that the wide distribution of electric power will reduce this tendency, and for such supply the more numerous stations will be advantageous.

The proper price for this low grade coal must be controlled by a joint board of some kind, but it will not be fixed at 5*s*. per ton, any more than the price of steam coal is fixed at its present price. But for the various reasons given in the paper, the fair price will always be a low one.

Your correspondent agrees that there may be individual cases where pit-head production can be economically undertaken. That is exactly my plea. Let the most advantageous places be undertaken first, and then consider the extension of the scheme as opportunity arises. An important asset in the plan is that it can be carried out gradually, and can be developed to any degree of completeness, without detriment to its successful operation at any stage. It may merely supplement the present stations, or it may ultimately replace them, but there is no commitment to a large scheme which once begun must be completed to obtain success. Although the potentialities are very large, the initial risk is small and each step can be proved before a further advance is made.

FRANCIS G. BAILY.

Juniper Green,
Midlothian. Oct. 18.

Inland Water Survey

AFTER reading the valuable leading article in NATURE of October 27 on "Inland Water Survey", with most of which I am in full sympathy, I should like to comment on the view therein expressed that: "Until a survey has been instituted and in a large measure completed, it cannot be known with any degree of certainty and reliability to what extent supplies are actually available for distribution", and that such schemes as the creation of a statutory central water authority, or regional committees are "not ripe for consideration at the present juncture".

It is evident that a survey of the water resources of Great Britain, which many of us hope will be supervised by the Department of Scientific and Industrial Research, will necessarily be a slow and laborious investigation, lasting for an indefinite period. But in the meantime, urgent schemes for the allocation and distribution of water will arise and have to be dealt with in the light of existing knowledge of the water resources in the areas relative to such schemes. It may well be that an *ad hoc* investigation of the resources of the district in question would have to be carried out promptly, possibly with the aid of the central water survey organisation.

As I see the whole problem, the establishment of a central water authority, with its subordinate statutory regional water committees, which in the opinion of our leading water engineers is urgently required at the present time, for many sound reasons which need not be stated here, is not inconsistent with the simultaneous institution of a national water survey. The former would function in the administration, allocation and distribution of water supplies, while the latter would organise the purely scientific and technical survey of our resources. The ideal no doubt would be to have available the results of a completed survey before attempting to allocate resources, but in the meantime we must be content to absorb and utilise the new knowledge as and when it becomes available. I think that if this dual aspect of the question is kept in mind, it might help the Government to arrive more readily at a decision.

40 Oakfield Road, W. S. BOULTON.
Selly Park, Birmingham.
Oct. 29.

WE can readily concur with Prof. Boulton in his view that "the establishment of a central water authority . . . is not inconsistent with the simultaneous institution of a national water survey". Both matters are alike important, but while there appears to be no valid obstacle to the immediate inauguration of a survey, we see much of a highly contentious nature in the various proposals put forward for the constitution of a central water authority. Our view is that the survey, which is a primary necessity, should not be held up pending a settlement of these purely administrative details, which cannot in the least affect the operations of a survey. In the practical vernacular of the engineering profession, we are anxious to see the Department of Scientific and Industrial Research given authority to "get on with the job".—Editor, NATURE.

The Theory of Colour-Vision

In 1889 I put forward the theory that light perception and colour perception were quite distinct and were distinguished by different cells in the brain, and that colour-blindness was a defect in the evolution of colour perception. This theory enabled me to predict a large number of new facts, and with my experience as special examiner and adviser to the Board of Trade on colour vision and eyesight for fourteen years, with the very fine apparatus in my laboratory, no fact has been discovered which is not in agreement with the theory.

Henschen has shown that there are different cells in the visual centre for the perception of light and colour. Colour-blindness cannot be explained on the old theories and any classification on them is erroneous. Let us consider two examples of the 50 per cent of dangerous cases which pass the old wool test with ease. One has shortening of the red end of the spectrum; he will look at a blazing red light of long wave-length and declare there is nothing there, but will recognise red of shorter wave-length to the lowest degree of luminosity perceptible to the normal sighted. Then take a trichromic (one who sees only three colours in a bright spectrum, red, green and violet); his chief defect is that he has no yellow sensation and therefore is in difficulty over so-called white lights which are really yellow. A trichromic must not be confused with an anomalous trichromat. 90 per cent of the dangerously colour-blind agree with the normal equation, an anomalous trichromat does not.

There are innumerable varieties of dichromic vision, not two main varieties as stated in many books. The dichromic sees two colours in the spectrum, red and violet, with a white interval. This white interval may be so large as to include yellow, green and blue and the luminosity curve may be normal. Very many dichromics pass the wool test with ease. A man may through disease become totally colour-blind whilst retaining his light perception and normal visual acuity.

F. W. EDRIDGE-GREEN.

Board of Trade,
London, S.W.1. Oct. 27.