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THE ORIGINS OF ENGINEERING¹

By Professor DUGALD C. JACKSON

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

It is a romance—the story which relates the gradual unfolding of scientific discovery and invention and their influence on the rise of social organization. It is a romance, and yet it is real. The romance embraces the transfer of physical labor from human shoulders onto machines and the increase of emphasis on human intelligence in contrast with brutality; which is the tale of the origins and growth of engineering.

The story wanders from quarter of the globe to quarter of the globe—from Mesopotamia and Egypt to China, Persia, Arabia, Phoenicia, Greece, Rome, Britain, the European continent, Africa, North America, South America—from race to race, from peoples to peoples, from the latter part of the Paleolithic age of man to the present time. In early ages even slight contacts by means of pilgrims and adventurous trad-

ers resulted in the retailing and circulation of romantic stories of conveniences in the possession of distant alien peoples. Thus one area crudely copied and then perhaps improved upon the deeds of other areas. Where two distantly alien peoples grew in organization simultaneously but without contact, the urge for convenience sometimes resulted in simultaneous inventions of equivalent natures. Ambition and craving for convenience seem to sow the atmosphere with ideas which simultaneously may be reached after in different quarters of the world.

Instinct alone was sufficient to inspire the prehistoric man to choose a cave for his abode in temperate zones or to arrange a grass-and-leaf shelter in tropical areas. Those things are done by the dumb beasts through the exercise of instinct. Perhaps to instinct may be ascribed the first use of fire by prehistoric man. It possibly did not require creative intellect for the cave man to build a fire in the cave and to roast

¹ Address as vice-president and chairman of Section M, American Association for the Advancement of Science, Boston, December 30, 1933.

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