

retouches, he erases. But then they are the thousand blows of the hammer which impart to the forged object its form and value. Tennyson possesses instinctively the genius of harmony of words. He imitates all with his verses, from the neighing and galloping of steeds, the sharp dry snap of the guitar, the joyous vibration of bells, the dying away of echoes, the sigh of the waves as they kiss the beach: all the sounds of living nature, from the groaning thunder to the chirping of the grasshopper.

WHEREVER Spain has truly dominated, she has left manners stationary and traditions untouched. This is more evident still in the mother country itself, where Spaniards unite all the miseries to all the grandeurs. It is still full middle age in the Iberian Peninsula. The houses are built the same as under Philippe II., and the windows are protected with railings of the same model as during the domination of the Moors. But in the past the manners of the people were in harmony with its institutions; now that harmony exists no more; there is a permanent antagonism between what Spaniards wish to be and what they can be. So thinks M. Quesnel. It is not in sitting under the orange-trees at Cadiz, or the laurel-roses of Seville, that Spain can be known. The towns everywhere are at all times an imperfect mirror of a nation's social life. A truer test is to mix among the agricultural population, the artisan and the small-proprietor classes of the provinces. Again, it is very difficult to appreciate the history of a people where changes are so sudden, and revolutions, *coups d'état* and restorations succeed without end—and without reason: where events march as rapidly and as irregularly as a drama by Lope de Vega.

Spain is not a kingdom, but a combination of several provinces slenderly roped together and full of dislikes and jealousies. Neither is Madrid a capital in the sense of other capitals; it is one of the Spains within Spain, a centre for intrigues, place-hunters and adventurers in every walk and grade of life, and from all parts of the provinces. Pleasure, smoking, and making love are the chief businesses in Spain. Every Spaniard who has neither Jewish nor Moorish blood in his veins is an *hidalgo*; hence why the shepherds of Catalonia are so proud of their birth. It explains also why the Andalusians are so proud, where the humblest peasant or miner, when he has his slouched hat cocked over one ear and his *faja*, or red silk scarf, round his waist, feels himself to be a prince. If he met a lady he would, like a Raleigh, spread his mantle on the ground for her feet.

The Spaniard's contempt for life makes him a brave soldier, but a cruel, pitiless man. He is cruel towards animals from his cradle; he will often bite the ears of his mule, or prick it with his stiletto, if it gets stubborn. He replies, "they are not Christians,"—*no son Cristianos*. It was this spirit made Señor burn Jews and heretics. The Spaniards are a brave people, but paradoxical; the immortal type of Don Quixote lives in them still. The most constant preoccupation of the labourer and the artisan is to escape the conscription; but once soldiers they are brave. Few Spanish women know how to write correctly; but they make good mothers and faithful wives: are so brave, so good-humoured and merry, that look but in their pretty laughing faces and you forget all defects.

M. JARNÉVAL, in his account of the Coreans, states the inhabitants ignore umbrellas; but, in order to preserve their woven hair hats from the rain, they wear a hood umbrella without handle, made of oiled paper. It opens over the hat, and is kept in position by strings. The shower past, the wearer puts the folded hood up his sleeve or into his boot. The Coreans, the author says, were the discoverers of the famous China ink and also of a special paper, largely employed in the East, called "Corean." This paper is also made into waterproof garments, and owes its quality of impermeability to a liquid obtained from an unknown plant in the interior of the country. Before a man marries, his mother visits his intended to ascertain that she is neither old, blind, humpbacked or crippled. The *fiancée* presents a suit of clothes to her betrothed; his mother examines them minutely, and, if she sees they are well stitched, concludes the girl will make a good wife.

FRANCE endows a school at Athens, as she does at Rome, to which she sends the best prize pupils of her lyceums to finish their artistic or literary studies. That at Athens has paid at least, as it gave the world "Grèce Contemporaine," the masterwork of a once student, Edmond About. He impressed on the imagination that Greece, since it was snatched from Turkey as a brand from the burning, had become simply the headquarters of bandits to take the money or the life of those travellers who repaired to that classic land, impelled by their classical reminiscences. The more the roads were opened up, About hinted, the greater the facilities afforded to the bandits to operate. M. Bikelos has published "De Nicopolis à Olympie," a collection of letters written on Greece of to-day. It is the answer, by facts, to About's imaginings. He states all is changed; the voyager in travelling through the Kingdom of Greece has no want now of an escort; brigands have disappeared; the country is as safe as the boulevards of Paris. Greece is even adopting English fashions of dress. More important: the Athenians have relinquished their day-dream of possessing Constantinople; the modern seven sages of Greece no longer cherish the chimera of another Greek empire, with Byzantium for capital. That said, the author demands from Europe all the aid science, commerce and good sense can accord, so as to enable her to take her modest rank among the nations, not of the East, but of the West.

In the novels of Balzac and his disciple Zola, although they be terribly "tuffy," they are laid down on so methodic lines and unfolded with such clearness that the reader is never fatigued. The contrary is just the case with the reigning sensational novel, "Le Guerre et la Paix," by Tolstoi, a Russian. Half of the first volume is a labyrinth, the whole three are a tax on your mental powers. Yet, such is the attraction of the united incidents that you cannot throw the work aside. Since Balzac, one has

never seen so many distinctly marked and original visages. Who or what are they? You feel they are real, only you have never encountered them. They are all types of Russian society, aristocratic and democratic, moving in different orbits. The drama is Russian society in Peace; later, War, in resisting Napoleon's invasion. The scene is laid at Moscow. The Invasion of Russia by Napoleon was never better dramatized; never was the terrible Retreat more vividly portrayed. ZERO.

THE BIRTH OF WORLDS.

THE new star in Andromeda has been popularly regarded as probably a new world. This, whatever else it may be, it assuredly is not. Stars are of course not worlds, whether they be new or temporary or simply variable. The idea gains ground steadily that all so-called new stars were but variable stars, with a somewhat exceptional range of variation, and probably of very long period. If the star Mira or Wonderful, in the constellation Cetus, were so situated that when at its faintest it was visible as a third-magnitude star, it would outshine all the stars in the heavens when at its *maximum* of splendour. So would Eta Argus, and so also would the so-called new star in the Northern Crown. Indeed, if we regard the nebula in Andromeda as lying further away than the faintest star visible to the naked eye, then, were we brought so much nearer that its distance was only that of a first-magnitude star, the *nova stella* (probably but a *stella mutabilis*) which shone out recently in its midst would have been resplendently visible instead of needing a telescope for its detection.

Neither this star, nor any other new, variable, or temporary star ever observed, can be said to have thrown the least light on the birth of worlds. Certainly, if the nebular hypothesis of Laplace represents the real way in which solar systems are formed, no new star has thrown light upon that process, or possibly can. For the process imagined by Laplace involved no catastrophes. It was a steadily acting process, rather leaving nebulous rings behind than throwing them off as commonly supposed; the rings separated into parts as they shrank longitudinally by a gentle movement, and the various fragments coalesced rather than collided, for they were all travelling the same way round; in fine, Laplace imagined no fierce conflict of matter with matter such as the sudden outburst of splendour in what we call a new star necessarily implies.

It might be well, however, if the interest excited by the new star, though it may throw no new light on Laplace's hypothesis, should direct some degree of attention to the very remarkable defects which any astronomer who knows aught of physics, or any physicist who knows much of astronomy, cannot fail to recognize in that remarkable speculation. Attracted by the effective way in which some features of our solar system, for which the theory of gravitation cannot account, appear to be explained by Laplace's hypothesis, many astronomers overlook the startling difficulty which Laplace overleaped at the outset. On the other hand, many physicists are unaware that the hypothesis started from what, with the knowledge of physics obtained since Laplace's time, is seen at once to be an absolute impossibility; they know only that a number of astronomical facts appear to require some such theory; of the details which are also required (but which a physicist at once sees to be quite impossible) they know little.

Let us consider how the theory of Laplace was suggested and what the theory required. We may take, as an example of what Laplace could and could not do, that masterpiece of mathematical analysis, his inquiry into the stability of Saturn's ring-system; here the mathematical work was almost perfect, and the conclusion, that the rings must be narrow and eccentrically weighted, was demonstrably right, on the assumed premisses; but these premisses were erroneous. A knowledge of physical laws such as Laplace could not have, but such as many boys in our time have acquired, would have shown Laplace that the rings of Saturn could not be what he assumed them (quite unquestioningly) to be at the very outset of his inquiry. Solid rings on the scale of the Saturnian system could no more remain unbroken under the forces to which they are subjected than a model of the Menai Bridge, perfect in all other respects, but on such a scale as to span 100 miles, could bear its own weight. In this case, where not a theory, but a magnificent calculation of his, was in question, science has not hesitated to set Laplace's conclusions aside, because of the falsity of his assumptions, adopting, instead, the results which Maxwell, Clerk, Pierce, the Bonds and others have established—viz., that the Saturnian rings consist of myriads of tiny satellites, like sands on the sea-shore for multitude. But, strangely enough, in the case of his far-famed hypothesis of the birth of worlds, which starts from a similar, or rather from a much more monstrous mistake (very natural, though, in Laplace's time), science has scarcely even questioned his results, far less examined his initial assumptions.

The facts which the nebular hypothesis of Laplace was intended to explain are simply these: The planets travel the same way round, and in nearly the same plane. The central sun turns the same way on its axis, so do all the planets whose rotation has been observed; all the moons travel round their ruling planets the same way—except the moons of Uranus and the moon of Neptune; and these bodies, travelling as they do at the very outskirts of our system, may be regarded as having, perhaps, been exposed to disturbing influences affecting, in their case, the action of the laws, whatever they were, which gave these features of uniformity to our solar system. Laplace suggested, as a hypothesis which seemed to him to result from these features, that the whole mass of matter out of which the solar system was formed was once an immense disc, extending beyond the path of the remotest planet now known, and rotating as one gigantic whole. Granting only this assumption, and starting from it, all the features of the solar system mentioned above would follow. The ring would gradually