

**Preprints for 60th Grand Lecture Meeting of
The Iron and Steel Institute of Japan**

C O N T E N T S

Lect. No.	T i t l e	Lecturer
1	On the Determination of Sulfur in Iron and Steel by Combustion Method.	Tadashi Endo, et alii....1069
2	Rapid Determination of Phosphorus in Steel without Oxidation and Reduction.	Yōzō Takano, et alii....1071
3	Rapid Determination of Chromium in Ferro-Chromium.	Kiyotoshi Kato, et alius....1073
4	Determination of Metallic Iron in Basic Slag. (Study on the chemical analysis of basic slag—V)	Shigeo Wakamatsu....1075
5	Determination of Gas in Steel by Vacuum-Fusion and Thermo-Conductivity Method. (On the analysis of gas constituents in steel by vacuum-fusion method—V)	Shigeki Sawa, et alius....1077
6	Rapid Determination of Oxygen in Steel by Inert Gas.	Schunichi Harada, et alii....1079
7	Determination of P in Low Alloy Steels by Quanto-Recorder....	Shigenori Kawai, et alii....1081
8	Spectrographic Determination by the British Spectrographic Standard. (Spectrography determination of trace elements in steel—I)	Isoshi Kawashima, et alius....1084
9	On Behavior of Burdens in the Blast Furnace Shaft. (Study on burdens in the blast furnace—I)	Katsuya Ono et alii....1086
10	Influence of the Scaffold on the Burden Decent in a Blast Furnace Shaft. (A model experiment)	Shunichi Komaki, et alii....1088
11	On the Distribution of Burden Materials in the Blast Furnace. (Distribution test by using a full-sized model)	Shigeyoshi Yabe, et alii....1090
12	A Consideration on the Reaction System in the Blast Furnace. (Studies on the factor effective to coke ratio of a blast furnace—I)	Seiichi Kojima, et alii....1091
13	A Study of the Reduction in Nadahama No.1 Blast Furnace. (Studies on the factor effective to coke ratio of a blast furnace—II)	Seiichi Kojima, et alii....1093
14	Errosion and Abnormal Expansion of the Upper Part Lining in the Blast Furnace Shaft. (Study of the errosion in blast furnace lining—I)	Akihiko Tanaka....1096
15	Measurement on Corrosion of the Blast Furnace Lining by the Radioactive Isotope.	Tadashi Kobayashi, et alii....1098
16	A Study on the Heat Efficiency of a Hot Stove at Kukioka Iron-Making Plant.	Katsuki Terakura, et alii....1100
17	On the Pelletizing Process of Iron-Ore Fines in the Balling Drum.	Kenji Suzawa, et alius....1103
18	Comparison of Fore-Pelletizing and Semi-Pelletizing Methods. (Study on the treatment of very fine iron ores—I)	Takashi Doinouchi, et alii....1105
19	The Study of the Sintering of Fine Iron Ores.	Nobunao Nishida, et alii....1107
20	Heat Transfer of the Air in the Sintering. (The fundamental study of the sintering of iron ores—II) ...	Nobunao Nishida, et alius....1109

- 21 Desulphurization of Iron-Sulphide in Molten Slag.
(Investigation into desulphurization in sintering process
— I) *Kin-ichi Sugawara, et alii*....1112
- 22 Automatic Control System of the Sintering Equipment and its
Recent Tendency in Foreign Countries. *Shozo Miyagawa, et alii*....1113.
- 23 Study on the Uniformity of Sinter Cake. *Yasumasa Sawamura, et alius*....1115
- 24 On the Permeability of the Bed in Sintering. *Kazuo Fukaya, et alius*....1117
- 25 On the Control of Air Flow through the Sintering Bed in
Routine Practice. *Shizuo Kiriyaama, et alii*....1119
- 26 The Relationship between Nature of the Fuels for Sintering
and Sintering Characteristics. *Teruo Ikeno, et alii*....1121
- 27 On the Remarkable Production Record of 3 Million Tons
with Kukioka No.4 Blast Furnace. *Keiji Tsujihata, et alii*....1123
- 28 On Recovery of Sludge from the Blast Furnace Gas. *Ryoichi Yamakoshi, et alii*....1126
- 29 Practice of Kamijima's Process for Making Sponge Iron. *Daisuke Kamijima*....1128
- 30 Reduction of Fine Iron Oxide by CO, H₂ and C₃H₈ Cracking Gas.
(On the manufacture of iron powder from iron oxide by gas
reduction at low temperature— I) *Hiroshi Kimura, et alii*....1130
- 31 On the Selective Reducibility of the Elements in Manufac-
turing Metallic Iron by a Basicity Degrees lower than 1.0... *Takahiro Morimune, et alii*....1132
- 32 Reduction of Iron Ores by a Reformed Mixed Gas
(Natural Gas+Carbon Dioxide).
(Reduction of iron ores by a reformed natural gas— III)..... *Noboru Taguchi, et alius*....1134
- 33 Reduction of Iron Ores by CO+H₂ Mixed Gas.
(Study on the reducibility of iron ores— III) *Kenjiro Kambara, et alius*....1136
- 34 Effect of Reducing Temperature and Reducing Gas Content on
Reduction of Iron Ore.
(Reduction of iron ore by N₂+CO+H₂ mixed gas.— I) *Akitosi Sigemi, et alii*....1138
- 35 Reducing Conditions in the Electric Smelting of Iron Ores.
(Studies on the electric smelting of iron sand— V) *Yūichirō Satō, et alii*....1140
- 36 Considerations on the Reducing Process of Electric Smelting.
(Studies on the electric smelting of iron sand— VI) *Kiyoshi Takai, et alii*....1142
- 37 Effect of Atmosphere on the Dephosphorization of Molten
Iron by Lime-Saturated Slag. *Toshiharu Mitsuo, et alius*....1144
- 38 Rate of Desulphurization of Molten Pig Iron by Manganese
as Temperature Decreases. *Michio Inouye, et alius*....1145
- 39 Effect of Nickel, Phosphorus, Sulphur and Tin on the Solubility
of Graphite in Liquid Iron. *Toshisada Mori, et alii*....1147
- 40 Weathering of Storage Coal. *Mataichi Utsunomiya, et alii*....1150
- 41 Reduction of Heavy-Caking Coal, and Oiling Test on
Charging Coal. *Keiji Tsujihata, et alii*....1152
- 42 Quality of Tuyère Coke. *Shiro Ida, et alii*....1155
- 43 Experiment of the Material Flow by a Model Bin.
(On the study of ore bin at sintering plant) *Isao Hanaki, et alii*....1158
- 44 The Balance of P and Mn in Sinter-Iron-Steel through
Processing at Tobata Integrated Works. *Katsuto Ōta, et alii*....1160
- 45 Construction and Operation of Open Hearth Furnaces with
a Simple Basic Roof. *Sigetoshi Asakuma, et alii*....1163

- 46 Construction and Operation of the New 200 t Stationary Open
Hearth Furnace, Muroran Works. *Zensaku Yamamoto, et alii*....1165
- 47 On the Construction and Operation of the Maerz-Boelens 200 t
Open Hearth Furnace. *Shinji Tsuda, et alii*....1167
- 48 The Hot Water Cooling of Open Hearth Furnaces..... *Toyohiko Ōta, et alius*....1169
- 49 Effect of Oxygen Lancing in Acid Open Hearth Steelmaking. *Hidenori Matsuoka*....1171
- 50 Results of Operation on the Use of Oxygen with Water
in the Open Hearth Furnace. *Sine Kaiho, et alii*....1173
- 51 On the Application of an Electrostatic Precipitator to an Open
Hearth Furnace. *Toyohiko Ōta, et alii*....1175
- 52 Study on the Open Hearth Dust.
(Research on the treatment in iron industry) *Takaaki Simose, et alii*....1177
- 53 Studies on Elimination of Fe_2O_3 Enriched Dust that Sticked
to Checker Bricks of Open Hearth Furnaces..... *Yasuo Koike, et alii*....1179
- 54 Operation Results of Tobata New Oxygen Converter Plant. *Shigeaki Morita, et alius*....1180
- 55 Analysis of Some Factors in L.D. Steelmaking. *Katashi Saito, et alii*....1182
- 56 On the Chemical Composition of Hot Metal for L.D. Converters. ... *Hachiro Araki, et alii*....1185
- 57 S Balance in a 50 t Oxygen Converter..... *Shigeru Maehara, et alii*....1187
- 58 On Reasonable Usage of Teeming Ladles at an L.D. Plant. *Hajime Nakagawa*....1189
- 59 On the Pouring Temperature of Liquid Steel. *Masahiko Yamamoto, et alii*....1192
- 60 Comparison of Various Hot-Top Heating Methods of Killed
Steel Ingots. *Hideo Watanabe, et alii*....1193
- 61 Study on the Exothermic Compounds for Hot-Top of Large
Ingots. *Katayama Motoyoshi, et alius*....1195
- 62 Saving of Exothermic Compounds and Thickness of Multi
Layers Exothermic Sleeves.
(Study on exothermic hot-top—Ⅲ) *Kumesaburo Sakai, et alii*....1198
- 63 Hot-Top Arc-Heating of Large Killed Ingots. *Hidetaro Nemoto, et alii*....1200
- 64 Using Control of Ingot-Moulds for Slabs. *Minoru Nishiwaki, et alii*....1201
- 65 On the Ductile Cast Iron Moulds. *Keiji Yoshikawa, et alii*....1203
- 66 Study on Material of Molds for Small Steel Ingots. *Hisao Ishizuka, et alii*....1205
- 67 Effect of a Pressboard during Pouring..... *Sasaki Kenji, et alius*....1207
- 68 Application of the Small Ultrasonic Energy to Some Melts.
(Study on ultrasonic casting—I) *Yukio Nagano, et alius*....1209
- 69 Study on the Factors Related to Electrode Consumption in
an Electric Arc Furnace. *Hisao Ishizuka, et alii*....1211
- 70 Temperature Control on Arc-Furnace Hearth Dimensions
by a Thermocouple. *Susumu Takeda, et alii*....1213
- 71 Effect of Crucibles on the Steel during Vacuum-Melting. *Kiyoshi Mizukawa, et alii*....1215
- 72 Features of Large Semikilled Ingots. *Hiroyuki Kajioaka, et alii*....1217
- 73 Mechanical Capped Steel for Hot Rolled Sheets. *Hiroaki Fujimaki, et alius*....1219
- 74 On the Relation between the Sand Marks and, Top-and Bottom-
Teeming Procedures.
(Studies on non-metallic inclusions, especially sand
marks in steel—Ⅱ) *Takaaki Simose, et alii*....1221
- 75 On the Teeming in the Protective Atmosphere.
(Studies on non-metallic inclusions, especially sand
marks in steel—Ⅲ)..... *Kiuchi Narita, et alii*....1224

76	Relation between Factors of Steelmaking Operation and Defects of Heavy Plates, and Controlling Practice.	<i>Yasuro Nagata, et alii</i>	1227
77	On the Relation between Occurrence Rate of Sand Marks and Compositions of Steels.	<i>Kou Tasaka, et alii</i>	1228
78	On the Oxidation of Silicon in Molten Iron. (Kinetic studies on the steelmaking reaction—I)	<i>Rokuro Sakagami</i>	1230
79	On the Decarbonization. (Kinetic studies on the steelmaking reaction—II)	<i>Rokuro Sakagami</i>	1232
80	Relation between Decarburization Reaction and Denitrification of Molten Steel. (Studies on the degassing of molten steel—I)	<i>Takehiro Iwata, et alii</i>	1233
81	Study on Grain Size Control.	<i>Haruhiko Fujita</i>	1235
82	On the Mechanism of Evolution of Inner Cracks of Cast Billets. (Study on continuous casting of steel—IV)	<i>Kiyoto Ushijima</i>	1236
83	On Gas Contents in Molten Slag. (Influence of water-vapor pressure in air on gas contents in molten steel—I)	<i>Yoshihiko Abe</i>	1238
84	On Gas Contents in Molten Steel Just before Tap. (Influence of water-vapor pressure in air on gas contents in molten steel—II)	<i>Yoshihiko Abe</i>	1240
85	Influence of Chromium on Activity of the Sulphur in Molten Iron.	<i>Zen-ichirō Morita, et alii</i>	1241
86	The Density of Molten Slags Containing Ferrous Oxide.	<i>Kazumi Ogino, et alii</i>	1243
87	Corrosion of Runner Bricks in the Al-Killed Steel Pouring Practice.	<i>Hiroshi Ohba, et alius</i>	1244
88	Studies on a Contamination of Thermocouples Used for Continuous Immersion Pyrometry of the Steel Bath. (On the continuous immersion pyrometry of molten steel—II) ...	<i>Noboru Hiraoka, et alii</i>	1246
89	Studies on the Rolling Load of the Plug Mill with a New Transistorized Strain Telemeter.	<i>Takashi Kusakabe, et alii</i>	1249
90	On the Extensimeter of Digital Type.	<i>Akira Abe</i>	1251
91	On Measurement of the Mean Specific Rolling Pressure of Roughing Stands in a Continuous Wire Rod Mill.	<i>Kōe Nakajima, et alii</i>	1252
92	Study on Pass Rolling.	<i>Yoichi Toda, et alii</i>	1254
93	Study on the Scale Formed on the Surface of Piercing Plugs. ...	<i>Yoshinobu Umezawa, et alii</i>	1256
94	Study on Centrifugally Cast Stainless Steel Pipes.	<i>Hiroshi Yagasaki, et alii</i>	1257
95	On the Prevention of Cracks on Low-Carbon Rimmed Slabs for a Strip Mill.	<i>Isao Tanaka, et alii</i>	1259
96	Surface Defects Occurred on Heating in Air.	<i>Hitoshi Iwata, et alius</i>	1261
97	Study on Oxide Layer of Low-Carbon Steel Sheets.	<i>Kameo Matsukura, et alii</i>	1262
98	Practical Study of Forged Work Rolls for a Cold Rolling Mill by an Electron-Microscope.	<i>Keiji Ariga, et alii</i>	1264
99	The Effect of Reconstruction of the Regenerative Soaking Pits....	<i>Kazuto Morita, et alii</i>	1266
100	On the Hot Workability of Stainless Steel Ingot.	<i>Toshimitsu Kanai, et alii</i>	1268
101	On the Relation between Reduction and Properties of Killed Steel Plates.	<i>Masuihiro Satō, et alii</i>	1270
102	On the Cold-Workability of Semikilled Steel Plates.	<i>Hisashi Gondoh, et alii</i>	1272
103	Study on Properties of Cold-Rolled Sheets Made from Pure-Oxygen Converter Steel.	<i>Bunichiro Kawasaki, et alii</i>	1275

- 104 Effect of Temper Rolling and Roller Levelling on Mechanical Properties of Rimmed Type Steel Sheets and Their Changes by Aging.Satoru Morishita, et alii....1276
- 105 Study on Drawability of the Hot-Rolled Steel Sheet.Toru Fukase, et alii....1278
- 106 Capped Rimmed Steel and its Deep Drawing Properties.Takehiko Fujii, et alii....1280
- 107 Some Observation on the Drawability for Several Types of Mild Steel Used for Wire Rods.Kazutomo Kitagawa, et alii....1282
- 108 High-Temperature Ductility and Shapes of AlN in Medium-Carbon Steel.
(Study of aluminum nitride in steel—II)Shigeo Hasebe....1284
- 109 Effect of AlN on the Cracking at the Welding Heat-Affected Zone. (Study of aluminum nitride in steel—III)Shigeo Hasebe....1286
- 110 Studies on Weldability of Materials for Resistance Welded Pipes.
.....Takeshi Okamura, et alius....1289
- 111 Effect of Cr in Case Hardening Steel of the Gas-Carburizing.Toshimi Sasaki....1291
- 112 On Gas Carburizing at High Temperature.Takashi Banno, et alii....1292
- 113 On Anodic Marking of Differential Coating of the Electrolytic Tin Plate.Osamu Yanabu, et alii....1294
- 114 Brittleness of Steels in Contact with Molten Zinc-Tin Alloys at High Temperature.Morio Nakajima....1297
- 115 Solubility of Nitrogen in Liquid Stainless Steel.Kazuma Takakura, et alii....1299
- 116 An Experiment on Determination of Slag Basicity with a Photo-Electric Photometer.Kiichi Sakanoue, et alius....1301
- 117 Influences on Machined Surface Layer on Surface Hardness of Hardened Steel.Turuo Shibasaki, et alii....1303
- 118 Torsional Tests of Ductile Cast Iron at Elevated Temperatures. ...Osamu Tsuneda, et alii....1305
- 119 Effect of Heat Treatment on Thermal Shock Resistance and Mechanical Properties for Alloy White Cast Iron.Ichiro Doi, et alii....1308
- 120 Consideration on the Dilatometer Curves of Cast Iron.Kingo Nagaoka, et alius....1310
- 121 Special Properties of Direct Rolling Plate of Cast Iron.
(Direct rolling of cast iron—II)Yuji Matsuura, et alii....1312
- 122 On the Configuration of Titanium Compounds in Pig Iron.Bunzi Etō, et alii....1315
- 123 On the Corrosion of Cast Iron by the Various Sulphuric Gases at High Temperatures.Hiroshi Nakai....1317
- 124 Notch Effects at Various Impact-Loading Speeds.
(Measurement of the tensile properties of steels by high-speed impact-testing machine—II)Shigetomo Nunomura, et alii....1319
- 125 Impact Behavior of Steels Heat-Affected by Welding.
(Studies of load-time relations on Charpy impact test—III)Masanobu Ohmori, et alii....1321
- 126 Properties of the Low-Alloy Steel Containing Cu, Ti and P.
(Study on atmospheric-corrosion-resistant high-tensile steel—I)Tadashi Nishi, et alii....1323
- 127 Fractographic Study of Plain Carbon Steel by an Electron Microscope.—Part. 2
(Study of the cold brittleness of plain carbon steel—V) ...Shōichi Nakanishi, et alius....1325
- 128 Low-Temperature Properties of Al-Killed, 2.5% Ni and 3.5% Ni Steel.
(Studies on the steel for low temperature service—I)Yuzuru Shindo, et alii....1327

- 129 Fundamental Properties of 9% Nickel Steel.
(Study on 9% nickel steel for low-temperature service—I) ... *Takuo Shiraishi, et alii*....1328
- 130 Study on Factors Affecting Properties of 9% Ni Steel.
(Study on 9% nickel steel for low-temperature service—II) *Hachirō Kobayakawa, et alii*....1331
- 131 Study on Trial Manufacture and Properties of 9% Ni Steel—Part. 1.
(Study on 9% nickel steel for low-temperature service—III) ... *Kiyohiko Kizuki, et alii*....1333
- 132 Application of 3% Cr-Mo Steel for Pinions.
(Studies on large forgings of 3% Cr-Mo steel—II) *Hiroshi Ogata, et alius*....1336
- 133 Evaluation of the Imported Heavy Shaft Forgings for Turbo-Generators. *Ryōsuke Homma, et alius*....1337
- 134 On the Fog-Quenching of Heavy Shaft Forgings for Turbo-Generators. *Kiyoshi Hori, et alii*....1340
- 135 Study on Transition Temperature of Large Rotor Forgings for a Thermal Power Generation. *Taira Nakano, et alii*....1342
- 136 Study on the Hardening Owing to Cold Working of Non-Magnetic Steel for a Turbo-Generator. *Taira Nakano, et alii*....1344
- 137 Experimental Consideration for Stability Tests of Turbine Rotors. *Katsumi Shibuya, et alii*....1345
- 138 Fire-Cracking Characteristics of Cr-Mo Cast Steel.
(Studies on the fire cracks—III) *Juroh Watanabe*....1348
- 139 Hydrogen Attack of Steels in Oil Refinery. *Masayoshi Hasegawa, et alius*....1349
- 140 On the Relation between the Fatigue Rupture and the Crystal Grain Size of Steel. *Mitsutaka Isobe, et alius*....1352
- 141 Effect of Hot Working and Heat Treatment on Austenite Grain Size. *Shyōgo Oda, et alius*....1354
- 142 Effect of Streak-Flow on the Forging and Heat Treatment.
(Study of streak-flow in steel materials—I) *Koichi Fujii, et alii*....1356
- 143 Behaviour of the Plate-Like Inclusions during Heating and in High Carbon Steel.
(The plate-like non-metallic inclusions in steel—II) *Kaichi Matsubara, et alius*....1357
- 144 On the Deoxidation Product due to Special Elements.
(The study of non-metallic inclusions—VII) *Hiroshi Kimura, et alius*....1360
- 145 On the Microscopical Structure and Chemical Composition of Inclusions in Steel. *Yosaku Koike, et alii*....1361
- 146 On the Behaviour of Non-Metallic Inclusions in the Blooming of Rimmed Steel Ingots by Klinger-Koch Method.
(Study of non-metallic inclusions in steels—II) *Yoshio Shimokawa, et alii*....1364
- 147 Effect of Non-Metallic Inclusions on Induction-Hardening Crackability. *Hachiro Homma*....1366
- 148 Comparative Test on Spring Wires of Different Stainless Steels.
(Study on spring wires of stainless steels—I) *Tatsuo Fujihara, et alius*....1369
- 149 Effect of Carbon Vanadium and Boron on Spring Wire of 16Cr-2Ni Stainless Steels.
(Study on spring wires of stainless steels—II) *Tatsuo Fujihara, et alius*....1372
- 150 Study on Austempering of 9% W-Cr-V Series Spring Materials. (Study on spring materials—VIII) *Hideji Hotta*....1374
- 151 Spheroidizing in Ball-Bearing Steel due to Isothermal Transformation. *Eiji Miyoshi, et alius*....1376

152	Hot-Extruded Ball-Bearing Steel.	<i>Manabu Ueno, et alius</i>	1377
153	On the Reliability of Material Strength of Lead Alloy Steels. (Study on the lead alloy free-cutting steels—XII)	<i>Toru Araki, et alii</i>	1379
154	Study on Free-Cutting 13 Cr Stainless Steels Containing Se.	<i>Hisashi Takada, et alius</i>	1382
155	On the Sulfide of Lead Alloy High Sulfur Free-Cutting Steels—Part. 1. (Study on lead alloy free-cutting steels—VII)	<i>Kōsai Katō, et alii</i>	1383
156	Abrasive-Wear Measurement of High-Manganese Steel Abraded by Various Ore Sands. (Study on high manganese steel—V)	<i>Yukuo Kido, et alius</i>	1386
157	Effect of Cold Working on Carbide Precipitation of Austenitic High-Manganese Steel.	<i>Toshio Saito, et alius</i>	1388
158	Effect of Heat Treatment of 12% Chromium Heat-Resisting Steels on Creep-Rupture Strength.	<i>Toshihiko Sasakura, et alius</i>	1390
159	Effect of Nitrogen on 12% Chromium Heat-Resisting Steels. (Studies on 12% chromium heat-resisting steels—XIII)	<i>Toshio Fujita, et alius</i>	1393
160	Effect of Mo, W and V on the Behavior of Carbides in 12% Cr Steel. (On carbide in 12% chromium heat-resisting steels—II)	<i>Seiji Masumoto, et alius</i>	1395
161	On High Temperature Properties of High-Strength Stainless Steels. (Studies on high-strength stainless steels—I)	<i>Toshio Fujita, et alii</i>	1396
162	Effect of Alloying Element Contents on Austenitic Heat-Resisting Steels. (Studies on austenitic heat resisting steels—I)	<i>Toshio Fujita, et alius</i>	1399
163	On the Anneal-Hardening and Deformation Temperature for 304L Type Stainless Steel.	<i>Yuzo Hosoi</i>	1401
164	Effect of Heat-Treatment on 18-8 Stainless Steel Containing Zirconium. (Study of 18-12 stainless steel containing zirconium—I)	<i>Yutaka Adachi, et alii</i>	1402
165	Influence of Melting Atmospheres on Austenite Stability and Mechanical Properties of 18-8 Stainless Steels. (Influence of melting atmospheres on various properties of 18-8 stainless steels—I)	<i>Ryohei Tanaka, et alii</i>	1405
166	Influence of Melting Atmospheres on Corrosion Resistance of 18-8 Stainless Steels. (Influence of melting atmospheres on various properties of 18-8 stainless steels—I)	<i>Rokurō Itō, et alius</i>	1407
167	Effect of N and B on Properties of 18Cr-12Ni Austenitic Stainless Steel.	<i>Yasuo Ootoguro, et alius</i>	1409
168	Effect of V, Al and Zr on Properties of 18Cr-12Ni Austenitic Stainless Steel.	<i>Ryuichi Nakagawa, et alius</i>	1411
169	Creep-Rupture Strength of 28Cr-15Ni Stainless Steels. (Studies on the heat-resisting materials for ultra-high temperature—I)	<i>Toshihiko Sasakura, et alius</i>	1414
170	Effect of Melting Procedure on Mechanical Properties of Alloy A286. (Studies on the alloy A286—V)	<i>Taro Hasegawa, et alii</i>	1416
171	Effect of Manganese on High-Temperature Properties of N-155 Alloy. (Study of heat-resisting high-manganese steel—I)	<i>Heitaro Yoshida, et alii</i>	1419
172	Effect of Al, Al+Ti and W+V+Nb on Properties of 38% Ni Heat-Resisting Alloy.	<i>Tsunao Kunou, et alii</i>	1421
173	Composition Change of Iron-Base Binary Alloys by Vaporization in Vacuum Melting.	<i>Tetsuya Watanabe, et alii</i>	1423
174	Relation between Hardenability and Solution of Carbide of High-Carbon Low-Alloy Steels.	<i>Taira Nakano, et alii</i>	1425