SCIENCE.

FRIDAY, AUGUST 6, 1886.

COMMENT AND CRITICISM.

A RECENT NUMBER of the Philadelphia *American* has an article on 'Unrecognized proprietorships,' pointing out the difficulties encountered in 'rewarding men of the most beneficent inventiveness,' and recounting with many illustrations how seldom the originator of a new device reaps a fortune, while those who come after and make new adaptations of the original artifice become prosperous. Wyatt invented roller-spinning, and Hargreaves invented the spinning-jenny; but Arkwright appropriated both, and was the only 'successful' man of the three. On reading further, it is with surprise that we find 'Myer,' whose 'weather-charts have saved thousands of dollars,' classed, not with the successful Arkwrights, but with the neglected Wyatts and Hargreaves, where he is notoriously out of place. It is difficult to say in whose mind the idea of daily weather-charts first took practical shape; but the idea was fully carried out in Europe several years before its introduction here, if we except the charts with which Professor Henry used to entertain visitors to the Smithsonian in 1859 or 1860, and which might have early grown into a systematic service had it not been for the interruptions of 1861. Besides this, Professor Cleveland Abbe had, with the assistance of local enterprise, established an actual, continuous, and successful weather-service in Cincinnati a year before weather-prediction was undertaken by the government. It was essentially this Cincinnati service that General Myer, with his imperious executive ability and the support of the government treasury, appropriated and expanded into a national service; taking not only its methods, but its director, who has ever since been, even though anonymously, the leading scientific member of the weather-bureau. The *American's* article is an example of the very neglect that it laments.

A SON OF CHARLES GOODYEAR, the well-known inventor, has lately felt it to be his duty to make public some particulars in respect to the origin of the india-rubber patents, which, if not hitherto unknown, have been generally forgotten by those who participate in the great advantages which have followed the wonderful expansion of india-rubber manufactures. He wishes particularly to controvert the idea that his father's discovery was accidental; and for this purpose he publishes his father's account of the various steps which were taken by him as far back as 1838 to ascertain what modifications could be made in 'the material,' as he was accustomed to call the gum-elastic, in order to adapt its peculiar properties to the greater service of mankind. The inventor's own narrative was printed in 1849, in a very few impressions, upon thin sheets of a tissue made of cotton, and shows conclusively by what prolonged, intelligent, painstaking endeavors he reached the processes which are known as 'vulcanization.' Few persons are aware of the great changes which were introduced by these discoveries, or of the constant increase in india-rubber manufactures. In 1870 the imports of the crude material were five million pounds; in 1885 they were twenty-five millions.

The narrative from which we draw these particulars also calls attention to the fact that Goodyear at an early day foresaw most of the innumerable applications which were destined to follow the promulgation of his process. There is a circular of his, which was issued in 1844, announcing the invention or discovery of 'a metallic gum-elastic composition,' enumerating its properties and its possible uses, and inviting 'the most searching investigation and the most severe trial.' In the light of all that has followed, the prophetic sagacity of the inventor is as noteworthy as his inventive power. It is a pity that a life arduously devoted to the advancement of an idea which was fertile in utilities should have been so much depressed at one stage by penury, at another by extreme ill health, and again by vexatious and almost interminable litigations. The final decision of the U. S. supreme court, confirming Goodyear's claims, was given four years after the patent had expired, and eight years after his death.

DR. M. A. VEEDER of Lyons, N.Y., has sent a letter to the Rochester *Democrat and chronicle*

(July 21) on 'The significance of coincident weather-conditions,' in which he points out that the recent tornadoes in Kansas City and Madrid were nearly simultaneous, that the late 'sirocco' in Dakota accompanied intense heat in southern Europe, and that many other examples of corresponding weather may be found in widely separated localities. From this basis he concludes, without any sufficient examination of the dissimilar weather that so generally prevails in widely separated localities, that "the common cause which originates wide-spread atmospheric conditions of exceptional character . . . can be none other than variations in the condition of the sun." This can hardly mean that the appearance of a spot on the sun at once brings forth tornadoes on the earth: tornadoes are known to arise under much more local conditions; and the coincidence of their occurrence in Kansas and Spain is most trivial when it is recollected that the large disturbances in which the tornadoes spring up probably came from remote beginnings, unequally distant in time and place from these points of action. The coincidence is especially trivial in view of the great amount of non-coincidence it has to balance. Yet if this be not the meaning, the suggestion is simply a vague truism, of no value from its very antiquity and indefiniteness. No one will deny that the sun is at the bottom of all our weather-changes; but who will explain the full control that it exerts, and follow the process from beginning to end?

Theories of this kind have a remarkable resemblance. They pass at once from near effect to a remote cause, impatiently bridging over with wide-spanning assertions a whole world of process that lies between. They fail to see behind the immediate facts, and discover the long train of events leading up to them. They represent the theory of special creations on the inorganic side of nature. They always include a convenient corollary of about this form: "the disturbing influence due to changes in the condition of the sun may be modified to some extent by local conditions, so that it will not always manifest itself in the same way in every part of the earth." What, with an entire lack of definition of the sun's disturbing influence, a complete assortment of 'local conditions' on the earth, and a glorious variety in our weather, coincidences may be found without limit. Finally, there is the unfailing presumption of novelty. "Studied in this way, meteorology becomes a science. The mere collection of miscellaneous facts without reference to underlying causes gives no insight, and reaches no conclusion;" but the new theory "may serve at least to direct our inquiries, and may open up new and unexpected fields of research" — just as if the ideas of his letter had not been written over and over again, until their truth and error are almost as old as the beautiful hills around Dr. Veeder's home!

THE POISONING of 143 persons in Michigan, followed by a similar accident in Charleston, Ill., by which fifty persons were made sick, both attacks being attributed to ice-cream, has incited chemists throughout the country to examine critically the ingredients employed, in order to discover if possible which one is accountable for the poisonous effects. As has already been stated in *Science*, Professor Vaughan of Michigan charges it upon tyrotoxicon, a new poison which he has discovered, and which he believes to be produced during the decomposition of milk. Professor Bartley of the L. I. college hospital has investigated a number of cases, and gives as his opinion that the deleterious effects produced in these cases of poisoning by ice-cream is due to the gelatine which is now largely employed by manufacturers of ice-cream to give body to their product. If this gelatine is of poor quality it readily undergoes decomposition. Dr. P. A. Morrow, in the *Medical record*, July 24, 1886, refers the poisonous effects to the flavoring extract, and finds that in all the reported cases vanilla has been used for this purpose. He has found a number of references to similar poisoning-cases in French and German literature, which toxic phenomena have been spoken of as 'vanillism.' In Europe for years the vanilla used in flavoring ices and pastries has been recognized as in some cases poisonous. Orfila more than thirty years ago recorded such cases. Whether these poisonous effects are due to some principle in the vanilla bean itself, or to cardol, which is an oil used as a coating to prevent the deterioration of the bean, or to the too early gathering of the pods, is still a matter of dispute. It is to be hoped that the cause of the frequently occurring poisonings may be soon determined on, that ice-cream may not cease to be a part of the bountiful feasts provided at church picnics.