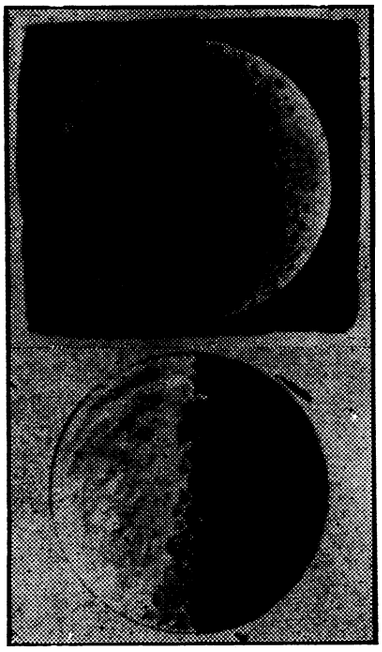
Classics of Science: The Mountains of The Moon



THE MOON, a reproduction of Galileo's own drawings showing the craters on the lighted side.

The telescopes devised by Galileo were of the type now used as opera and field glasses. His largest instrument has a magnification of about 33 diameters. So powerful a glass, however, is not necessary to see the moon's craters as he describes them, and an ordinary field glass will do very well.

SIDEREUS NUNCIUS (THE SIDEREAL MESSENGER), by Galileo Galilei, Venice, 1610; Tr. by Edward Stafford Carlos, London, 1880.

Ruggedness of Surface

Let me speak first of the surface of the Moon, which is turned towards us. For the sake of being understood more easily, I distinguish two parts in it, which I call respectively the brighter and the darker. The brighter part seems to surround and pervade the whole hemisphere; but the darker part, like a sort of cloud, discolours the Moon's surface and makes it appear covered with spots. Now these spots, as they are somewhat dark and of considerable size, are plain to every one, and every age has seen them, wherefore I shall call them *great* or *ancient* spots, to distinguish them from other spots, smaller in size, but so thickly scattered that they sprinkle the whole surface of the Moon, but especially the brighter portion of it. These spots have never been observed by any one before me; and from my observations of them, often repeated, I have been led to that opinion which I have expressed, namely, that I feel sure that the surface of the Moon is not perfectly smooth, free from inequalities and exactly spherical, as a large school of philosophers considers with regard to the Moon and the other heavenly bodies, but that, on the contrary, it is full of inequalities, uneven, full of hollows and protuberances, just like the surface of the Earth itself, which is varied everywhere by lofty mountains and deep valleys.

Lunar Mountains and Valleys

The appearances from which we may gather these conclusions are of the following nature:—On the fourth or fifth day after new-moon, when the Moon presents itself to us with bright horns, the boundary which divides the part in shadow from the enlightened part does not extend continuously in an ellipse, as would happen in the case of a perfectly spherical body, but it is marked out by an irregular, uneven, and very wavy line, as represented in the figure given, for several bright excrescences, as they may be called, extend beyond the boundary of light and shadow into the dark part, and on the other hand pieces of shadow encroach upon the light:—nay, even a great quantity of small blackish spots, altogether separated from the dark part, sprinkle everywhere almost the whole space which is at the time flooded with the Sun's light, with the exception of that part alone which is occupied by the great and ancient spots. I have noticed that the small spots just mentioned have this common characteristic always and in every case, that they have the dark part towards the Sun's position, and on the side away from the Sun they have brighter boundaries, as if they were crowned with shining summits. Now we have an appearance quite similar on the Earth about sunrise, when we behold the valleys, not yet flooded with light, but the mountains surrounding them on the side opposite to the Sun already ablaze with the splendour of his beams; and just as the shadows in the hollows of the Earth diminish in size as the Sun rises higher, so also these spots on the Moon lose their blackness as the illuminated part grows larger and larger. Again, not only are the boundaries of light and shadow in the Moon seen to be uneven

(*Just turn the page*)

The House Un-beautiful

Quotation from ARTIFEX or The Future of Craftsmanship—John Gloag—Dutton.

In acquiring a multitude of superficial attainments we have allowed many of the faculties of our forefathers to lie dormant. True, we criticise and improve a number of things they ignored, sometimes disastrously, but we do not and quite often we cannot criticise our possessions as a seventeenth century householder would have criticised them. When town and country craftsmen made furniture by hand there was for its form an accepted character, a recognized idea of appropriate embellishment and a widespread knowledge of what the product of good workmanship should look like and feel like, and the attributes one should expect a piece to have after certain sums had rewarded the labor of the craftsman; in short, there was a real understanding of the meaning of quality in workmanship and material. How many of us possess that elementary critical faculty now? How many people can look at a piece of furniture made today and give a fair estimate of its worth from the point of view of workmanship? No, that sort of thing is left to the "experts" and what was everyday thinking in the life of England or the American colonies a couple of centuries ago is now regarded as a mystery, lit only by the lamp of expert knowledge. . . .

The atrophied critical faculty of the average man or woman is best demonstrated by their homes, by the host of ugly, useless, unfit and ill-made articles with which their rooms are crowded. These things are sold to them by advertisements that are not always framed in the spirit of commercial piety that produced the slogan of "Truth in Advertising." And it is the habit, three generations old, of relying on the views of others which makes the householder accept badly-constructed and ugly things.

Unless the great mass of people is taught to think, and consequently to criticise, technical education will be handicapped, for although it may improve craftsmanship, it cannot create the demand for well-made things that must sustain good craftsmanship.

Science News-Letter, October 22, 1927

A new hotel and office building in Cleveland is 555 feet high, the same height as the Washington Monument.

The formulae used by the Egyptians to color bronzes are still used by French, British and American mints, an electro-chemist declares.