the need of pure water and good light in a properly built house; and to consider the importance of cooperation in all departments of woman's work.

We particularly desire to arrange for the discussion of such topics as the adulteration of food and its effect upon the human system, and the study of what the human body needs in the way of nourishment. The value of all labor-saving inventions should be considered in connection with the economic use of strength, as well as the importance of bringing outside labor into the house. In this connection should come the consideration of the value of the work of specialists, thus the opening a way for the rapidly increasing industries for women.

We would call the attention of women in cities as well as in villages to the advantages offered by the study classes of the Chautauqua Societies, as well as by the University Extension courses of lectures. It has been truly said that "The test of national welfare is the intelligence and prosperity of the farmer." This being true, it is of great importance that the farmer's wives, the mothers of unborn generations, should take an active interest in the consideration of all topics in these Congresses.

We desire to obtain statistics regarding the number of women owning and operating farms—the number engaged in Bee Culture, Poultry Raising, Silk Culture, Gardening and other branches of Agriculture, with a view of directing the attention of the women of our country to these new fields of work adapted to women; and at the same time, we would emphasize by the presentation to be made, the success attending the work of the earnest, thoughtful women of our country, whose energies and skill are devoted to the development and building up of their Farm Homes.

The Woman's Branch of the Auxiliary would also emphasize the need of just recognition of and remuneration for woman's work in every field.

Therefore, in asking for members of our Advisory Council, we desire to obtain the names of women who will represent the different sections of this country, and also representatives from every foreign land, all of whom will constitute the Advisory Council of the World's Congress Auxiliary on Household Economics.

THE COST OF GROWING ROOTS.

Eds. Country Gentleman.—I am pleased to give Mr. Massey the information he asks for

My first crop of roots was grown in 1855. It was rutabagas. This root, however, was soon displaced for mangolds, of which I have grown nearly twenty crops, of which I have a record of the cost and product. The smallest yield is 852 bushels to the acre, grown at a cost of $41. The largest was 1,236 bushels, the cost of which was $51.75. But I have not been in the habit of estimating the cost of any crop grown on the basis of fancy prices for labor or manure. The actual cost of everything is, I think, the only proper basis of computing the cost of crops grown. Thus, I have never charged any crop with $3 per day for team work, or for my own supervision or personal labor, although I have sown the seed and spread all the fertiliser for every crop grown, fearing to leave these important parts of the work to a hired man, who might be deficient in judgment.

The largest part of the cost is the fertiliser, which for the larger yield mentioned was $22 per acre for 1,000 lb. of Mapes complete manure. The same year my yield of corn was 125½ bushels per acre, and this was grown at a cost of $11 80 less than that of the largest crop of roots. The following are the figures taken from my record:

Ten tons of manure	$17.50
Fall plowing	2 00
Spring plowing	2 00
Harrowing	0 75
Seed, four pounds	2 00
Sowing seed	0 50
Cultivating eight times	4 00
Thinning out	1.00
Fertilizer, 1,000 lb	22.00
Total	$41.75

It is only reasonable that a deduction of one-third of the cost of manure and fertilizer should be made as a charge upon the following crops

I do not count anything for the harvesting and hauling to the barn and the pitting, because the tops more than paid for this part of the work. (?) The crop of corn referred to cost $13.20 for fertilizer, and there was no cost for seed worth counting, or for thinning out. The other work was precisely the same in every particular, as my mode of growing corn and roots is to cultivate every week. And this I am sure is the cheapest way of growing both of these crops.

The roots cost about 4 cents a bushel and the corn 32 cents without making any deduction as mentioned. If the nutritive value given in the feeding tables (viz., mangolds 14 cents, corn 111 cents per 100 lb.) is of any practical use, the same proportion, as of the cost, exactly applies to the feeding value, and thus the roots were no more costly than the corn. But it is not for the present actual value of the root crops that I advocate so earnestly their culture, but on account of their prospective value for the product of sugar. I have been much impressed with this ever since I saw the great sugar beet farms in France when in that country as a student nearly forty years ago, and what I saw there in regard to the great value of the beet crop as a material for one of the most important manufactures, as well for feeding cattle on the leaves and waste pulp, has been in my mind ever since, and I hope to live until I see this manufacture as firmly established here as it has been in Europe. It was at the same time that I saw the first silo, and that led me to advocate this improvement as strongly as I have advocated root culture. And this advocacy began 20 years ago in an article on the subject in the American Agriculturist, which was, I believe, the first mention of a silo on this side of the Atlantic The first silo I saw, was filled with beet leaves, and the contents were being fed to the oxen, which were hauling the roots to the sugar factory. The ensilage was the product of the previous beet crop.

The exhaustive character of root crops seems to be a stumbling block in the way. I do not think this should be taken into account when it may be easily neutralized by proper fertilizing, and the crop will pay for this. But they are not so exhaustive as might be thought. The following figures taken from the Rothamsted reports show precisely what is taken from the soil by 20 tons of mangolds with the leaves. And as the crop is fed on the land, its manurial value is proportionately large with its exhaustive character. What matters how much is taken from the land if it goes to it again as manure? The figures given show the comparative character of the roots, and 75 bushels of corn, which I think may be taken as equivalent.

	20 Tons Mangolds. with Leaves.	75 Bushels Corn. with Stalks.
Ash	690 lbs	360 lbs.
Nitrogen	147	84
Potash	262	87
Soda	140	3
Lime	53	23
Phosphoric acid.	49	38