.</b> — <i>The Probability of Lightning Strokes</i> ... ..	451

# INDEX OF SUBJECTS TO VOLUME XI

	PAGE
Acidic Constituents of Pityrol, Biochemical Studies on Pityrol, IV., ( <i>Masumoto</i> ) ...	517
Alcohols, The Electrolytic Oxidation of, III. Electrolytic Oxidation of Benzylalcohol ( <i>Koidzumi</i> )... ..	383
Alcohols, The Electrolytic Oxidation of, IV. Electrolytic Oxidation of Propylalcohol in Alkaline Solutions ( <i>Koidzumi</i> ) ... ..	391
Aldehydes, On the Electrolytic Reduction of, Part II. Metanitrobenzaldehydes ( <i>Shima</i> )...	1
Aldehydes, On the Electrolytic Reduction of, Part III. Ortho- and Para-Oxybenzaldehydes ( <i>Shima</i> ) ... ..	407
Aldehydes, On the Electrolytic Reduction of, Part IV. Vanillin and Piperonal ( <i>Shima</i> ) ...	419
Aliphatic Terpenes, On the Transformation of, into Monocyclic Terpenes—A Synthesis of Menthol ( <i>Horiuchi</i> ) ... ..	171
Alkaline Solutions, Electrolytic Oxidation of Alcohols, IV. Electrolytic Oxidation of Propylalcohol in, ( <i>Koidzumi</i> )... ..	391
$\alpha$ Solid Solution, On the Brinell Hardness of the Ternary Alloys consisting of Copper, Zinc and Aluminium as an, ( <i>Kawai</i> ) ... ..	137
Aluminium-Crystals, Bending of, ( <i>Tanaka</i> ) ... ..	199
Aluminium, The Recrystallization of, ( <i>Tanaka</i> ) ... ..	229
Aluminium, On the Destruction of the Single Crystal of, by the Process of Rolling ( <i>Sakao</i> )...	279
Aluminium Plates, The Arrangement of the Micro-Crystals in Compressed Magnesium and, ( <i>Tsuboi</i> ) ... ..	375
Antimony, On the Arrangements of the Micro-Crystals in Bismuth and, deposited by Electrolysis ( <i>Hirata</i> )... ..	429
Aqueous Solutions, On the Measurements of the Vapour Pressures of Concentrated, of Potassium Iodide ( <i>Furutani</i> ) ... ..	149
Aragonite (Arareishi), The Arrangement of Micro-Crystals in Banded Supposed, ( <i>Fukushima</i> )	223
Basic Constituents of Pityrol, Biochemical Studies on Pityrol, V., ( <i>Suzuki</i> ) ... ..	521
Bending of Aluminium-Crystals ( <i>Tanaka</i> )... ..	199
Benzylalcohol, The Electrolytic Oxidation of Alcohols, III. Electrolytic Oxidation of, ( <i>Koidzumi</i> )... ..	383
Biochemical Studies on Pityrol, I. Introduction to the Biochemistry of Pityrol ( <i>Komatsu</i> ) ...	481
Biochemical Studies on Pityrol, II. Distillation of Rice Bran ( <i>Fujita</i> ) ... ..	497
Biochemical Studies on Pityrol, III. Neutral Constituents of Pityrol ( <i>Sakami</i> ) ... ..	505
Biochemical Studies on Pityrol, IV. Acidic Constituents of Pityrol ( <i>Masumoto</i> ) ... ..	517
Biochemical Studies on Pityrol, V. Basic Constituents of Pityrol, ( <i>Suzuki</i> ) ... ..	521
Biochemical Studies on Pityrol, VI. Distillation of Palmitic Acid ( <i>Shoyama</i> ) ... ..	533
Biochemical Studies on Pityrol, VII. Distillation of Oleic Acid, ( <i>Ogata</i> ) ... ..	543
Biochemical Studies on Pityrol, VIII. Distillation of Sucrose ( <i>Hidaka</i> ) ... ..	549
Bismuth and Antimony, On the Arrangements of the Micro-Crystals in, deposited by Electrolysis, ( <i>Hirata</i> ) ... ..	429
Brinell Hardness, On the, of the Ternary Alloys consisting of Copper, Zinc and Aluminium as an $\alpha$ -Solid Solution ( <i>Kawai</i> ) ... ..	137

	PAGE
Cadmium, On the Arrangements of the Micro-Crystals in Zinc and, obtained by Sublimation ( <i>Yamamoto</i> ) ... ..	39
Calcium Carbonate, An Examination of the Micro-Crystals of, in Molluscan Shells, by means of X-Rays, Part I ( <i>Tsutsumi</i> ) ... ..	217
Calcium Carbonate, An Examination of the Micro-Crystals of, in Molluscan Shells by means of X-Rays, Part II ( <i>Tsutsumi</i> ) ... ..	401
Catalytic Action, Studies on, XXII. Catalytic Action of Reduced Copper on Unsaturated Hydrocarbons ( <i>Komatsu and Kurata</i> ) ... ..	163
Compressed Magnesium and Aluminium Plates, The Arrangement of the Micro-Crystals in, ( <i>Tsuboi</i> ) ... ..	375
Convergent X-Rays, Laue-Photograph taken with, ( <i>Fujiwara</i> ) ... ..	283
Crystal-Axes, A Method of Determining the Orientation of, by X-Rays ( <i>Takeyama</i> ) ... ..	469
Crystals of Zinc, The Orientation of Single, ( <i>Tanaka</i> ) ... ..	361
Definitions, On Paradoxes and, ( <i>Matsumoto</i> ) ... ..	367
Destruction of the Single Crystal of Aluminium by the Process of Rolling ( <i>Sakao</i> ) ... ..	279
Dimethylglyoxime, Studies in Micro-Estimation of Metallic Elements, Part II. The Micro- Detection of Iron with, ( <i>Nakaseko</i> ) ... ..	113
Discharge-Figures, A Peculiar Reversal of the, on Photographic Plates ( <i>Yoshida and</i> <i>Tsutsumi</i> ) ... ..	267
Discharge-Figures, The Reversal-like Phenomena of the Secondary and the Tertiary, impressed on Photographic Plates ( <i>Terada</i> ) ... ..	355
Electrolysis, On the Arrangements of the Micro-Crystals in Bismuth and Antimony deposited by, ( <i>Hirata</i> ) ... ..	429
Electrolytic Oxidation of Alcohols, III. Electrolytic Oxidation of Benzylalcohol ( <i>Koidzumi</i> ) ... ..	383
Electrolytic Oxidation of Alcohols, IV. Electrolytic Oxidation of Propylalcohol in Alkaline Solutions ( <i>Koidzumi</i> ) ... ..	391
Electrolytic Reduction, On the, of Aldehydes, Part II. Metanitrobenzaldehydes ( <i>Shima</i> ) ... ..	1
Electrolytic Reduction, On the, of Aldehydes, Part III. Ortho-and Para-Oxybenzaldehydes ( <i>Shima</i> ) ... ..	407
Electrolytic Reduction, On the, of Aldehydes, Part IV. Vanillin and Piperonal ( <i>Shima</i> ) ... ..	419
Electrolytic Solutional Pressures, On the Fibrous Structure in Metals Deposited by the Difference of, ( <i>Tsuboi</i> ) ... ..	271
Eutectic Alloys, On the Reflective Power of some, in Relation to their Micro-Structures ( <i>Ando</i> ) ... ..	43
Fibrous Structure, On the, in Metals Deposited by the Difference of Electrolytic Solutional Pressures ( <i>Tsuboi</i> ) ... ..	271
Functions, On some, defined by certain Infinite Products ( <i>Watanabe</i> ) ... ..	311
Group-Theory of Sequences of Numbers ( <i>Matsumoto</i> ) ... ..	11
Heliographic Activity, the Influence of the, upon the Solar Constant, with two Appendices ( <i>Yamamoto</i> ) ... ..	233
Infinite Products, On some Functions defined by certain, ( <i>Watanabe</i> ) ... ..	311
Iron with Dimethylglyoxime, Studies in Micro-Estimation of Metallic Elements, Part II. The Micro-Detection of, ( <i>Nakaseko</i> ) ... ..	113
Kakishibu, IV. Constitution of Shibuol, III ( <i>Komatsu and Matsunami</i> ) ... ..	205
Kakishibu, V. Methylation of Shibuol ( <i>Komatsu, Matsunami and Kurata</i> ) ... ..	211
Laue-Photograph taken with Convergent X-Rays ( <i>Fujiwara</i> ) ... ..	283
Lightning Strokes, The Probability of, ( <i>Yoshida, Fukushima and Iso</i> ) ... ..	451
Magnesium and Aluminium Plates, The Arrangement of the Micro-Crystals in Compressed, ( <i>Tsuboi</i> ) ... ..	375



	PAGE
Menthol, On the Transformation of Aliphatic Terpenes into Mono-Cyclic Terpenes—A Synthesis of, ( <i>Horiuchi</i> ) ... ..	171
Metallic Elements, Studies in Micro-Estimation of, Part I. The Micro-Chemistry of Potassium Ferrocyanide ( <i>Nakaseko</i> ) ... ..	95
Metallic Elements, Studies in Micro-Estimation of, Part II. The Micro-Detection of Iron with Dimethylglyoxime, ( <i>Nakaseko</i> )... ..	113
Metal Surface, The Quantitative Determination of the Degree of Tarnishing of a, by its Reflective Power ( <i>Ando</i> ) ... ..	65
Metals, On the Fibrous Structure in, Deposited by the Difference of Electrolytic Solutional Pressures ( <i>Tsuboi</i> ) ... ..	271
Metanitrobenzaldehyde, On the Electrolytic Reduction of Aldehydes, Part II., ( <i>Shima</i> ) ...	1
Methylation of Shibuol, On Kakishibu V., ( <i>Komatsu, Akatsunami and Kurata</i> ) ... ..	211
Micro-Crystals, On the Arrangements of the, in Zinc and Cadmium obtained by Sublimation ( <i>Yamamoto</i> ) ... ..	39
Micro-Crystals, The Arrangement of, in the Banded "Supposed Aragonite (Aracishi)" ( <i>Fukushima</i> ) ... ..	223
Micro-Crystals, The Arrangement of the, in Compressed Magnesium and Aluminium Plates ( <i>Tsuboi</i> ) ... ..	375
Micro-Crystals, An Examination of the, of Calcium Carbonate in Molluscan Shells by means of X-Rays, Part I ( <i>Tsutsumi</i> ) ... ..	217
Micro-Crystals, An Examination of the, of Calcium Carbonate in Molluscan Shells by means of X-Rays, Part II ( <i>Tsutsumi</i> )... ..	401
Micro-Crystals, On the Arrangements of the, in Bismuth and Antimony deposited by Electrolysis, ( <i>Hirata</i> ) ... ..	429
Micro-Estimation, Studies in, of Metallic Elements, Part I. The Micro-Chemistry of Potassium Ferrocyanide ( <i>Nakaseko</i> )... ..	95
Micro-Estimation, Studies in, of Metallic Elements, Part II. The Micro-Detection of Iron with Dimethylglyoxime ( <i>Nakaseko</i> )... ..	113
Micro-Structures, On the Reflective Power of some Eutectic Alloys in Relation to their, ( <i>Ando</i> ) ... ..	43
Molluscan Shells, An Examination of the Micro-Crystals of Calcium Carbonate in, by means of X-Rays, Part I ( <i>Tsutsumi</i> ) ... ..	217
Molluscan Shells, An Examination of the Micro-Crystals of Calcium Carbonate in, by means of X-Rays, Part II ( <i>Tsutsumi</i> )... ..	401
Monocyclic Terpenes, On the Transformation of Aliphatic Terpenes into,—A Synthesis of Menthol ( <i>Horiuchi</i> ) ... ..	171
Neutral Constituents of Pityrol, Biochemical Studies on Pityrol, III., ( <i>Sakami</i> )... ..	505
Numbers, Group-Theory of Sequences of, ( <i>Matsumoto</i> ) ... ..	11
Oleic Acid, Biochemical Studies on Pityrol, VII. Distillation of, ( <i>Ogata</i> ) ... ..	543
Ortho-and Para-Oxybenzaldehydes, On the Electrolytic Reduction of Aldehydes, Part II., ( <i>Shima</i> ) ... ..	407
Palmitic Acid, Biochemical Studies on Pityrol, VI. Distillation of, ( <i>Shoyama</i> ) ... ..	533
Paradoxes and Definitions ( <i>Matsumoto</i> ) ... ..	367
Para-Oxybenzaldehydes, On the Electrolytic Reduction of Aldehydes, Part III. Ortho-and, ( <i>Shima</i> ) ... ..	407
Peculiar Reversal of the Discharge-Figures on Photographic Plates ( <i>Yoshida and Tsutsumi</i> )	267
Piperonal, On the Electrolytic Reduction of Aldehydes, Part IV. Vanillin and, ( <i>Shima</i> )	419
Pityrol, Biochemical Studies on, I. Introduction to the Biochemistry of Pityrol ( <i>Komatsu</i> )	481
Pityrol, Biochemical Studies on, II. Distillation of Rice Bran ( <i>Fujita</i> ) ... ..	497

	PAGE
Pityrol, Biochemical Studies on, III. Neutral Constituents of Pityrol ( <i>Sakami</i> ) ...	505
Pityrol, Biochemical Studies on, IV. Acidic Constituents of Pityrol ( <i>Masumoto</i> ) ...	517
Pityrol, Biochemical Studies on, V. Basic Constituents of Pityrol ( <i>Suzuki</i> ) ...	521
Pityrol, Biochemical Studies on, VI. Distillation of Palmitic Acid ( <i>Shoyama</i> ) ...	533
Pityrol, Biochemical Studies on, VII. Distillation of Oleic Acid ( <i>Ogata</i> ) ...	543
Pityrol, Biochemical Studies on, VIII. Distillation of Sucrose ( <i>Hidaka</i> ) ...	549
Potassium Ferrocyanide, Studies in Micro-Estimation of Metallic Elements, Part I. The Micro-Chemistry of, ( <i>Nakaseko</i> ) ...	95
Potassium Iodide, On the Measurements of the Vapour Pressures of Concentrated Aqueous Solutions of, ( <i>Furutani</i> ) ...	149
Probability of Lightning Strokes ( <i>Yoshida, Fukushima and Iso</i> )... ..	451
Propylalcohol, The Electrolytic Oxidation of Alcohols, IV. Electrolytic Oxidation of, in Alkaline Solutions ( <i>Koidzumi</i> ) ...	391
Recrystallization of Aluminium ( <i>Tanaka</i> )... ..	229
Reduced Copper, Studies on Catalytic Action, XXII. Catalytic Action of, on Unsaturated Hydrocarbons ( <i>Komatsu and Kurata</i> ) ...	163
Reflective Power, On the, of some Eutectic Alloys in Relation to their Micro-Structures, ( <i>Ando</i> ) ...	43
Reflective Power, The Quantitative Determination of the Degree of Tarnishing of a Metal Surface by its, ( <i>Ando</i> ) ...	65
Reverberation, On the Theory of, ( <i>Yamashita</i> ) ...	119
Reversal-like Phenomena of the Secondary and the Tertiary Discharge-Figures impressed on Photographic Plates ( <i>Teraoka</i> ) ...	355
Rice Bran, Biochemical Studies on Pityrol, II. Distillation of, ( <i>Fujita</i> ) ...	497
Rolling, On the Destruction of the Single Crystal of Aluminium by the Process of, ( <i>Sakao</i> )	279
Sequences of Numbers, Group-Theory of, ( <i>Matsumoto</i> ) ...	11
Shibuol, On Kakishibu, IV. Constitution of, III. ( <i>Komatsu and Matsunami</i> ) ...	205
Shibuol, On Kakishibu, V. Methylation of, ( <i>Komatsu, Matsunami and Kurata</i> )...	211
Single Crystal of Aluminium, On the Destruction of the, by the Process of Rolling ( <i>Sakao</i> )	279
Single Crystals of Zinc. The Orientation of, ( <i>Tanaka</i> )... ..	361
Solar Constant, The Influence of the Heliographic Activity upon the, with two Appendices ( <i>Yamamoto</i> )... ..	233
Solar Research, Some Notes on, ( <i>Yamamoto</i> )... ..	303
Sublimation, On the Arrangements of the Micro-Crystals in Zinc and Cadmium obtained by, ( <i>Yamamoto</i> )... ..	39
Sucrose, Biochemical Studies on Pityrol, VIII. Distillation of, ( <i>Hidaka</i> ) ...	549
Synthesis of Menthol, On the Transformation of Aliphatic Terpenes into Monocyclic Ter- penes-, ( <i>Horiuchi</i> ) ...	171
Tarnishing of a Metal Surface by its Reflective Power, The Quantitative Determination of the Degree of, ( <i>Ando</i> ) ...	65
Ternary Alloys, On the Brinell Hardness of the, consisting of Copper, Zinc and Aluminium as an $\alpha$ -Solid Solution ( <i>Kawai</i> ) ...	137
Unsaturated Hydrocarbons, Studies on Catalytic Action, XXII. Catalytic Action of Reduced Copper on, ( <i>Komatsu and Kurata</i> ) ...	163
Vanillin and Piperonal, On the Electrolytic Reduction of Aldehydes, Part IV., ( <i>Shima</i> )	419
Vapour Pressures, On the Measurements of the, of Concentrated Aqueous Solutions of Potassium Iodide ( <i>Furutani</i> ) ...	149
X-Rays, An Examination of the Micro-Crystals of Calcium Carbonate in Molluscan Shells by means of, Part I ( <i>Tsutsumi</i> ) ...	217

	PAGE
X-Rays, An Examination of the Micro-Crystals of Calcium Carbonate in Molluscan Shells	
by means of, Part II ( <i>Tsutsumi</i> ) ... ..	401
X-Rays, Laue-Photograph taken with Convergent, ( <i>Fujiwara</i> ) ... ..	283
X-Rays, A Method of Determining the Orientation of Crystal-Axes by ( <i>Takeyama</i> ) ...	469
Zinc and Cadmium, On the Arrangements of the Micro-Crystals in, obtained by Sublima-	
tion ( <i>Yamamoto</i> ) ... ..	39
Zinc, The Orientation of Single Crystals of, ( <i>Tanaka</i> ) ... ..	361

---