TABLE 2—EXTERNAL TREATMENT SCALE

Natural supply	Natural supply score	Treatment possible	Treatment score	External supply score
Piped	80	Storage; pressure	20	100
High spring	70	Storage; pressure (good, medium); softened; protection of intake; purity	30	100
Shallow ground water, etc.	50	Storage; pressure (good, medium); softened; power pump; protection; purity	50	100
Deep ground water	45	Storage; pressure (good, medium); softened; deep well pump	55	100
Water-race, stream	40	Storage; pressure (good, medium); softened; power pump; purified or alternative pure source for drinking	60	100
Rain-water (wet area or supplemented)	25	Storage (good, fair, poor); pressure (good, medium); power pump (from underground storage); filtered or alternative pure source for drinking	75	100
Rain-water only (dry area)	15	Storage (more needed, good, fair); pressure (good, medium); power pump; filtered or alternative pure source for drinking	85	100

pressure. These together were given a score of 20, bringing the total possible for "natural" and "treatment", or the external supply score, up to 100. Table 2 shows how the treatment scores were assessed for each of the natural sources of supply.

Each item in the treatment was scored separately, so that the final external supply rating for each house is out of a possible 100. A rating of 100 meant that whatever the natural supply the house had ample pure water under pressure, so that maximum use could be made of it inside by the housewife if internal plumbing fixtures were adequate.

It was interesting to discover that in all the natural water supply groups some houses had achieved an external supply rating of between 91 and 100, and in all the groups also some had a rating barely above that given for their natural supply (see Graph 1). Thus it is clear that the difficulty or convenience of obtaining the water in the first place does not absolutely control the final standard achieved.

House Amenities Scale

The house amenities scale (Table 3) was a standard scale used for all houses and was independent of the rating achieved on either the natural supply scale or the external treatment scale. The scores allotted for each item were fairly arbitrary. Higher scores were given for items which involved a higher cost of installation or which saved more work.

The score attained by each house on this scale was halved to compare it with a possible total of 100.

When the houses were rated on this scale the majority of houses rated quite well, indicating that they were fitted with the usual water amenities. A few rated very well, an indication of luxury amenities, noticeably washing machines and water closets with septic tanks. However, more than a few rated very badly. Twenty-two houses (11 per cent. of those visited) rated less than 20, and as many as 16 (or 8 per cent.) rated less than 10. This means that the housewives living in these houses have to fetch and carry all their water and heat it in kettles on the range (or in the copper when larger quantities are wanted) and have little or no fixed equipment with drains, so that all the used and dirty water has to be carried outside to be thrown away.

It might have been expected that these low-rating houses were mostly old or had been lived in by their present occupiers for only a very short time, or that they had a poor natural water supply (see Table 4), but this was not so. In fact the only particular factor about this low-rating group was that it contained a higher proportion of houses without electricity than the proportion of similar houses in the total number surveyed. (Possible reasons for this are discussed later.) There was also a very slightly higher proportion of rented houses in the low-rating group than in the whole group.

Total Rating and the Human Factor

If all three ratings for each house—internal amenities, external amenities or "treatment", and natural supply—are added and the total reduced to a percentage, the result gives a total water supply rating for each house. None of these ratings is of course as low as some of those for house amenities only, as a certain minimum score is always given for the natural supply, and this is higher the better the supply. However, once again there is a noticeable proportion of houses with fairly low ratings, though the majority have good and a few very high ratings. To show more clearly how important the human factor is in this distribution the houses in the largest natural water supply group only (those with shallow ground water) have been rated, and the results shown graphically (see Graph 2).

All the differences revealed in Graph 2 are man made, and it is clear that in quite a number of cases where the rating is low man has made very little of his basic natural water supply. In the 14 per cent. of houses where the rating is 40 or under man has done little more than provide a hand pump to raise the water above the ground.

He has usually a copper as well, and perhaps a washhouse, or in a few cases tubs or a sink or a bathroom, though possession of the last-named does not necessarily mean he also has a fixed bath with a drain.

On the other hand in the 10 per cent. of houses where the rating is 91 or over man has made practically the maximum of his supply, providing ample pressure and storage outside and "all modern conveniences" and some luxury conveniences inside his home. These two extremes are developed from the same basic water supply.

Of course the majority of houses had good average amenities, as indicated by the 77 per cent. with ratings between 61 and 90. It is to be hoped that in time the luxury amenities

TABLE 3—HOUSE AMENITIES RATING SCALE

Fixed equipment (with drains)

Sink, 6; bath, 8; tubs, 6; copper, 6; washbasin, 3

Cold piped water

Taps at sink, 7; bath, 7; tubs, 7; copper, 7; washbasin, 3
(Alternatives: Cold tap over bench, 5; cold tap outside, 1; hand pump outside, 1)

Hot piped water

Taps at sink, 8; bath, 8; tubs, 8; washbasin, 3
(Alternative: Hot tap at cylinder only, 6)

Second hot water supply (second cylinder or water heater or alternative method of heating main cylinder), 10

Drainage

Closed pipe, 8
(Alternatives: Open lined, 5; open unlined, 1)

Septic tank and water closet, 15

Grease trap, 5

General

Bathroom in house, 25
(Alternative: Outside with laundry, 15)

Laundry: Attached, 10
(Alternative: Detached, 7)

Washing machine, 15

Good washing facilities for men, 15
(Alternatives: Fair, 10; poor, 1)

Shower, 5

Garden tap, 5

Total 200

TABLE 4—PERCENTAGE OF HOUSES GAINING VARIOUS RATINGS ON THE HOUSE AMENITIES SCALE IN THE WHOLE AREA AND IN EACH NATURAL WATER SUPPLY GROUP

Rating	Percentage of total houses (100 = 200)	Percentage of houses with piped supply or high spring (100 = 61)	Percentage of houses with shallow ground supply (100 = 105)	Percentage of houses with "other natural supply"* (100 = 34)
1-10	7	5	7½	9
11-20	4	6½	4	0
21-30	2½	1½	2	6
31-40	2	1½	1	6
41-50	3	5	1	6
51-60	10	10	8½	14½
61-70	29½	31	27½	32
71-80	21½	16½	25½	17½
81-90	16½	18	18	9
91-100	4	5	5	0

* "Other natural supply" means a deep well, stream or water-race, or rain-water.