covered by the Payments Agreement of August 1949. An amount not exceeding £50 lakhs is to be transferred from the No. 1 to the No. 2 account of the State Bank of Pakistan. Thereafter an amount not exceeding £50 lakhs is to be used to bring the working balance in the No. 1 Account up to £120 lakhs. The remainder is to be transferred to the No. 2 Account, provided the total transfers do not exceed £140 lakhs. For the period July 1, 1950, to June 30, 1951, a sum not exceeding £150 lakhs will be transferred to the No. 1 Account. Further sums not exceeding £25 lakhs will be transferred for meeting Pakistan's exceptional requirement; of foreign exchange up to the end of September 1950 arising from the present state of trade and payments with India.

The need for these additional advances that will be made to Pakistan out of her blocked balances, arose out of the disruption of Indo-Pakistan trade and financial relations after September. Even the barter exchanges provided for in the limited agreement of April this year have not yet been completed. Since Pakistan did not earn enough sterling from her trade with India, the gap in her external balance of payments has had to be filled up by additional releases from the blocked balances. This additional grant of £140 lakhs clearly indicates that the continuance of the economic dispute between India and Pakistan will ultimately react to the detriment of the countries immediately involved as well as the sterling area as a whole.

Manufacture of Sugar

With the sugar crisis still hanging fire, an all-round effort is made to promote sugar cane cultivation and improve the technique of sugar manufacture. The use of fertilizers and the suitability of different varieties of cane for different conditions of soil is being experimented. The indigenous khanduri method of sugar manufacture involves a lot of waste. The Institute of Sugar Technology at Kanpur, it is reported, has developed a simple technique for the reduction of loss of sugar during the process of manufacture by the open-pan system. It is also shown that molasses mixed with cane bagasse can be used as a subsidiary cattle feed.

The Damodar Valley Corporation

Kumud Bhushan Ray, M.I.E. (Ind.)

The TVA Approach

At the symposium of the National Institute of Sciences on Multi-Purpose Projects on River Valleys, held in Calcutta on August 4-5, 1930, the Chairman, Damodar Valley Corporation (DVC), read a paper on the economic significance of multi-purpose approach. He said that "the TVA approach has been frankly applied to the Damodar Valley. The Damodar Scheme, has been drawn up so as to cover the entire river system from its source to its mouth." He has mentioned that in the Tennessee Valley, "the surplus revenue from power will be enough to repay the entire capital cost within 30 years." The DVC has proposed the installation of Hydro-Electric Power stations at the dams with a total capacity of 198,950 kilowatts. In para 85 of the "Preliminary Memorandum on the Unified Development of the Damodar Valley," it is stated that "the hydro-electric plants can produce about 65,000 continuous kilowatts during the dry period, and the remaining 115,000 continuous kilowatts during the dry period should be produced by steam plants. A thermal capacity installation of 150,000 kilowatts, operating on base load during the dry season is deemed to be sufficient for this purpose." It is true that thermal power stations are usually constructed with hydro-electric stations. For example in Sweden, the installed capacity of hydro-electric and thermal power stations are in the ratio of 70 to 30; but the hydro-electric plants normally generate as much as 97½ per cent, of the total and thermal plants only 2½ per cent, but in the DVC proposal this ratio has been reversed, the thermal stations supplying most of the power during the dry season of 8 months in the year.

No Dams on Lower Damodar

It may now be examined, if the TVA approach has really been applied to the Damodar Valley and if the DVC's scheme covers "the entire river system from its source to its mouth." In the Tennessee Valley, there are 17 dams on the tributaries, while 9 dams have been constructed on the main river, converting nearly the whole length of the Tennessee river from 23 miles to 650 miles above its mouth or 630 miles into a chain of storage reservoirs. In the Damodar Valley, there will be 8 dams, all up-stream of the point where the Hara-kar falls into the Damodar, but there will be no dams on the Lower Damodar, similar to the 9 dams on the Tennessee. Can it be said, that the TVA approach has been applied to the Damodar Valley in the matter of dams?

The Chairman, DVC, has stated that "there is ready market for power in the valley and its neighbourhood." But this ready market is no longer very certain, considering the way in which it is being progressively contracted. The Sindri Fertiliser Factory, which could have absorbed a large block of power from the DVC, has installed its own thermal power plants. Similarly, the Chittaranjan Locomotive Works, which also could have utilised a large block of DVC power, is installing its own thermal power plants. That "seasonal hydro-electricity can be more easily firmed up with steam power in this coal valley than almost anywhere else in India" is another contention of the DVC Chairman. But to get the same power from
two distinct installations in different seasons of the year, on both of which there will be depreciation, interest and maintenance charges, is surely not an economic proposition. In these circumstances, will the surplus revenue from power in the Damodar Valley Scheme, be enough to repay the entire capital cost within 30 years, as in the Tennessee Valley?

Flood Control

In the Journal of the Institution of Engineers (India), December 1948 issue, in an article on "Flood Control in the Damodar Valley," it has been stated that after the construction of dams, "in 5 out of 12 years there would be very little or no flow from the upper valley through the Lower Damodar. . . . A bottle-neck will be created at the head of the tidal reach, which will become worse every year of no discharge, leading to intensification of flooding above the bottle-neck." This was apparently confirmed by the Governor of West Bengal in the inaugural address at the fifth session of the All India Council of Technical Education on July 24, 1950, when he said that:

"In West Bengal, we experienced this feeling of frustration when we learnt that the Damodar Flood Prevention Dam Scheme was no longer under active consideration."

If flood prevention is "no longer under active consideration," then surely the question of money value of flood control does not arise, as losses due to flood damage will continue to occur, after the works done by the DVC.

Navigation

The Chairman, DVC, has mentioned the traffic density between Calcutta and the Valley, on account of which water transport "would be both welcome and economically justified." It has been explained that "in 5 out of 12 years, there will be very little or no flow from the upper valley through the Lower Damodar." As a result of this diminution of flow, the Lower Damodar channel will progressively deteriorate. This fact has apparently been realised, so that while 630-miles of the Tennessee has been made navigable by TVA for all kinds of river craft and "traffic moved on the river has increased by leaps and bounds," the DVC has abandoned the proposal to make the Lower Damodar fit for navigation, and the idea is to have a navigation-cum-irrigation canal, although the policy of keeping irrigation canals open for navigation has practically been abandoned." Thus although water transport is welcome, the navigation-cum-irrigation canal proposed by DVC, will cater for an insignificant part of this traffic.

Control of Soil Erosion

The Chairman, DVC, has stated that "the greatest achievement" of TVA "has been control of soil erosion." In the "Preliminary Memorandum," in para 108, the cost allocation of Damodar Valley Scheme is shown as:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost (in rupees crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood Control</td>
<td>14.0</td>
</tr>
<tr>
<td>Irrigation</td>
<td>13.0</td>
</tr>
<tr>
<td>Power Irrigation</td>
<td>28.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55.0</strong></td>
</tr>
</tbody>
</table>

It will be seen that no cost has been allocated to Navigation or Control of Soil Erosion, and while there is mention about Navigation in the Preliminary Memorandum, nothing has been mentioned about control of soil erosion. Neither has the Chairman, DVC, referred to this very important subject in his paper read at the Symposium.

Threat to Damodar Valley Project

Control of soil erosion is, however, of vital importance in river control by storage reservoirs, as the life of these reservoirs depends on the amount of silt deposit in them. In this connection, special attention is drawn to a press report that appeared on August 13, 1950, under "Threat to Mor Dam Project." It stated that:

"The Central Government's soil conservation experts, after an on-the-spot investigation, have found the catchment of the Mor river in Bihar in a 'deplorable' state caused by soil erosion. The experts are so upset by the results of their investigation that, in their report to the Central Works, Mines and Power Ministry, they have suggested that 'money must be found to eradicate the menace or the huge amount to be spent on the project will be wasted.' The continuance of the present state of affairs, they fear, is likely to lead to the silting up of the reservoirs."

The catchment of the Damodar, contiguous to that of the Mor, is also in a 'deplorable' state caused by soil erosion. As in the case of Mor catchment, "money must be found to eradicate the menace," or the colossal amounts of money that are being spent by DVC are sure to be wasted owing to the silting up of the reservoirs. The object of this article is to draw the attention of the public and the Government to the fact that the way work on the Damodar Valley Project is proceeding may best be described in DVC Chairman's own words used in a different context as "a financial leap in the dark."

TRADE UNION PARLIAMENT

As a national talking-shop, the Trade Union Congress comes second only to the House of Commons. In this pioneer country of trade unionism, where trade unions first grew out of the hurly-burly of the Industrial Revolution, there are nine million workers, organised into over seven hundred unions. Of these, 187 unions, with a membership of nearly eight million were affiliated to the TUC in 1949. Although there is a total working population of 23 million, which means that the workers are less than 50 per cent, organised, the effects of the activities of the major unions are felt throughout the country and millions of workers, who belong to no union, follow their lead.

Almost without a break, annual congresses have been held since 1868 (when there were 34 delegates representing 18,367 workers) and have become the national sounding-board for the hopes, fears and aspirations of a section of the population which, under the Labour Government, has reached a position of power greater than it has ever held before. But this power is to a large extent dissipated by virtue of the fact that the TUC is not a "supra-union" authority—it is a loose federation with no power at all to force its constituent unions to do anything they do not want to