

it is being driven towards a head-on collision with organised labour over wage claims. But it will be tragic if the consequence is a wave of strikes. For, whether they win or lose the battle, wage-earners cannot appreciably increase their real wealth by making inflationary wage claims. What they may do, if they win, is to force the Government—as, indeed, they are already forcing it—to cut down upon the output of capital goods, that is, to reduce instead of to increase the proportion of output devoted to capital production. But since the rate of increase in the output of consumption goods is dependent on the rate of increase in the output of capital goods any such cutting down of capital production decreases the rate at which real wealth expands. That, surely, is not an end for which the trades unions wish to fight! We, thus, see no good reason, if hot tempers are given time to cool, why organised labour should not co-operate with, rather than oppose, the Government. For both have the same objects, to raise national output and, hence, standards of living as fast as possible and to stabilise prices. There is in reality nothing much to fight about.

THE ATOMIUM THING

When Hazlitt saw the Royal Pavilion at Brighton he was moved. "It seems," he wrote, "as if the genius of architecture had at once the dropsy and the megrims. Anything more fantastical, with a greater dearth of invention, was never seen. The King's Stud (if they were horses of taste) would petition against so irrational a lodging." His tour of France and Italy was more than a century too early; it should have been arranged so that he could have looked in at Brussels next spring. The reactions of such a pungent critic when introduced to that gigantic edifice, the Atomium, a model of which is depicted on page 687, would, indeed, have been awesome. After all, the Royal Pavilion only attempts to characterise a little light-hearted seaside gaiety. But the Atomium is heavy with symbolism, as well as with steel; it stands for the captured secrets of the atom—if that phrase may be pardoned—and it is, indeed, a tribute to man's imagination! The elegant equations of the nuclear physicist and the inspired engineering design of our newest industry have been transmuted, without shame or modesty, into a crude and improbable assemblage of enormous balls.

But it is not to be assumed, because of the predominance of this thing, that the Brussels exhibition will be a sort of atom-age pawn shop! As it is shaping up at present, the exhibition shows every sign of being highly successful. The architecture alone will make a visit worth while. No expense is being spared by the participants to show off their country, or

organisation, to the best advantage. Whether it is wise to devote all this money and energy to such a temporary cause is an open question; but that decision has been taken, and now all preparations are going ahead with enthusiasm. The British contribution to the exhibition has been organised partly by the Government, and partly by the Federation of British Industries. The latter body has built a large and elegant building in which British products will be shown. The British Government's part of the exhibition is noteworthy for an original approach. Instead of designing a special exhibition building, it was decided to design the display itself, and then fit the buildings round it, a procedure with which any industrialist would sympathise. The result will be an atmosphere of tradition, in the first hall, yielding abruptly to one of futuristic achievement in the second. Here, important scientific advances made recently in this country will be exhibited. Readers of this journal will be familiar with many of them—the Dounreay project, the heart and lung machine, and new equipment for radio astronomy. Those not so directly connected with engineering are, however, equally fascinating: they include a demonstration of the chemical basis of heredity, which depends on properties of nucleic acid for "coding" genetic information, exhibits on the isolation and analysis of vitamin B12 (which can be used to cure pernicious anaemia), the technique of deep ploughing and the significance of trace elements in agriculture, and the development of rootstock for fruit tree propagation, and of new forms of weedkiller. By concentrating on a few important developments, this section of the exhibition is likely to be truly educational. It shows promise of avoiding the criticism levelled at the "scientific bric-a-brac" characteristic of the Festival of Britain, and of presenting those with a knowledge of only one of the many branches of science and technology with an opportunity of appreciating major achievements in other fields.

A HALF-TON "SPUTNIK"

Half a ton! The world was astonished a few weeks ago when the Russians put the "Sputnik" weighing 180 lb into an orbit round the earth. For that object weighed ten times more than the expected size of the promised American satellite and was, moreover, set up in an orbit more difficult to achieve than that which the Americans planned to use. But half a ton in an orbit of greater mean radius than that of the "Sputnik"! It has been made obvious that the whole tempo of Russian research into rockets has been higher than that of the Americans and there is a distinct suggestion that it has been not only better directed but also better inspired. How very much we

should like to have particulars of the rocket used and, more particularly, about the propellants, which may have a higher specific impulse than anything the Americans contemplate using. Also we should like to know whether the new object separated from the last-stage rocket, as the "Sputnik" did, or whether, there being no separation, part of the weight can be accounted for by the burnt-out rocket.

It is possible that the advanced state of Russian rocket development may be due to an earlier start having been made upon it in Russia than in America. There is, however, another possible and more disturbing explanation. We have a high admiration for American vigour and determination. But even Americans themselves can often be driven to admit that the quality of fundamental research in their country falls below that attained in Europe. There is a tendency in the U.S. to assume that provided sufficient money is poured into a project success must be achieved. In Europe, where the monetary resources are less, more weight is given to the quality of the research work, to hard, constructive thinking, and to the inspiration that so often follows from hard fundamental thought. Americans must pardon us for thinking that neither in the development of the atomic bomb, nor of radar, nor of several other wartime inventions would progress have been made so rapidly had not European scientific inspiration been combined with American resourcefulness in solving production problems. In the development of rockets, and perhaps also in the development of atomic explosives—the Russians, it will be recalled, developed hydrogen bombs as quickly as the Americans—American insularity has, we suggest, done great harm. Through the operation of the McMahon Act designed to prevent American discoveries reaching the Russians, American science has been cut off from contact with European science. That, a secondary effect of the Act, has, we suggest, had the most damaging consequences. Possibly McCarthyism, by discouraging certain scientists from undertaking researches to which security regulations would apply, also had damaging consequences. In the outcome it is obvious that the Russians have achieved a long lead in the design of rockets. We are not unduly alarmed, as it seems to us unlikely that the U.S.S.R. has any more desire to start a new and destructive world war than has the West. But upon grounds of safety the nations of the West must be drawn closer together, particularly in the scientific field. Meanwhile, we congratulate the Russians on their very remarkable achievement, whilst hoping that their further advances will be made towards the peaceful objective of exploring space rather than threatening the world with inter-continental ballistic missiles armed with nuclear warheads.