

development of its resources and the gathering of its riches. But the wealth lies deep down, and is only indicated by the first labours of the early pioneers. Newton, following these, unites their beginnings into a systematic exploration, and sinks the main shaft which reaches the lode of rich ore. He opens out the wealth of the mine and marks out the work for his followers. But many difficulties had to be overcome, much united effort and a vast organisation of labour were required, in order to develop to the full Newton's scheme, and to raise the great treasure which he had reached. This was not done until the end of the last century, when Laplace collected, arranged, and condensed the work of French and English mathematicians and observers into a picture of the universe. A variety of circumstances had combined to make the French capital the place above all others where the means and materials for the development of the great work could be most easily procured. Let us glance for a moment at the different factors in operation during the eighteenth century which contributed to the great achievement.

9.
Laplace's
work.

Whilst Newton was labouring privately and almost unassisted¹ at the greatest scientific work produced in

were not destined to be fulfilled. It is neither to the technical part of his method, nor to the details of his view of the nature and progress of science, that his great fame is justly owing. His merits are of another kind. They belong to the spirit rather than to the positive precepts of his philosophy."

¹ It has been stated that Newton, not knowing of Norwood's approximately correct determination

of the length of a degree in 1635 (published in his 'Seaman's Practice' in 1637), but relying on the old figure of sixty miles for a degree of latitude (confirmed by Ed. Wright, Cambridge, 1610), was led away from the right supposition, which he entertained as far back as 1665, regarding the moon's orbit, and had to wait for Picard's figures (ascertained about 1669, published in France about 1672, and in the