

THE SCIENTIFIC MONTHLY

EDITED BY J. McKEEN CATTELL

CONTENTS

Adventures of a Watermol. Professor H. L. FAIRCHILD 5

Probable Relations of Climatic Change to the Origin of the Tertiary Ape-
Man. Professor JOSEPH BARRELL 16

The Ways of Pangermany. Chancellor DAVID STARR JORDAN 27

The Present China. Dr. ALFRED C. REED 41

Instinct and the Rational Life. Professor HARRY BEAL TORREY 61

The Food Plants of the Ancient Hawaiians. Professor VAUGHAN
MCCAUGHY 75

Fossil Hunting in Texas. Dr. EDWARD L. TROXELL 81

The Progress of Science:
The Convocation-week Meeting and Columbia University; Program of the Meetings;
Scientific Items 90

THE SCIENCE PRESS

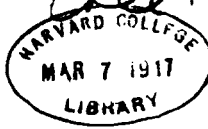
LANCASTER, PA.

GARRISON, N. Y.

NEW YORK: SUB-STATION 84

SINGLE NUMBER, 30 CENTS

YEARLY SUBSCRIPTION, \$3.00



THE SCIENTIFIC MONTHLY

EDITED BY J. McKEEN CATTELL

CONTENTS

The Miriamites. Dr. HUBERT LYMAN CLARK 97

The Evolution of Flowers. JOHN J. LOVELL 110

The Electromagnetic Theory of Light. Professor DAVID VANCE GUTHRIE 120

The Experimental Method and Sociology. Professor F. STUART CHAPIN 133

The Luck Element. Professor A. G. KELLER 145

Mental and Muscular Work. Dr. JAMES FREDERICK ROGERS 151

Milk, Sanitary and Otherwise. Dr. JOHN WADDELL 155

Geology and Public Service. Dr. GEORGE OTIS SMITH 165

Adventures of a Watermol. Professor H. L. FAIRCHILD 174

The Progress of Science :

 The New York Meeting of the American Association and the Organization of Science;
 Dr. Campbell's Presidential Address on the Nebulae before the American Association;
 Scientific Items 187

THE SCIENCE PRESS

LANCASTER, PA.

GARRISON, N. Y.

NEW YORK: SUB-STATION 84

SINGLE NUMBER, 30 CENTS

YEARLY SUBSCRIPTION, \$3.00

THE SCIENTIFIC MONTHLY

EDITED BY J. McKEEN CATTELL

CONTENTS

The Adoption of the Metric System in the United States:	
The Metric System from the Standpoint of Electrical Engineering. Professor ARTHUR E. KENNELLY	193
The Metric System from the Pan-American Standpoint. WILLIAM C. WELLS	196
The Metric System in Every-day Life. Professor H. V. ARNY	202
The Metric System from the Standpoint of the Wholesale Grocers and Canning Industry. FRED R. DRAKE	206
Wholesale Druggists and the Metric System. Dr. ADOLPH W. MILLER	210
The International Language of Weights and Measures. Dr. GEORGE F. KUNZ	215
Biology and the Nation's Food. Dr. W. J. SPILLMAN	220
Adventures of a Water-mol. Professor H. L. FAIRCHILD	226
The Experimental Method and Sociology. Professor F. STUART CHAPIN	238
Families of American Men of Science. Professor J. McKEEN CATTELL	248
The Fundamental Nature of Population. Professor SPENCER TROTTER	263
The Mississippi Gulf Three Million Years Ago. Professor EDWARD W. BERRY	274
The Progress of Science :	
The Scripps Institution for Biological Research; By-Products of the Forests; Sci- entific Items	284

THE SCIENCE PRESS

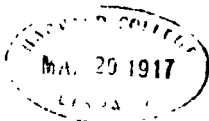
LANCASTER, PA.

GARRISON, N. Y.

NEW YORK: SUB-STATION 84

SINGLE NUMBER, 30 CENTS

YEARLY SUBSCRIPTION, \$3.00



THE SCIENTIFIC MONTHLY

EDITED BY J. McKEEN CATTELL

CONTENTS

A Californian Arboretum. Professor DOUGLAS HOUGHTON CAMPBELL . 289

Life-Insurance Problems:

 Thrift from the Life-insurance Viewpoint. E. E. BITTENHOUSE . 301

 Some Fallacies of Compulsory Health Insurance. FREDERICK L. HOFFMAN 306

 Insurance as a Basis of Social Economy. HALEY FISKE 316

 Recent Developments in the Life-insurance Field. ROBERT LYNN COX 324

 Life Insurance and Life Conservation. EUGENE LYMAN FISK . . 330

 Life Insurance and the War. S. S. HUEBNER 342

Myth and Error in the Rise of Natural History. S. E. LONGWELL . 355

Reasoning from Analogy at Zuffi. ELSIE CLEWS PARSONS 365

Lost Mountains of the Prairies. CHARLES KEYES 369

The Progress of Science :

 Archeological Work in the Mesa Verde National Park; The George Robert White Medal of Honor for Horticulture; The Council of National Defense; Scientific Items 379

THE SCIENCE PRESS

LANCASTER, PA.

GARRISON, N. Y.

NEW YORK: SUB-STATION 84

SINGLE NUMBER, 30 CENTS

YEARLY SUBSCRIPTION, \$3.00

THE SCIENTIFIC MONTHLY

EDITED BY J. McKEEN CATTELL

CONTENTS

The Fur-seals of the Pribilof Islands. Professor G. H. PARKER	385
The Scientific and Administrative Achievement of the Medical Corps of the U. S. Army. Lieutenant Colonel C. McCULLOCH, JR.	410
The Economic Saving of Human Resources. C. L. CLOSE	428
Education, Efficiency and Economy, with special reference to Mining. LANCASTER D. BURLING	438
Science and Modern Civilization. Professor MAYNARD M. METCALF	446
The New Science of Plant Sociology. DR. ROLAND M. HARPER	456
Memories of the Smithsonian. DR. MARCUS BENJAMIN	461
The Progress of Science :	
Book of the Opening of the Rice Institute; Imported and Native Woods used for Dye Materials; Fighting Australian Aphids with Maine Flies; Scientific Items	473

THE SCIENCE PRESS

LANCASTER, PA.

GARRISON, N. Y.

NEW YORK: SUB-STATION 84

SINGLE NUMBER, 30 CENTS

YEARLY SUBSCRIPTION, \$2.00

June

LIBRARY

THE SCIENTIFIC MONTHLY

EDITED BY J. McKEEN CATTELL

CONTENTS

A Pilgrimage to the Home of Confucius. WALTER K. FISHER	481
Demonology and Bacteriology in Medicine. DR. JONATHAN WRIGHT	494
The Real in Science. Professor JAMES BYRNIE SHAW	509
"Members of One Another." Professor B. W. KUNKEL	534
The Russian Village and the War. ROBERT E. BLAKE	544
Flora of the Vicinity of New York. NORMAN TAYLOR	548
Two Historic World-pestilences robbed of their Terrors by Modern Sanitation. D. GREENBERG	554
The Progress of Science:	
Work of the National Research Council; Inland Fish and Game as Food Supply;	
Welfare Work in British Munition Factories; Scientific Items	567
Index to Volume IV	573

THE SCIENCE PRESS

LANCASTER, PA.

GARRISON, N. Y.

NEW YORK: SUB-STATION 84

SINGLE NUMBER, 30 CENTS

YEARLY SUBSCRIPTION, \$3.00

INDEX

NAMES OF CONTRIBUTORS ARE PRINTED IN SMALL CAPITALS

- Adventures of a Watermol, H. L. FAIRCHILD, 5, 174, 226
- American, Association for the Advancement of Science, Convocation-week Meeting and Columbia University, 90; Program of the Meetings, 92; and the Organization of Science, 187; Conference of Section I, 193; Men of Science, Families of, J. MCKEEN CATTELL, 248
- Analogy, Reasoning from, at Zuzi, ELSIE CLEWS PARSONS, 365
- Ape-Man, Tertiary, Probable Relations of Climatic Change to the Origin of the, JOSEPH BARRELL, 16
- Aphids, Australian, fighting with Maine Flies, 478
- Arboretum, A Californian, DOUGLAS HOUGHTON CAMPBELL, 289
- Archeological Work in the Mesa Verde National Park, 379
- Army, United States, The Scientific and Administrative Achievement of the Medical Corps of the, CHAMPE C. MCCULLOCH, JR., 410
- ARNY, H. V., The Metric System in Every-day Life, 202
- Australian Aphids, fighting with Maine Flies, 478
- Bacteriology and Demonology in Medicine, JONATHAN WRIGHT, 494
- BARRELL, JOSEPH, Probable Relations of Climatic Change to the Origin of the Tertiary Ape-Man, 16
- BENJAMIN, MARCUS, Memories of the Smithsonian, 461
- BERRY, EDWARD W., The Mississippi Gulf Three Million Years Ago, 274
- Biological Research, Scripps Institution for, 285
- Biology and the Nation's Food, W. J. SPILLMAN, 220
- BLAKE, ROBERT E., The Russian Village and the War, 544
- BURLING, LANCASTER D., Education, Efficiency and Economy, with special reference to Mining, 438
- By-products of the Forests, 286
- Californian Arboretum, A, DOUGLAS Californian Arboretum, 289
- Campbell, W. W., Presidential Address on the Nebulæ before the American Association, 191
- Canning Industry and Wholesale Grocers, The Metric System from the Standpoint of, FRED. B. DRAKE, 208
- CATTELL, J. MCKEEN, Families of American Men of Science, 248
- CHAPIN, F. STUART, The Experimental Method and Sociology, 133, 238
- China, The Present, ALFRED C. REED, 41
- Civilization, Modern, and Science, MAYNARD M. METCALF, 446
- CLARK, HUBERT LYMAN, The Miriamites, 97
- Climatic Change, Probable Relations to the Origin of the Tertiary Ape-Man, JOSEPH BARRELL, 16
- CLOSE, C. L., The Economic Saving of Human Resources, 428
- Compulsory Health Insurance, Some Fallacies of, FREDERICK L. HOFFMAN, 306
- Confucius, A Pilgrimage to the Home of, WALTER K. FISHER, 481
- Conservation, Life, and Life-insurance, EUGENE LYMAN FISK, 330
- Council of National Defense, 384; Research, 567
- COX, ROBERT LYNN, Recent Developments in the Life-insurance Field, 324
- Demonology and Bacteriology in Medicine, JONATHAN WRIGHT, 494
- DRAKE, FRED. B., The Metric System from the Standpoint of the Wholesale Grocers and Canning Industry, 208
- Druggists, Wholesale, and the Metric System, ABOLPH W. MILLER, 210
- Dye Materials, Native and Imported Woods used for, 476
- Economic Saving of Human Resources, C. L. CLOSE, 428
- Economy, Social, Life-insurance as a Basis of, HALEY FISKE, 316
- Education and Efficiency, with special reference to Mining, LANCASTER D. BURLING, 438
- Electrical Engineering, The Metric System from the Standpoint of, ARTHUR E. KENNELLY, 193
- Electromagnetic Theory of Light, DAVID VANCE GUTHRIE, 120

- Every-day Life, The Metric System in, H. V. ARNY, 202
- Evolution of Flowers, JOHN H. LOVELL, 110
- Experimental Method and Sociology, F. STUART CHAPIN, 133, 238
- FAIRCHILD, H. L., Adventures of a Watermol, 5, 174, 226
- Families of American Men of Science, J. MCKEEN CATTELL, 248
- FISHER, WALTER K., A Pilgrimage to the Home of Confucius, 481
- FISK, EUGENE LYMAN, Life-insurance and Life Conservation, 330
- FISKE, HALEY, Life-insurance as a Basis of Social Economy, 316
- Flies, Maine, fighting Australian Aphids with, 478
- Flora of the Vicinity of New York, NORMAN TAYLOR, 548
- Flowers, The Evolution of, JOHN H. LOVELL, 110
- Food, Plants of the Ancient Hawaiians, VAUGHAN MACCAUGHEY, 75; The Nation's, and Biology, W. J. SPILLMAN, 220; Supply, 569
- Forests, By-products of the, 286
- Fossil Hunting in Texas, EDWARD L. TROXELL, 81
- Fur-seals of the Pribiloff Islands, G. H. PARKER, 385
- Geology and Public Service, GEORGE OTIS SMITH, 165
- GREENBERG, D., Two Historic World Pestilences robbed of their Terrors by Modern Sanitation, 554
- Grocers, Wholesale, and Canning Industry, The Metric System from the Standpoint of, FRED. R. DRAKE, 206
- GUTHRIE, DAVID VANCE, The Electromagnetic Theory of Light, 120
- HARPER, ROLAND M., The New Science of Plant Sociology, 456
- Hawaiians, Ancient, The Food Plants of the, VAUGHAN MACCAUGHEY, 75
- HOFFMAN, FREDERICK L., Some Fallacies of Compulsory Health Insurance, 306
- HUEBNER, S. S., Life-insurance and the War, 342
- Human Resources, Economic Saving of, C. L. CLOSE, 428
- Imported and Native Woods used for Dye Materials, 476
- Instinct and the Rational Life, HARRY BEAL TORREY, 61
- Insurance, Health, Some Fallacies of Compulsory, FREDERICK L. HOFFMAN, 306; Life, as a Basis of Social Economy, HALEY FISKE, 316; Life, and Life Conservation, EUGENE LYMAN FISK, 330
- International Language of Weights and Measures, GEORGE F. KUNZ, 215
- JORDAN, DAVID STARR, The Ways of Pangermany, 27
- KELLER, A. G., The Luck Element, 145
- KENNELLY, ARTHUR E., The Metric System from the Standpoint of Electrical Engineering, 193
- KEYES, CHARLES, Lost Mountains of the Prairies, 369
- KUNKEL, B. W., "Members One of Another," 534
- KUNZ, GEORGE F., The International Language of Weights and Measures, 215
- Life-insurance, Problems, 301; Thrift from the Viewpoint of, ELMER E. RITTENHOUSE, 301; Some Fallacies of Compulsory Health Insurance, FREDERICK L. HOFFMAN, 306; as a Basis of Social Economy, HALEY FISKE, 316; Recent Developments in the Field of, ROBERT LYNN COX, 324; and Life Conservation, EUGENE LYMAN FISK, 330; and the War, S. S. HUEBNER, 342
- Light, The Electromagnetic Theory of, DAVID VANCE GUTHRIE, 120
- LONGWELL, S. E., Myth and Error in the Rise of Natural History, 355
- Lost Mountains of the Prairies, CHARLES KEYES, 369
- LOVELL, JOHN H., The Evolution of Flowers, 110
- Luck Element, A. G. KELLER, 145
- MACCAUGHEY, VAUGHAN, The Food Plants of the Ancient Hawaiians, 75
- MCCULLOCH, CHAMPE C., JR., The Scientific and Administrative Achievement of the Medical Corps of the United States Army, 410
- Measures, and Weights, International Language of, GEORGE F. KUNZ, 215
- Medical Corps of the United States Army, The Scientific and Administrative Achievement of the, CHAMPE C. MCCULLOCH, JR., 410
- Medicine, Demonology and Bacteriology in, JONATHAN WRIGHT, 494
- Members One of Another, B. W. KUNKEL, 534
- Memories of the Smithsonian, MARCUS BENJAMIN, 461
- Mental and Muscular Work, JAMES FREDERICK ROGERS, 151
- Mesa Verde National Park, Archeological Work in, 379
- METCALF, MAYNARD M., Science and Modern Civilization, 446
- Metric System, The Adoption of, in the United States, 193; from the Standpoint of Electrical Engineering, AR-

- THUR E. KENNELLY, 193; from the Pan-American Standpoint, WILLIAM C. WELLS, 196; in *Every-day Life*, H. V. ARNY, 202; from the Standpoint of the Wholesale Grocers and Canning Industry, FRED. R. DRAKE, 206; and Wholesale Druggists, ADOLPH W. MILLER, 210; International Language of, GEORGE F. KUNZ, 215
- Milk, Sanitary and Otherwise, JOHN WADDELL, 155
- MILLER, ADOLPH W., Wholesale Druggists and the Metric System, 210
- Mining, Education, Efficiency and Economy, with special reference to, LANCASTER D. BURLING, 438
- Miriamites, HUBERT LYMAN CLARK, 97
- Mississippi Gulf Three Million Years Ago, EDWARD W. BERRY, 274
- Modern Civilization and Science, MAYNARD M. METCALF, 446
- Mountains, Lost, of the Prairies, CHARLES KEYES, 369
- Muscular and Mental Work, JAMES FREDERICK ROGERS, 151
- Myth and Error in the Rise of Natural History, S. E. LONGWELL, 355
- National Defense, Council of, 384; Research, 567
- Nation's Food, and Biology, W. J. SPILLMAN, 220
- Natural History, Myth and Error in the Rise of, S. E. LONGWELL, 355
- New York, Flora of the Vicinity of, NORMAN TAYLOR, 548
- One of Another, Members, B. W. KUNKEL, 534
- Pan-American Standpoint, The Metric System from, WILLIAM C. WELLS, 196
- Pangermany, The Ways of, DAVID STARR JORDAN, 27
- PARKER, G. H., The Fur-seals of the Pribiloff Islands, 385
- PARSONS, ELSIE CLEWS, Reasoning from Analogy at Zuffi, 365
- Pestilences, Two Historic World-robbed of their Terrors by Modern Sanitation, D. GREENBERG, 554
- Pilgrimage to the Home of Confucius, WALTER K. FISHER, 481
- Plant Sociology, The New Science of, ROLAND M. HARPER, 456
- Population, The Fundamental Nature of, SPENCER TROTTER, 263
- Prairies, Lost Mountains of the, CHARLES KEYES, 369
- Pribiloff Islands, The Fur-seals of the, G. H. PARKER, 385
- Progress of Science, 90, 187, 285, 379, 473, 567
- Public Service and Geology, GEORGE OTIS SMITH, 165
- Rational Life and Instinct, HARRY BEAL TORREY, 61
- Real in Science, JAMES BYRNIE SHAW, 509
- Reasoning from Analogy at Zuffi, ELSIE CLEWS PARSONS, 365
- Recent Developments in the Life-insurance Field, ROBERT LYNN COX, 324
- REED, ALFRED C., The Present China, 41
- Resources, Human, Economic Saving of, C. L. CLOSE, 428
- Rice Institute, Book of the Opening of the, 473
- RITTENHOUSE, ELMER E., Thrift from the Life-insurance Viewpoint, 301
- ROGERS, JAMES FREDERICK, Mental and Muscular Work, 151
- Russian Village and the War, ROBERT E. BLAKE, 544
- Sanitary Milk and Otherwise, JOHN WADDELL, 155
- Sanitation, Modern, Two Historic World-Pestilences robbed of their Terrors by, D. GREENBERG, 554
- Science, The Progress of, 90, 187, 285, 379, 473, 567; Families of American Men of, J. MCKEEN CATTELL, 248; and Modern Civilization, MAYNARD M. METCALF, 446; New, of Plant Sociology, ROLAND M. HARPER, 456; The Real in, JAMES BYRNIE SHAW, 509
- Scientific, Items, 96, 192, 288, 384, 480, 572; and Administrative Achievement of the Medical Corps of the United States Army, CHAMPE C. MCCULLOCH, JR., 410
- Scripps Institution for Biological Research, 285
- Service, Public, and Geology, GEORGE OTIS SMITH, 165
- SHAW, JAMES BYRNIE, The Real in Science, 509
- SMITH, GEORGE OTIS, Geology and Public Service, 165
- Smithsonian, Memories of the, MARCUS BENJAMIN, 461
- Social Economy, Life Insurance as a Basis of, HALEY FISKE, 316
- Sociology and the Experimental Method, F. STUART CHAPIN, 133, 238; Plant, The New Science of, ROLAND M. HARPER, 456
- SPILLMAN, W. J., Biology and the Nation's Food, 220
- TAYLOR, NORMAN, Flora of the Vicinity of New York, 548
- Tertiary Ape-Man, Probable Relations of Climatic Change to the Origin of the, JOSEPH BARRELL, 16

- Texas, Fossil Hunting in, EDWARD L. TROXELL, 81
- Thrift from the Life-insurance Viewpoint, ELMER E. RITTENHOUSE, 301
- TORREY, HARRY BEAL, Instinct and the Rational Life, 61
- TROTTER, SPENCER, The Fundamental Nature of Population, 263
- TROXELL, EDWARD L., Fossil Hunting in Texas, 81
- Two Historic World Pestilences robbed of their Terrors by Modern Sanitation, D. GREENBERG, 554
- WADDELL, JOHN, Milk, Sanitary and Otherwise, 155
- War, Life-insurance and the, S. S. HUEBNER, 342; the Russian Village and the, ROBERT E. BLAKE, 544
- Watermol, Adventures of a, H. L. FAIRCHILD, 5, 174, 226
- Ways of Pangermany, DAVID STARR JORDAN, 27
- Weights and Measures, International Language of, GEORGE F. KUNZ, 215
- Welfare Work in British Munition Factories, 571
- WELLS, WILLIAM C., The Metric System from the Pan-American Standpoint, 196
- White, George Robert, Medal of Honor for Horticulture, 385
- Woods, Imported and Native, used for Dye Materials, 476
- Work, Mental and Muscular, JAMES FREDERICK ROGERS, 151
- WRIGHT, JONATHAN, Demonology and Bacteriology in Medicine, 494
- Zuñi, Reasoning from Analogy at, ELSIE CLEWS PARSONS, 365