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# HERE AND THERE.

"A brick was thrown at me, sir. It hurts!" - "Nonsense, my boy," says the absorbed professor. "A brick is composed of molecules or groups of atoms. The latest theory of the atom is that it consists of a kind of solar system, that is, a sun and, at a comparatively huge distance from it, planets, or, in other words, the atom consists of electrons. A brick is thus composed of nothing but space dotted with electrons, and as space has no weight, it could not hurt you! Let me see, 'Brick,' specific weight about 2. That's the electrons, of course.

The atom, although apparently a world in itself, has never been seen, even with the most powerful microscope. It is so small that its existence has only been revealed by the answers in chemical combinations. The atom is nothing to our eyes, yet the atom is everything in the constitution

of matter.

The atom is a colossal unexploited source of power, and we are on the eve of scientific discoveries concerning it, discoveries of so sensational a character as to render Einstein's theory, by comparison, child's play. The prediction by one of the most eminent English scientists that within a few years' time the atom will be harnessed, its stupendous energy liberated and controlled and rendered capable of being utilized either for good or for evil.

"The cost would be negligible," the scientist says.

"One man would be able to carry without effort sufficient fuel to drive a large liner from Southampton to New York," or perhaps to enable us to fly "to the moon before a century is out." Everything would be electrified, metals

could be transmuted.

We stand aghast when we hear of the potency of the very latest inventions for war or destructive purposes. Take, for example, the bombs of 2 inches diameter and 9 inches long (which the Germans call homonymously Elektron) containing thermite, and of such a composition that they could not by any means be extinguished and would melt their way through armour plating and set everything afire; or another bomb, a little glass globe of 4 inches diameter containing a dark liquid which on gasification would penetrate everywhere, in cellars or underground tubes and poison everybody coming into contact with it. One raid with such bombs would paralyze London. The very thought appals with the enormity of the crime. However, such terrible inventions bear no comparison with what would be possible with an "atomic bomb" of the size of a postcard and a force of 2,000 other bombs. A sack of such "postcards" from a Berlin helicopter six miles high—and what has taken centuries to build would be no more! As a matter of fact, this scientist has gone so far as to say the world may altogether be blown up.

This nightmare is backed up by the Quantum theory, which shows there are gaps either in time or in time multiplied by energy, and that its vital truth is that there is one law for the individual atom, but another for a collection of atoms, as in the case of the "brick" or of

known matter.

It is to be hoped that any of these instruments of hitherto unknown power may be, for the sake of civilization, limited by other inherent forces, unless it is done by human wisdom or common-sense, as demonstrated by the universal vote for peace by the thousands of people of all nationalities present in Hyde Park on the occasion of the third anniversary of the League of Nations.

Knowing how a man's life hangs by a thread, it is

still of some interest to find out whence he made his first appearance in this vale of tears, where he could be so happy if he only wanted to. Darwin has, as we are all aware, given his version, which appears to be the right one. Professor Grafton Elliot Smith, of the University of London, gives us some more precise information on the subject in the first volume of the new twelfth edition of the "Encyclopædia Britannica," which is about to appear.

"Mankind," he says, "springs from the Siwalik Hills

in the Himalayas." This district bred anthropoid apes in the Miocene period—say, about three or four million years ago. These apes "included the ancestors not only of the ourangs, the chimpanzees and gorillas, but also of the human family. . . . All original men were black, like their near relatives . . . but one branch of the human family attained bleached skins and large brains. . . . In the Glacial period this pale-faced stock became segregated into the four main families by impassable ice barriers that endured for countless thousands of years. One group lived near the Yellow River and became the Mongolian race; another in North East Africa, where it became the brown The Alpine or Armenoid and the Nordic stocks lived in Turkestan. The true cradle of civilisation was Egypt and not Babylon.'

It may be a source of satisfaction to some to learn that we come from such a "stock."

\* \* \*

She could not and would not die; her heart did not beat for an entire day, when it started pulsating again. The case is that of an American woman whose intense love for her children, according to the statements of the doctors who attended her, was the cause of retaining life. "Love worked a miracle; white-hot enthusiasm, unrelenting determination are the greatest forces in the world," says a "Daily Express" writer. "By them man can step outside the material boundaries in which he is confined by his bodily limitations. It is no new doctrine. The Easterns have always preached it. Materialism has never ruled the world for long. It never will." Let us hope not!

Poor pussy! A cat is to be anæsthetised in order to enrich Physical Science with the evidence that its astral body does exist. The victim will be placed in a glass box and this box inside another glass box five inches larger. Spiritualists believe that the astral body is the soul, shaped like the animal body wherein it dwells. The astral body may leave the animal body when it is asleep or under an anæsthetic, but is always united to the latter by an invisible cord, and when this cord snaps, what is known as death takes place. If the astral body leaves the cat it must pass between the two glass boxes. The air in this space will be reduced. Radiations are expected; ionization will take place or little electrical particles will condense on the surface of the astral body, like dew drops on the

The question for the ordinary man is: Whatever happens, what does that prove? All bodies radiate more or

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It is reported that the Everest Expedition leaders had attained a height of 27,350 feet-leaving 1,600 feet to reach the summit—when further progress was declared impossible owing to weather conditions getting more severe, although General Bruce was most reluctant to give up further attempts. The authoritative view in India is that the last lap—say it were only 1,000 feet—would only be coverable by an almost superhuman effort under unprecedentedly lucky conditions and by men facing the certainty that they will never get back.

Under such conditions nobody will think the less of the daring of these intrepid mountaineers.

M. Henri Spahlinger, the young Geneva doctor whose successful experiments in the treatment of consumption have attracted much attention, is to receive a monetary grant from the British Red Cross Society, the amount of which is being considered.

In 1913 and again in 1920 he was experimenting in London hospitals, and remarkable and lasting benefit is claimed for his system of treatment, which consists of injections of a serum that takes two years to prepare, is very costly and is his secret. It is hoped that early next year a definite pronouncement regarding it may be possible.

# FINANCIAL AND COMMERCIAL NEWS FROM SWITZERLAND.

#### Success of the New Loan.

The new loan issued by the Swiss Federal Railways, with the object of consolidating a part of the floating debt contracted for electrification purposes, was over-subscribed in a very short time. The advertised amount of the loan was 100 million francs, but the Federal Council reserved the right to increase the amount up to a maximum of 200 million francs should the extent of the subscriptions render such a move desirable. The amount subscribed was about 280 million francs, and the Federal Council eventually decided to fix the total amount allotted at 150 million francs. As has already been stated in these columns the loan bears interest at  $4\frac{1}{2}\%$  and is redeemable in 1933, interest being payable in February and August.

#### Trade Returns for the First Quarter.

At first sight the trade returns for the first 3 months of the present year seem to show a further reduction of Switzerland's trade with abroad. The following table shows the development of the returns since the beginning of 1921 and as compared with the figures of the second quarter 1920, when the record figures were attained (in 1,000 frs.):-

			Imports	Exports
2nd quarter	1920		1,096	 899
1st quarter			782	 477
2nd quarter	1921	·	553	 446.6
3rd quarter			408	 419
4th quarter	1921		552.3	 421.5
1st quarter	1922		445.37	 402

On closer inspection, however, it appears that the reduction is not so much due to reduced quantities of goods passing, as to the effects of the continued fall in prices. This is true of imports as well as exports. For instance, the import of coal rose from 386,000 tons in the first quarter of 1921 to 436,000 tons in the first quarter of the present year, but the cost to Switzerland was only twofifths of that paid last year,  $31\frac{1}{2}$  millions instead of  $76\frac{1}{2}$ millions. The same is true in the case of various other

important commodities, such as iron and sugar.

The extent of the falling off in the values of some of the principal articles imported by Switzerland since the record figures reached in 1919 and 1920 is illustrated by the fact that, while in the third quarter of 1919 the machinery imported was valued at 69 million francs (rising in the second quarter of 1920 to  $72\frac{1}{2}$  millions), the most recent quarter's figures only showed 37 millions. stuffs imported in the September quarter of 1919 reached a value of 150 million francs, while for the three months ending with last March the corresponding figure was 46 millions. Cotton stuffs had fallen in the same period from millions. Cotton 3126 millions to  $46\frac{1}{4}$  millions.

### C. F. Bally's Report.

The accounts of the well-known boot and shoe manufacturing firm of C. F. Bally S.A., in Schoenenwerd, for the year ended 13th April, 1922, closed with a loss of 2,106,248 frs. Since the last report was published it was decided to transform the firm into a holding company and to transfer the manufacture in Switzerland to a special concern known as the Bally Shoe Manufacturing Company. During the last year this latter company, which is the principal subsidiary, was very unfavourably affected by the general economic situation. In the first few months of the year its activities had to be greatly curtailed owing to the flooding of the Swiss market with goods from countries where the exchange was depreciated, and the action of the Government in restricting imports failed to effect any appreciable improvement. The daily production of more than 12,000 pairs of boots, which had been attained at the beginning of the business year 1920-21, had sunk by June, 1921, to 4,200 pairs.

Energetic measures were necessary to meet this situation, and large numbers of employees were discharged and the works closed down twice for a fortnight and costs reduced in every way possible. Prices had to be cut to meet the altered conditions, and this could only be done by writing off large amounts on the value of stocks. By the late autumn of 1921, however, orders were coming in somewhat more satisfactorily, but for the most part customers were demanding prompt delivery. It was for this reason, and in order to reduce costs still further, that at the beginning of January the company obtained the necessary permission to increase the working week from 48 hours to 52 hours. This made it possible to employ a large number of work-people, and production was gradually increased, until in April of the current year more than 9,000 pairs were being turned out per day. The result of the year's working of this principal subsidiary was a loss of 2,514,694 frs., to the partial covering of which the reserve fund of 1,000,000 frs. has been devoted, thus leaving a net loss of 1,514,694 frs. to be carried forward.

## STOCK EXCHANGE PRICES.

Bonds.	Jun	e 20th	July 4th
Swiss Confederation 3% 1903	77	.50%	77.85%
Swiss Confederation 9th Mob. Loan 5%	102	.20%	102.20%
Federal Railways A—K 3½%		.30%	82.35%
Canton Basle-Stadt 5½% 1921		.10%	104.15%
Canton Fribourg 3% 1892	. 75	.50%	75.15%
Zurich (Stadt) 4% 1909		.70%	100.80%
Shares.	Nom.	June 20th	July 4th
	Frs.	Frs.	Frs.
Swiss Bank Corporation	500	605	
Crédit Suisse	500	640	652
Union de Banques Suisses	500	549	547
Fabrique Chimique ci-dev. Sandoz	1000	1405	621
Société pour l'Industrie Chimique	1000	1177	1370
C. F. Bally S.A	1000	852	875 -
Fabrique de Machines Oerlikon	500	549	525
Enterprises Sulzer	1000	530	600
S.A. Brown Boveri (new)	500	337	350
Nestlé & Anglo-Swiss Condensed Milk Co.	400	215	210
Chocolats Suisses Peter-Cailler-Kohler	100	109	113
Compagnie de Navig'n sur le Lac Léman	500	470	470
Société Chimique de Basle	. 33		1017