

[644] A counsel often offered to management is, take the scientific men more fully into confidence as to a company's plans and needs; also do not leave carefully worked out proposals from them quiet in the files, or floundering in red tape, instead of soon informing the proponent why it cannot be adopted, or how it might perhaps be modified.<sup>655, 6</sup> Be cooperative, permissive, democratic toward the inventive team, advises Thomas,<sup>657</sup> give credit, and don't laugh at their ideas, nor quickly squelch them, nor demand proof at an early stage. Allow the man privacy, he adds, freedom from interruptions, and a chance to attend conventions. Flexibility in the top administration is needed, and an active search for more creativity.

[645] A rather wide freedom of inquiry is needed in invention, and still more in scientific research, say Hebb & Martin,<sup>658</sup> though it might be abused by a small man. The great Coolidge of GE was quoted: "We give each scientist all the freedom that he is capable of using." But some direction is needed, especially for team work between men of different sciences. Many want the day to day stimulation of others, or need orders. But freedom or a private office or a higher salary, become status symbols, so that a natural underling may strive for them excessively, and waste them if wangled. If self-discipline be found lacking, a scientist's colleagues may straighten him out better than a boss.<sup>659</sup> Perfectionism, seeking the elegant, definitive solution (§ 598) at whatever length, is a trait of scientists which Dean Brown says<sup>660</sup> must be accommodated to, like their tendency to resist authority. Dr. Bush says<sup>662</sup> that the title of "research director" "is a misnomer—he seldom directs anyone. He is nearer to a catalyst", or broker, bringing about hopeful combinations between men with bright ideas, who may be humble young researchers, with a staff which must be heartily for the idea, and the production, sales and financial authorities who must also be brought into agreement on it.

[646] To suit the above discussed drives of the scientist-inventor, the one-man hierarchic system of simple industry needs to be changed to a freer, colleague system, says Marcson,<sup>664</sup> allowing more chance for peculiar ideas. Some laboratories, says Harbison,<sup>666</sup> advance men on a "parallel ladder" system, recognizing two separate kinds of achievement, creation and administration. Also some scientists are unhappy if they cannot teach too, so a Government laboratory lets them.

[647] Nelles mentions<sup>669</sup> some laboratory poisons to creativity, including large burdens of administrative work, or keeping a man too long on a small problem, or ignoring his proposals. If he leaves for a spell of better pay in sales, he is ruined for invention.

[648] A group of inventions for inventors deserves mention and support—developing devices to revise drawings, and to turn them into machined parts, as Price<sup>660</sup> proposed and Itek Cp. is planning.