THE TARIFF BOARD AND WOOL LEGISLATION[1]

During the second session of the Sixty-second Congress no less than six different bills were offered in the Senate and House as revisions of the tariff schedule levying duties on wool and manufactures of wool. All of these bills, although differing widely from each other, were claimed by their framers to be based upon, or at least not at variance with, the findings of the Tariff Board in its report on Schedule K. Even the Democrats in their long attack on this report said in conclusion: "So far as conclusions can be drawn from the Board's report, it furnishes nothing to justify any change in the rates proposed in H. R. 11019."[2] Democrats, Progressives, and Republicans alike justified the rates in their respective bills by the facts and figures of the Tariff Board's report. Naturally, all this was quite confusing to the average citizen and he asked repeatedly: "Why did not the Tariff Board recommend rates to Congress? And if it had undertaken this task, what rates would it have recommended?"

In answer to these questions, in the first place, it should be said that the Tariff Board was never intended to be a rate-making body. Its friends aspired to make it a substitute, not for Congress in its legislative capacity, but for the Ways and Means Committee and the Finance Committee in their capacity of collectors of tariff information. Under the Federal Constitution it is practically certain that Congress could not delegate legislative power to a board, but it can give power to investigate and report findings of facts. In the second place, these questions suggest a belief, common enough in these days, that there are certain rates which once suggested would be accepted by all as obviously correct. To state this proposition is to answer it, for it must be

[1] Neither the Tariff Board nor any member of it assumes any responsibility for the use made of the Board's statistics in this article or for any observations made about them. I take full and complete responsibility for the construction of the tables and for all the statements made and opinions expressed.—*W. S. C.*

[2] *H. Rep. 455,* 62 Cong., 2 Sess., p. 66. H. R. 11019 is the bill passed by the Democrats of the House during the first session of the 62d Congress which was prior to the publication of the Tariff Board's report. H. R. 22195 was identically the same bill introduced after the Tariff Board's report was published. Both of these bills, after being modified in conference with the Senate Progressives, were passed by both branches of Congress and vetoed by the President.

clear to anyone acquainted with American tariff controversies that the abuse hurled at the Tariff Board last winter would be as nothing compared with the abuse such action would arouse. The fact of the matter is the Tariff Board never intended to go beyond reporting facts and it persistently refused, under urgent political demands, to give even an opinion of what rates it considered equitable and just. No one realized the difficulties of the problem as well as the members of the board themselves and they declined to allow the zeal of those who saw the limitations of a tariff board less clearly than they, to defeat its real usefulness. Tariff making is fundamentally a question of theory rather than a question of statistics. There is no set of rates which are obviously and absolutely equitable and just, for the question which must always be answered first is: "Equitable and just on what political and economic theory?" Rates equitable and just from the standpoint of revenue might be very inequitable and unjust from the standpoint of protection. In like manner, rates equitable and just from the point of view of national exclusiveness might be very inequitable and unjust from the point of view of active foreign competition. It will be profitable to examine further the political and economic difficulties in the way of delegating the power of making or recommending rates to a tariff board or commission.

No board could suggest rates until it assumed the tariff policy of some political party to be desirable. Obviously it is not within the province of pure reason to decide which is preferable—a tariff for revenue only or a protective tariff. Complete statistics and facts might be gathered on all the schedules of the tariff act and still this question would be no nearer solution. Its answer is found in the political sentiments of the electorate and as long as the voters are the ultimate source of power in the United States the answer must come from them. If the voters through their representatives in Congress were unanimously in favor of a given tariff policy this obstacle to delegating rate-making power to a board would be removed for the time being; but it often happens, as it did in the Sixty-second Congress, that different tariff theories prevail in the majorities of the two branches of Congress. In such a case no board could remain non-partisan that did not attempt to recommend rates based on both tariff theories. It is not likely that the two or three great political parties will very soon agree upon a common tariff program, and, until they do, no commission can take the tariff out of politics.

In the past, the political premises on which Congress has prepared tariff acts have been determined at the polls and it seems hardly probable that the people will ever relinquish this right. The Tariff Board as it was constituted of course had no power even to recommend rates, but this discussion should make it clear that if it had undertaken this task it would have been forced to premise its conclusions with some political theory of tariff making.

The political difficulty which stood in the way of the Tariff Board's recommending rates having been outlined, there is the economic difficulty to be noticed. If the board had assumed for the purpose of making a set of rates that a given political tariff theory were desirable, it would have been face to face with the question of efficiency. In the Tariff Board's report on Schedule K there is a vast amount of information relating to efficiency and economic conditions which no tariff maker can disregard; but the use of it removes the task of rate making from the field of mathematics to that of personal judgment. Rate making becomes, then, no longer the work of a statistician, but the work of those with authority to say what the policy of the country is to be regarding a particular industry. An example may make this point clear.

The wool-growing industry in the United States presents to the legislator a very complex problem—the problem of what parts of the industry should be preserved and what parts, if any, should be eliminated by foreign competition. Three distinct divisions of the wool-growing industry exist in the United States: (1) the fine-wooled merino sheep, chiefly in Ohio and the neighboring states, which cannot exist unless at least the present tariff rates are maintained; (2) the crossbred flocks which would exist even under free wool; and (3) the flocks of the ranch states of the far west, the amount of protection required for them being a matter of debate. These facts present a problem of what is economically desirable, and the conclusions reached by study of them will depend primarily upon the student's economic assumptions.

Those with a leaning toward free trade, who approach and study the part of the Tariff Board report treating of wool growing, can with ease construct an argument in favor of free wool. This conclusion is reached by studying the efficiency of wool growing in the United States as compared with that in Australia and England. Cost figures are not ignored; they are accepted as the cost of producing wool in the United States under the existing

conditions. Such students advocate changing these conditic and thereby reducing the costs.

In pursuing their argument they consider, in the first place, t sheep in the eastern states. They claim that the high cost of p duction of fine merino wool, as shown by the Tariff Board, prov not that high protection is needed, but that it is economically u profitable to maintain in the United States the fine-wooled meri sheep; that the crossbred flocks, which produce wool at a negli ble cost, are peculiarly adapted to the farming conditions of c eastern states; and that if the tariff on wool were removed, t owners of the fine-wooled flocks would be forced to cross th ewes with the mutton breeds and by this means the wool-growi industry of the East would gradually become a profitable supp ment to general farming, as it is in Great Britain, and not highly specialized industry, as it is today in parts of Ohio a Michigan.

Continuing their argument these advocates of free wool turn the great flocks of our western ranges and they contrast t breeding, pasturing, and management of the flock-masters Australia, New Zealand, and Argentina with the conditions our West. They claim that if the methods of the former we adopted in this country the costs of producing wool would reduced so that our flock-masters could compete successfully wi all the world without the tariff. They admit that free wool wou force a readjustment in the West as well as in the East, but th say it would place the industry on a much sounder econom foundation.

On the contrary, the advocates of high protection can arg from the part of the Tariff Board's report treating of wo growing that the rate on merino wool should be even higher tha eleven cents per pound. It is said that very fine merino woo are becoming more and more scarce each year with the inroac which the mutton sheep are making upon the merino flocks c the world; that unless the source of supply of these wools maintained, certain phases of wool manufactures cannot continu and that this source of supply cannot be preserved unless a hig level of protection is maintained. Very plausible arguments ca also be made in favor of the existing status of the wool-growin industry because a lowering of the duties would inevitably caus suffering both among the sheep owners and those employed i the industry.

The legislator who conscientiously endeavors to consider impartially the arguments of the free-trader and the protectionist has hard questions to answer. Shall Congress, for the sake of preserving a comparatively small number of fine merino sheep, burden the manufacturer directly and the consumer indirectly with a duty adequate to protect the grower with the highest costs? Or shall Congress say that, since the cost of producing cross-bred wool is negligible, it would be better to force all wool growers in the United States to produce this kind of wool by having free wool as the United Kingdom has with her 31,000,000 sheep? Or shall Congress take a middle course and preserve such parts of the industry as are consistent with a moderate duty? Any of these questions might be answered affirmatively from the report of the Tariff Board, but, whatever may be the correct attitude to assume toward this great industry, all will surely agree that no board, however wise, should determine the answer to the question. This question involves the problem of the nation's policy toward its industries; and, as long as there are political questions, the question of the preservation or destruction of industries will be, and most men would say ought to be, one of them. The subject is discussed somewhat at length here in order to show the nature of the efficiency problem. It must be clear that statistics are of little value in tariff making unless accompanied by sound judgment. "Without judgment," Mr. Emery says, "statistics are useless; without statistics, judgment is unreliable."[3]

Having pointed out what would seem to be both political and economic obstacles to delegating to an executive board general power to recommend rates, a partial solution will be suggested.

If it be admitted that a board be desirable, one of its powers would, of course, be the accumulation of information on all phases of the tariff controversy. On the basis of this information Congress, having first laid down the political and economic premises on which the board was to proceed, might request it to submit a set of rates based on the premises laid down. Such questions as these might be submitted to the board for answer: (a) What would be the immediate and ultimate effect of free wool upon the domestic industry? upon the consumer? (b) What rate of duty on raw sugar would eliminate the cane-growing industry of the

[3] Emery, H. C.: *The Tariff Board and its Work.* Speech delivered at Chicago, December 3, 1910, p. 11.

South and still preserve the beet-sugar industry? (c) Assuming the theory of tariff for revenue only to be desirable, what set of rates on wool and wool manufactures would most equitably raise $50,000,000 per annum? (d) Assuming that the tariff should equal the difference in cost of production between the United States and foreign countries and that the *status quo* of the wool-growing and wool-manufacturing industries is to remain substantially unchanged, what should the rates in Schedule K be? There seems to be no reason why a board could not give answers to these and similar hypothetical questions. This plan would leave to the legislative branch of the government not only the power of fixing the premises upon which the board was to proceed, but also the privilege of finally accepting or rejecting the recommendations of the board; and still it would leave a very useful field of work for an executive board or bureau.

For the purposes of this article it is assumed that Congress desires an answer to the last of the questions asked above and that the facts to be used are those found in the Tariff Board's report on Schedule K. This question takes for granted two facts: (1) that such protective duties should be levied "as will equal the difference between the cost of production at home and abroad" and (2) that the *status quo* of the wool-growing and wool-manufacturing industries should remain substantially unchanged, that is, the question of efficiency is to be practically disregarded. Both of these premises are debatable and the writer, by propounding them, in no way commits himself either to their support or opposition. Plausible arguments can be made for or against both propositions. It is necessary, however, before the discussion can proceed, to assume some of the varying factors in the tariff problem to be constant and there are some reasons why the premises chosen are the most desirable in studying the report of the Tariff Board.

The most important reason is the nature of the Tariff Board. The board was a by-product of a protective tariff bill, the pet of a president committed to protection; and it was requested to apply the rule of protection contained in the Republican platform of 1908. Its founders undoubtedly expected it to consider the protective system beyond controversy. It began work with a presumption, therefore, against its non-partisan attitude. If it had been composed of political opportunists, it might easily have become a mere tool of the protective interests; or if it had started

out like the so-called tariff commission of 1882 to hold hearings, the personal would have overshadowed the scientific element and the board would have been little more than a poor substitute for the Ways and Means Committee. But the members of the board[4] realized that legislators needed, not more comments and figures compiled by interested parties, but a careful scientific investigation of each schedule of the tariff and this they began carefully to make. While considering the cost of production one of the phases of the problem deserving study, they did not limit their study to it, and in the report many other phases of the question are carefully considered which have been obscured by the political significance attached to the cost of production. The work of the Tariff Board, lamentably brief as it was, laid the foundation for a scientific investigation of the tariff; it broke the grip on legislation which a few interested parties, by their knowledge of the tariff and by personal influence, had maintained, and it proved conclusively that the Almighty did not lodge all wisdom in the committee rooms of Congress.

It remains true, nevertheless, that in the public mind the work of the Tariff Board and the cost-of-production theory of the Republican platform of 1908 are inseparable and for that reason this theory is given prominence in this article.

A subject which can only be touched upon in this article is the relative value of ad valorem and specific duties. In this country, as a rule, the advocates of revenue tariffs have favored the former; the advocates of protection, the latter. The Tariff Board made some very pertinent observations on this subject and stated that "from the point of view of protecting the domestic manufacturer by equalizing the difference in cost of production at home and abroad by means of tariff duties, the system of specific duties is the natural and logical method."[5] It has been said that a flat specific rate bears unequally upon those who buy wool, because it does not adjust itself to a wide range of prices. This is true. But it is equally true that a flat ad valorem rate gives very

[4] At the time of the publication of the report on Schedule K the members of the Tariff Board were: Henry C. Emery, professor at Yale; Alvin H. Sanders, editor of the *Breeders' Gazette,* Chicago; James B. Reynolds, formerly assistant secretary of the Treasury; William M. Howard, formerly congressman from Georgia; and Thomas W. Page, professor at University of Virginia.

[5] *Report of Tariff Board on Schedule K,* 62 Cong., 2 Sess.; H. Doc. No. 342, p. 709.

unequal protection; 30 per cent on 20-cent wool is much less protection than 30 per cent on 40-cent wool and still it may be that 20-cent wool requires as much protection as 40-cent wool. This of course is only another case of the necessity of determining your premises before proceeding to discuss tariff questions. The premises on which this article is written establish a presumption in favor of specific duties. But in order to avoid confusion this question will not be discussed in detail. Ad valorem and specific duties will in most cases be treated as though of equal value.

Schedule K of the tariff act of August 5, 1909, fixes the import duties upon a large variety of wool products. In this discussion the following will be considered both because they are the most important and because the statistics of the Tariff Board upon them are most complete: raw wool, tops, worsted yarn, woolen and worsted fabrics.

Raw Wool

In ascertaining the cost of producing wool in the United States the Tariff Board considered wool as the chief product of the flocks and credited against the total cost all receipts from sources other than wool. In the case of the fine-wooled merino flocks, where wool was the only source of income, the entire cost of maintaining the flocks was charged against the wool and as a result the cost of production was high. On the contrary, in the case of the crossbred flocks the receipts from mutton were subtracted from the total cost of maintenance and the resulting figure was taken as the cost of producing the wool. By this means the cost of producing wool was often shown to be negligible.

Nowhere in the Tariff Board's report do figures, considered alone, prove more discouraging than in the volume on raw wool. The cost of producing wool is shown to range from less than nothing up to over 35 cents per pound and these statistics can be studied intelligently only in the light of the facts with which the Tariff Board supplemented them. The extremely high costs are given some weight by the board in making up its averages. Its conclusions recognize three broad divisions of the wool-growing industry in the United States. "In the western region of the United States, with approximately 35,000,000 sheep," the report states, "the net charge against a pound of wool is about 11 cents. In the other sections, with about 15,000,000 sheep, the net charge against a pound of wool from the merino sheep, which number approximately 5,000,000, is about 19 cents, and the net charge

against the wool grown on sheep of the crossbred type is negligible."[6]

The costs from which the average net charge of 11 cents against wool raised in the western ranges was obtained are shown in Table 1.[7]

TABLE 1.—*Net charge against wool produced in the range states*

Pounds of wool		Receipts		Average net charge against wool per pound
Number	Percentage of total	Percentage from wool	Percentage from other sources	
2,636,297	12.7	47.7	52.3	$0.237
3,836,815	18.5	49.8	50.2	.168
5,459,088	26.3	47.4	52.6	.119
4,665,141	22 5	42 0	58.0	.077
2,293,087	9.0	36.2	63.8	.027
1,874,287	11.0	28.9	71.1	+.039
20,764,713	100.0	43.0	57.0	.109

The costs from which the average net charge of 19 cents against the fine merino wool raised in the eastern states was obtained are shown in Table 2.[8]

TABLE 2.—*Net charge against fine merino wool produced in the eastern states*

Pounds of wool		Receipts		Average net charge against wool per pound
Number	Percentage of total	Percentage from wool	Percentage from other sources	
37,934	6	78	22	$0.42
57,083	10	77	23	.32
90,886	15	71	29	.27
129,169	22	71	29	.22
248,519	42	57	43	.12
29,588	5	38	62	.06
592,979	100	64	36	.19

The conclusion of the Tariff Board that the net charge against wool grown on crossbred flocks in eastern United States is negligible is based on the study of 159,396 pounds of wool. The total receipts from the crossbred flocks investigated were $114,099.74,

[6] *Report of Tariff Board on Schedule K,* pp. 376-377.
[7] *Ibid.,* p. 329.
[8] *Ibid.,* p. 369.

of which 33 per cent was from wool and 67 per cent from other sources. The receipts from sources other than wool a little more than covered the total cost of maintaining the flocks, which leaves the wool "velvet," that is, there was no net charge against it.[9]

There are, then, in the United States three distinct classes of sheep which produce wool at widely varying costs. Before a rate of protection can be agreed upon a national average cost must be fixed. It might be suggested that if the *status quo* is to be maintained absolutely, the rate of protection must be sufficiently high to protect the highest cost. However logical this suggestion may be, it is not practical and the position of the Tariff Board seems reasonable on this point. After giving due weight to the high and the low costs in the United States it concluded that the average net charge against the wool clip of the country is about 9½ cents per pound.[10]

Turning now to the cost of producing wool abroad, the Tariff Board summarized its findings by saying that the average net charge against wool in South America is "between 4 and 5 cents per pound" and that "taking Australasia as a whole it appears that a charge of a very few cents per pound lies against the great clips of that region in the aggregate."[11]

Without questioning, therefore, the possibility of choosing other costs equally entitled to consideration, it seems at least fair to take 9½ cents as the net charge against wool in the United States and 3 cents as the net charge against wool produced by our greatest foreign competitor. These are charges per grease pound. Considering all grades of wool, the shrinkage of American wool may be taken at 60 per cent and of Australian wool at 50 per cent.[12] If now the much debated recommendation of the board to assess the duty on the scoured content of grease wool be accepted, a duty can be calculated. If it costs in the United States 9.5 cents to produce a pound of grease wool shrinking 60 per cent, it will cost 23.75 cents to produce a pound of clean wool; if it costs in Australia 3 cents to produce a pound of wool shrinking 50 per cent, it will cost 6 cents to produce a pound of clean wool. The difference between these two results is 17.75 cents, which is the difference in cost of production per scoured pound of wool between the United States and Australia. If the

[9] *Report of Tariff Board on Schedule K,* p. 369.
[10] *Ibid.,* p. 377.
[11] *Ibid.,* p. 11.
[12] *Ibid.,* pp. 383-385.

legislator desires to levy a flat specific rate, it will require according to this calculation about an 18-cent rate to protect the wool-growing industry in this country without forcing any serious readjustment.

To determine what ad valorem rate will give protection equal to 18 cents per scoured content pound is a complex problem, for obviously the per cent of protection fluctuates with the price. Table 3 presents representative wools and the ad valorem duty equivalent to 17.75 cents.

TABLE 3.—*Ad valorem rate on raw wool*

Grade of wool	Price per scoured pound in 1910	Difference in cost per scoured pound	Per cent of protection needed
Port Philip scoured	$0.487	$0.1775	36.45
Sidney scoured, good	.477	.1775	37.21
South African, very best	.507	.1775	35.01
Sidney scoured, average	.395	.1775	44.94
Australian crossbred, superior	.467	.1775	38.01
Australian crossbred, average	.294	.1775	60.37

Here again much depends upon judgment, for by choosing very high or very low prices widely divergent ad valorem rates can be shown to be required. In Table 3 representative foreign wools have been chosen and the conclusion to be drawn from the table is that 35 per cent, possibly 40 per cent, protection is necessary to protect the existing conditions of the wool-growing industry.

The rates levied on raw wool in the various bills introduced into Congress in the second session of the Sixty-second Congress were:

Cummins bill....18 cents per clean content pound (with proviso that no rate should be over 45 per cent).[13]
Hill bill.....18 cents per clean content pound.[14]
Penrose bill.....18 cents per clean content pound.[15]
Underwood bill..20 per cent ad valorem.[16]
La Follette bill..35 per cent ad valorem.[17]
Compromise bill..29 per cent ad valorem.[18]

[13] *Amendment to H. R. 22195,* proposed July 24, 1912.
[14] *H. R. 22262,* proposed March 22, 1912.
[15] *Amendment to H. R. 22195,* proposed July 27, 1912.
[16] *H. R. 22195,* proposed March 21, 1912.
[17] *Amendment to H. R. 22195,* proposed July 27, 1912.
[18] *H. Rep. No. 1130,* August 2, 1912.

Tops

Tops are combed wool and consist of continuous strands of wool in which the fibres lie more or less parallel. They constitute a distinct product, and in England and on the Continent particularly they are produced by a branch of wool manufacturing as distinct as the operations of spinning and weaving. The Tariff Board shows that the conversion cost[19] of producing tops varies both with the process employed (whether French or English) and with the amount of output. A good illustration of the latter is given in its report. The total production of a combing mill for 25 months of domestic half-blood tops is divided into four periods. In the first period 46.40 per cent of the total output was produced at the cost of 4.91 cents per pound; in the second period 24.19 per cent of the total output was produced at a cost of 6.79 cents per pound; in the third period 16.81 per cent of the total output was produced at a cost of 7.75 cents per pound; and in the fourth period 12.60 per cent of the total output was produced at a cost of 10.05 cents per pound.[20]

"Top making" is a more comprehensive term than "combing." The cost-of-production figures given by the board are for combing and do not include such costs as storage, losses from off-sorts, etc., which a manufacturer making tops alone must take account of. The board does not state to what extent the cost of top making exceeds the cost of combing, so that the opinion of the trade must be resorted to. It seems to be recognized that the cost of top making is 50 per cent greater than of combing and this percentage has been used in determining the costs in this article.

For the purpose of this discussion the costs of combing with English combs has been adopted and allowance has been made for the fluctuations in costs due to fluctuations in output. Table 4

TABLE 4.—*The conversion cost of combing and top making per pound in the U. S.*

Quality of top	Conversion cost of combing	Conversion cost of top making (combing plus 50 per cent)
Unwashed territory, one half blood or above	$0.0760	$0.1140
Australian and domestic, one half blood and above	.0679	.1018
Unwashed territory, three-eighths blood	.0619	.0928
Australian or domestic, three-eighths blood	.0610	.0915
Australian or domestic high, one-quarter blood	.0562	.0843
Quarter blood	.0448	.0672

[19] By conversion cost is meant the cost of converting the raw material into the finished product. It does not include the cost of materials.

[20] *Report of the Tariff Board on Schedule K*, p. 642.

presents the costs of the Tariff Board[21] which seem most nearly to represent the board's conclusions.

The Tariff Board gave no elaborate statistics on the cost of combing and top making abroad. But it felt able, upon the basis of its information, to state the relative positions of the industry in this country and in England. "In view of the facts related," it says in conclusion, "it seems a fair statement that the cost of making tops in the United States is about 80 per cent greater than abroad."[22] For a given product in England, therefore, with a cost of 100 units there would be in the United States a cost of 180 units.

The foregoing conclusions are adhered to in subsequent calculation on the costs of producing tops. In Table 5 the effect of the top duties in the La Follette, Underwood, and Compromise bills are compared with the Tariff Board costs. The conclusions of the table, it should be noted, consider only the differences in conversion costs.

In constructing this table English prices were taken for stand-

TABLE 5.—*The net protection given to tops by the La Follette, Underwood, and Compromise bills compared with the findings of the Tariff Board*

Quality of tops	1 English price (1911)	2 English total cost	3 English top-making conversion cost	4 Cost of wool in one pound of top	5 Compensatory duty: La Follette bill (35 per cent)[1]	6 Compensatory duty: Underw'd bill (20 per cent)[1]	7 Compensatory duty: Compromise bill (29 per cent)[1]
32s	$0.261	$.2486	$0.0374	$0.2112	$0.0739	$0.0422	$0.0612
36s	.269	.2562	.0468	.2094	.0733	.0419	.0607
40s	.274	.2610	.0509	.2101	.0735	.0420	.0609
50s	.360	.3429	.0516	.2913	.1020	.0583	.0845
64s	.533	.5076	.0566	.4510	.1579	.0902	.1308
80s	.593	.5648	.0633	.5015	.1755	.1003	.1454

Quality of tops	8 Protection under: La Follette bill (40 per cent)[2]	9 Protection under: Underwood bill (25 per cent)[2]	10 Protection under: Compromise bill (32 per cent)[2]	11 Protection needed according to Tariff Board
32s	$0.0305	$0.0231	$0.0223	$0.02992
36s	.0343	.0254	.0254	.03744
40s	.0361	.0265	.0268	.04072
50s	.0420	.0317	.0307	.04128
64s	.0553	.0431	.0398	.04528
80s	0617	.0480	.0444	.05064

[1] Total duty on raw wool. [2] Total duty on tops.

[21] *Report of the Tariff Board on Schedule K*, p. 642.

[22] *Ibid.*, pp. 644-645.

ard qualities of tops. The total English cost (column 2) was computed by subtracting from the price an assumed distribution expense and profit of 5 per cent. An objection will be made to this method on the ground that it is "unscientific," but for the purpose of this discussion it is likely to be more accurate than the computation of the total English cost from the prices of raw wool. The English top making conversion costs are computed from the statistics of the Tariff Board; and by subtracting them from the total English cost, the cost of the wool in one pound of top is determined. The compensatory duty in cents under each of the bills is computed by multiplying the figures in column 4 by the ad valorem rate imposed by the respective bills upon raw wool. The English price is then multiplied by the ad valorem rate fixed by each bill on tops and from the result is subtracted the corresponding compensatory duties. This gives the net amount of protection under each bill and is to be compared with the difference in conversion costs between this country and England as determined by the Tariff Board (column 11).

If the prices used in Table 5 had been for a low-price year, the net protection given by each of the bills would have been less than shown. This is, from the point of view of protection, one of the unavoidable disadvantages of ad valorem duties. A given ad valorem rate may be protective when prices are at one level and not protective when they are at another.

In the La Follette, Underwood, and Compromise bills, where the duty on tops was a flat ad valorem rate, it was possible to compute the net protection separately from the compensatory duty. In studying the Penrose and Hill bills, where the duty on the tops was a specific and a compound duty, respectively, a different method must be followed. Table 6 is a comparison of the total

TABLE 6.—*The duties on tops in the Penrose and Hill bills compared with the Tariff Board costs*

Quality of tops	Price in England (1911) per pound	Duty under Penrose bill per pound	Duty under Hill bill per pound	Protection and compensation needed per Tariff Board[1] per pound	Duty under Penrose bill	Duty under Hill bill	Protection and compensation needed
					Per cent	*Per cent*	*Per cent*
32s	$0.261	$0.28	$0.2131	$0.2449	107.28	81.65	93.83
36s	.269	.28	.2135	.2524	104.09	79.37	93.83
40s	.274	.28	.2137	.2557	102.19	77.99	93.32
50s	.360	.28	.2180	.2563	77.78	60.56	71.19
64s	.533	.28	.2267	.2603	52 53	42.53	48.83
80s	.593	.28	.2298	.2656	47.22	38.75	44 79

[1] $0.215 plus difference in Conversion Cost.

protection and compensation given on tops by the Penrose and Hill bills with the total protection and compensation required according to the Tariff Board.

The Penrose bill levies a flat specific rate of 28 cents on tops and the rate under the Hill bill is 20 cents per pound and 5 per cent ad valorem. From these rates the duty in cents per pound is arrived at. In computing the total protection and compensation required according to the Tariff Board 18 cents is adopted as the duty on the clean content of wool and, making allowance for waste, 21½ cents was taken as a fair compensatory duty: that is, the duty which must be assessed in order simply to compensate the domestic top maker for the rise in the price of his raw material due to the 18-cent duty on raw wool. To this compensatory duty was added the difference in conversion cost between here and abroad as set forth in column 11 of Table 5. The last three columns in Table 6 are the preceding three expressed in percentages.

One of the noticeable features of the percentages in Table 6 is the fact that the tops of low quality receive or require a larger duty than the tops of a higher quality. Such a difficulty arises inevitably from a flat specific compensatory duty. In theory, if the rate of duty on raw wool is the same on all grades of wool, the compensatory duty on the manufactured product should be the same on all qualities. In practice, however, a flat specific compensatory duty bears more heavily on the lower than on the higher qualities of product, and it results in a higher ad valorem equivalent on the lower qualities. Apparently, the practical thing to do is to grade the compensatory duties in order to retain, from the point of view of protection, the advantages of specific duties and still eliminate the excessive duties on the lower qualities.

On the basis of the premises of this article, then, what is a fair rate on tops? Table 5 shows that 40 per cent ad valorem is adequate, in most cases, if the duty on raw wool is 35 per cent ad valorem, but a somewhat higher rate is defensible as will be observed from Table 6. A decline in price would, of course, make the calculations of this table useless. From the standpoint of protection, if the duty on raw wool is specific, the duty on tops should also be specific. The conversion cost of tops is, as compared with the material cost, relatively small and their price is affected directly by the price of raw wool. For the protectionist the most desirable method for levying the duty on tops would

seem to be a carefully graded specific duty. If this be conceded and if the duty on raw wool be 18 cents on the clean pound, a duty of 26 or 27 cents per pound of tops of 60s quality, graded both up and down, would undoubtedly be a fair duty—granted of course the premises on which the calculations have been made.

Worsted Yarns

The conversion costs of converting tops into worsted yarns in the United States, as found in the report of the Tariff Board, are summarized in Table 7.

TABLE 7.—*Conversion cost per pound of producing worsted yarns from tops in the U. S.*[23]

Ply and count of yarn . . .	2/28	2/32	2/36	2/38	2/40
Conversion cost per pound . .	$0.1262	$0.1448	$0.1648	$0.1749	$0.1798
Ply and count of yarn . . .	2/42	2/44	2/46	2/48	2/60
Conversion cost per pound . .	$0.1847	$0.2055	$0.2267	$0.2335	$0.3181

After discussing the American costs and comparing them with English costs, the Tariff Board sums up the relative competitive positions of the two countries in the following words:

> In view of the fact that the figures as given for the United States have been put at what may be considered a low figure when compared with the large number of mills from which figures were received, it may be said that, making due allowance for variations on account of quality, etc., the actual manufacturing cost in the United States for turning tops into yarn is about twice what it is in England.[24]

The conversion cost of converting tops into yarns in England, then, may be taken as substantially one half the costs presented in Table 7.

The costs here discussed include those of drawing, spinning, twisting, and spooling, and do not include those of sorting, carding, and combing which were considered under the cost of making tops. It is necessary, therefore, in order to determine the cost of converting raw wool into worsted yarns, to add to the costs of converting tops into yarn the costs of combing. This has been done in making the subsequent tables on yarns. To one who analyses carefully the figures of these tables it will be evident

[23] *Report of the Tariff Board on Schedule K*, p. 649.
[24] *Ibid.*, p. 650.

that the cost of combing alone, not the cost of top making, has been added to the cost of converting tops into yarn, that is, the 50 per cent added to the cost of combing in computing the cost of top making is not here added in computing the total conversion cost of yarn. The reason for this is the fact that some of the costs incidental to a combing establishment are absent where combing is merely one department of a spinning mill.

In Table 8 the net protection on worsted yarns given by the La Follette, Underwood, and Compromise bills is computed and compared with the findings of the Tariff Board.

In Table 8 the total cost of the yarn is computed in substantially the same way as it was computed in the case of tops (Table 5), that is, an allowance of 12½ per cent to cover distribution expenses and profit was taken from the price; from the total cost was subtracted the English conversion cost in order to determine the cost of wool in one pound of yarn (column 5). Column 5 is then multiplied by the rates on raw wool in the respective bills in order to determine the amount of the yarn duty needed for compensation. Columns 9, 10, and 11 are the rates on yarn in the respective bills times the price and less the compensatory duty. The result gives the net protection furnished by each bill and should be compared with the protection needed according to the findings of the Tariff Board (column 12).

The protection on yarns needed according to the Tariff Board in Table 8 is a minimum. The net protection given by even the La Follette bill falls in most cases slightly under the protection required. It may be fairly said that 45 per cent on the basis of 35 per cent on raw wool is not, according to the Tariff Board, sufficient protection. The fact should be noted also that a decline in the price of yarns would, under ad valorem duties, reduce the net protection given.

Table 9 (p. 76) presents the total protection and compensation given by the Penrose and Hill bills, on yarns, and the amount required according to the findings of the Tariff Board.

The yarn duty in the Penrose bill, as shown in column 2, is a graded specific duty—graded according to the count of the yarn. The yarn duty in the Hill bill is a compound duty and the computations for the yarns in the table are shown in column 3. Column 4 shows the protection and compensation in cents required according to the Tariff Board and is made up of a compensatory duty of 23 cents per pound and the difference in conversion costs

TABLE 8.—*The net protection given to worsted yarns by the La Follette, Underwood, and Compromise bills and compared with the findings of the Tariff Board*

1	2	3	4	5	6	7	8	9	10	11	12
Count of yarn	Price of yarn in England (July 27, 1911)	Total cost of yarn	Conversion cost in England from wool to yarn	Cost of wool in one pound of yarn	La Follette bill: Compensatory duty. (35 per cent)[1]	Underwood bill: Compensatory duty (20 per cent)[1]	Compromise bill: Compensatory duty (29 per cent)[1]	Protection given by La Follette bill (45 per cent)[2]	Protection given by Underwood bill (30 per cent)[2]	Protection given by Compromise bill (35 per cent)[2]	Protection needed according to Tariff Board
2/32s	$0.4157	$0.3695	$0.0973	$0.2722	$0.0953	$0.0544	$0.0789	$0.0918	$0.0703	$0.0666	$0.0923
2/36s	.4714	.4191	.1136	.3055	.1069	.0611	.0886	.1052	.0803	.0764	.1074
2/40s	.5120	.4551	.1238	.3313	.1160	.0663	.0961	.1144	.0873	.0831	.1170
2/48s	.7097	.6308	.1512	.4796	.1679	.0959	.1391	.1515	.1170	.1093	.1443
2/60s	.8111	.7210	.1968	.5242	.1835	.1048	.1520	.1815	.1385	.1319	.1893
2/80s	1.1761	1.0454	.2724	.7730	.2706	.1546	.2242	.2586	.1982	.1874	.2620

[1] Total duty on raw wool.

[2] Total duty on yarn.

TABLE 9.—*The total duties on worsted yarns under the Penrose and Hill bills compared with the findings of the Tariff Board*

Count of yarn	1 Price of yarn in England July 27, 1911	2 Duty under Penrose bill	3 Duty under Hill bill	4 Protection and compensation needed according to Tariff Board on basis of 18-cent wool[1]	5 Duty under Penrose bill	6 Duty under Hill bill	7 Protection and compensation needed according to Tariff Board
		Cents per pound	*Cents per pound*	*Cents per pound*	*Per cent*	*Per cent*	*Per cent*
2/32s	$0.4157	$0.390	$0.2774	$0.3223	93.82	66.73	77.53
2/36s	.4714	.400	.2857	.3374	84.85	60.61	71.57
2/40s	.5120	.410	.3174	.3470	80.08	61.99	67.77
2/48s	.7097	.442	.3569	.3743	62 28	50.29	52.74
2/60s	.8111	.490	.4178	.4193	60.41	51.51	51.70
2/80s	1.1761	.570	.5090	.4920	48.47	43.28	41 83

[1] $0.23 plus difference Conversion Cost.

for yarns as found in column 12 of Table 8. It will be noticed that this compensatory duty is higher than the one recommended by the board when the duty on raw wool is 18 cents.[25] This is a concession to the critics of the board who said that the compensatory duty should be based, not on the scoured content of grease wool, but on the duty on scoured wool which in a bill with a duty of 18 cents on the scoured content of grease wool would be at least 19 cents. In this article, therefore, the benefit of the doubt on this point has been resolved in favor of the manufacturer and the compensatory duty has been based on the recommendations of the board for a raw wool duty of 19 cents.[26] Columns 5, 6, and 7 are columns 2, 3, and 4 expressed in percentages. Here it is found, as in considering the top duties of these bills, that the duties are much heavier on the low grade yarns than on the higher. This defect can be corrected by properly grading the specific part of the duties.

Considering all the bills studied the method of levying the duties on yarns in the Penrose bill is the most desirable from the point of view of protection. "Yarns," the Tariff Board says, "are comparatively well standardized and their cost varies in a certain regular relation to the fineness or count of the yarn. It is a simple matter, then, to adopt the specific system in this particular case. A duty can be assessed on No. 1 yarn and be made to increase by a certain proportion with each additional count of yarn."[27] These suggestions were followed by the framers of the Penrose bill. By referring to Table 9 it will be observed that a rate of 41 or 42 cents per pound on 2/60s is approximately in accord with the findings of the Tariff Board. This rate should be graded up and down according to the count of the yarn.

An ad valorem rate on yarns is, from a protective point of view, inadvisable, but if it is adopted the rate should be at least 50 per cent on the basis of 35 per cent wool. It was evident from Table 8 that the 45 per cent given by the La Follette bill was scarcely ample to cover the minimum difference in conversion cost.

Woolen and Worsted Fabrics

When the question of the duty on woolen and worsted fabrics is taken up, a field is entered upon vastly more complicated than

[25] *Report of the Tariff Board on Schedule K,* p. 626.
[26] *Ibid.,* p. 626.
[27] *Ibid.,* p. 710.

that of tops and yarns. In investigating the cost of weaving, the Tariff Board chose 55 samples of woolen and worsted fabrics which included samples of all the standard varieties used for men's and women's wear. The board, in the first place, obtained the actual weaving cost of each fabric from the mill originally making it; in the next place, it submitted the various samples to foreign and domestic manufacturers making similar goods, and obtained from them, after their books had been studied by the board's agents, the cost at which they could make the fabrics. The figures were checked and compared and the record of each sample written up.[28] The board contented itself with giving the costs of converting yarn into cloth and it made no effort to report specifically on the conversion costs of the tops and yarns used in the making of the fabrics. Nor did it attempt to connect its investigation of weaving costs with its costs of combing and spinning. An effort will here be made to do this. In Table 10 the difference in conversion costs between this country and abroad for the samples reported on by the Tariff Board is calculated from the raw wool through combing and spinning to the finished fabrics. Those samples on which no English costs were obtained are not included. In this table the classification of the Hill bill has been adopted, not necessarily because it is the last word on classification, but because it was the one most discussed in the Sixty-second Congress.

The unit of measure in Table 10 is one pound of cloth. Before the difference in conversion costs of the tops and yarn entering into a pound of cloth could be computed, it was necessary to determine how much waste there is in combing and spinning. It should be clear that, because of the wastes in these processes, it requires more than a pound of yarn to make a pound of cloth and more than a pound of top to make a pound of worsted yarn. The conversion cost of the material wasted, however, must be considered in calculating the total conversion cost of a fabric. At best the method by which the figures in Table 10 were computed is complex. The best way to make it clear is to take one sample and follow it through all the computations.

Sample No. 22 is a men's blue serge weighing 14 ounces to the yard. In making the yarn required to make one pound of this fabric approximately 1.24 pounds of top were consumed. The difference in the conversion costs, between this country and Eng-

[28] *Report of the Tariff Board in Schedule K,* pp. 651-690.

TABLE 10.—*The ad valorem duty necessary to cover the difference*
pages 651 to 690 of the Tariff Board's

Sample No.	Name of cloth	1 Weight ozs. per yd.	2 Difference in conversion cost for top in 1 lb. of cloth	3 Difference conversi cost for y in 1 lb. cloth
	Valued at not more than 40 cents per pound			
4	Women's cotton warp sacking	8.5	.....	$0.0414
13	Men's fancy woolen suiting.....	16.0	.....	.0418
	Valued at more than 40 and not more than 60 cents per pound			
14	Fancy woolen overcoating.....	18.5	.....	.0477
21	Fancy woolen overcoating.....	16.0	.....	.0396
28	Men's fancy woolen suiting.....	13.0	$0.0049	.0570
	Valued at more than 60 and not more than 80 cents per pound			
1	Worsted Panama	4.2	.0438	.0698
2	Fancy cotton worsted.....	6.7	.0077	.0327
3	Brilliantine	3.7	.0290	.0496
8	Women's homespun.....	8.2	.....	.0696
9	Woolen tweed	12.2	.0007	.0699
12	Women's worsted serge.....	9.0	.0438	.0715
15	Women's worsted cheviot.....	10.0	.0431	.0706
16	Covert	11.6	.....	.0767
22	Men's blue serge.....	14.0	.0434	.0646
23	Men's blue worsted serge.....	12.0	.0410	.0623
25	Fancy cassimere.....	16.0	.....	.0542
27	Women's cheviot.....	13.0	.0441	.0402
32	Fancy fine woolen.....	12.0	.....	.0765
34	Fancy worsted suiting.....	11.5	.0420	.0728
41	Black thibet.....	17.0	.....	.0366
	Valued at more than 80 cents and not more than $1. per pound			
10	Women's all-wool blue serge.....	7.5	.0488	.0777
17	Women's all-wool sacking.....	10.5	.....	.0623
24	Fancy cotton warp worsted.....	13.0	.0220	.0599
26	Fancy cotton warp worsted.....	11.2	.0264	.0663
30	Fancy worsted.....	14.0	.0500	.0664
33	Covert wool	14.0	.....	.1000
37	Men's black clay worsted.....	16.0	.0484	.0671
44	Woolen overcoating.....	24.0	.....	.0803
46	Uniform	21.0	.....	.0640
	Valued at more than $1. and not more than $1.50 per pound			
5	All-wool batiste.....	2.6	.0496	.1350
6	All-wool Panama.....	4.7	.0468	.1244
7	All-wool batiste.....	3.7	.0476	.1212
20	Women's all-wool broadcloth.....	9.3	.....	.1100
36	Men's blue serge.....	18.0	.0528	.0757
38	Fancy worsted suiting.....	11.5	.0460	.0750
42	Men's light weight blue serge.....	13.0	.0488	.1111
45	Men's fancy half worsted suiting...	13.2	.0216	.1124
47	Black unfinished worsted.....	15.0	.0492	.1007
48	Men's unfinished worsted.....	14.0	.0488	.1150
49	Men's serge.....	13.0	.0488	.0972
	Valued at more than $1.50 per pound			
52	Silk mixed worsted.....	14.2	.0500	.1602
53	Men's unfinished worsted.....	14.5	.0484	.2389

fference in conversion costs for the samples reported on oard's report on Schedule K

3 Difference in conversion cost for yarn in 1 lb. of cloth	4 Difference in weaving conversion cost per lb. of cloth	5 Total difference in conversion cost of 1 lb. of cloth (2+3+4)	6 Price (English total cost plus 17½ per cent) per lb.	7 Ad valorem rate necessary to cover difference in conversion cost (5 ÷ 6)
				Per cent
$0.0414	$0.077	$0.1184	$0.3971	29.82
.0418	.088	.1295	.3905	33.16
.0477	.087	.1347	.4116	32.72
.0396	.128	.1676	.5166	32.45
.0570	.180	.2419	.5900	41.00
.0698	.152	.2656	.6872	38.65
.0327	.099	.1394	.6285	22.18
.0496	.174	.2526	.7715	32.74
.0696	.131	.2006	.7774	25.80
.0699	.100	.1706	.6368	26.79
.0715	.161	.2763	.7209	38.33
.0706	.168	.2817	.6869	41.01
.0767	.141	.2177	.7731	28.16
.0646	.117	.2250	.6594	34.12
.0623	.175	.2783	.7364	37.79
.0542	.131	.1852	.6423	28.83
.0402	.179	.2633	.6888	38.23
.0765	.253	.3295	.7844	42.01
.0728	.240	.3548	.7701	46.07
.0366	.146	.1826	.7752	23.56
.0777	.203	.3295	.8467	38.92
.0623	.160	.2223	.8356	26.60
.0599	.189	.2008	.9496	21.15
.0663	.200	.2927	.8687	33.70
.0664	.169	.2854	.9414	30.32
.1000	.177	.2770	.9176	30.18
.0671	.156	.2715	.9895	27.44
.0803	.118	.1983	.8257	24.02
.0640	.152	.2160	.9844	21.94
.1350	.384	.5686	1.4363	39.59
.1244	.238	.4092	1.1489	35.62
.1212	.305	.4738	1.3038	36.34
.1100	.194	.3040	1.0181	29.86
.0757	.130	.2585	1.1489	22.50
.0750	.271	.3920	1.2140	32.29
.1111	.258	.4179	1.2293	34.00
.1124	.246	.3800	1.3548	28.05
.1007	.237	.3869	1.1471	33.73
.1150	.228	.3918	1.0998	35.62
.0972	.264	.4100	1.1050	37.10
.1602	.444	.6542	1.6642	39.31
.2389	.391	.6783	1.6000	42.39

TABLE 11.—*The duties on woolen and worsted fabrics under the Hill bill (H*

		1	2	3	4
Sample No.	Classification	Weight in ounces per yard	Price per pound	Per cent of wool in cloth	Compensatory duty based on rate of 18 cents on scoured content of woo
	Valued at not more than 40 cents per pound				
4		8.5	$0.3971	41.7	$0.1043
13		16.0	.3905	41.1	.1028
	Valued at more than 40 cents and not more than 60 cents per pound				
14		18.5	.4116	100.0	.2600
21		16.0	.5166	100.0	.2600
28		13.0	.5900	100.0	.2600
	Valued at more than 60 cents and not more than 80 cents per pound				
1		4.2	.6872	100.0	.2600
2		6.7	.6285	17.2	.0447
3		3.7	.7715	68.7	.1786
8		8.2	.7774	100.0	.2600
9		12.2	.6368	100.0	.2600
12		9.0	.7209	100.0	.2600
15		10.0	.6869	100.0	.2600
16		11.6	.7731	100.0	.2600
22		14.0	.6594	100.0	.2600
23		12.0	.7364	100.0	.2600
25		16.0	.6423	100.0	.2600
27		13.0	.6888	100.0	.2600
32		12.0	.7844	100.0	.2600
34		11.5	.7701	100.0	.2600
41		17.0	.7752	100.0	.2600
	Valued at more than 80 cents and not more than $1 per pound				
10		7.5	.8467	100.0	.2600
17		10.5	.8356	100.0	.2600
24		13.0	.9496	52.3	.1360
26		11.2	.8687	48.1	.1251
30		14.0	.9414	100.0	.2600
33		14.0	.9176	100.0	.2600
37		16.0	.9895	100.0	.2600
44		24.0	.8257	100.0	.2600
46		21.0	.9844	100.0	.2600
	Valued at more than $1 and not more than $1.50 per pound				
5		2.6	1.4362	100.0	.2600
6		4.7	1.1489	100.0	.2600
7		3.7	1.3038	100.0	.2600
20		9.3	1.0181	100.0	.2600
36		18.0	1.1489	100.0	.2600
38		11.5	1.2140	100.0	.2600
42		13.0	1.2293	100.0	.2600
45		13.2	1.3548	100.0	.2600
47		15.0	1.1471	100.0	.2600
48		14.0	1.0998	100.0	.2600
49		13.0	1.1050	100.0	.2600
	Valued at more than $1.50 per pound				
52		14.2	1.6642	100.0	.2600
53		14.5	1.6000	100.0	.2600

e Hill bill (H. R. 22262) compared with the findings of the Tariff Board

	4	5	6	7	8	9	10	11
						Protection and compensation required according to Tariff Board		
of oth	Compensatory duty based on rate of 18 cents on scoured content of wool	Ad valorem rate under Hill bill	Ad valorem duty in cents	Total duty under Hill bill in cents	Total duty under Hill bill	Compensatory duty	Protective duty	Total duty
		Per cent			*Per cent*	*Per cent*	*Per cent*	*Per cent*
	$0.1043	30	$0.1191	$0.2234	56.26	26.27	29.82	56.09
	.1028	30	.1172	.2200	56.34	26.33	33.16	59.49
	.2600	35	.1441	.4041	98.18	63.17	32.72	95.89
	.2600	35	.1808	.4408	85.33	50.33	32.45	82.78
	.2600	35	.2065	.4665	79.07	44.07	41.00	85.07
	.2600	40	.2749	.5349	77.84	37.83	38.65	76.48
	.0447	40	.2514	.2961	47.11	7.11	22.18	29.29
	.1786	40	.3086	.4872	63.15	23.15	32.74	55.89
	.2600	40	.3110	.5710	73.45	33.44	25.80	59.24
	.2600	40	.2547	.5147	80.83	40.83	26.79	67.62
	.2600	40	.2884	.5484	76.07	36.07	38.33	74.40
	.2600	40	.2748	.5348	77.86	37.85	41.01	78.86
	.2600	40	.3092	.5692	73.63	33.63	28.16	61.79
	.2600	40	.2638	.5238	79.44	39.43	34.12	73.55
	.2600	40	.2946	.5546	75.31	35.31	37.79	73.10
	.2600	40	.2569	.5169	80.48	40.48	28.83	69.31
	.2600	40	.2755	.5355	77.74	37.75	38.23	75.98
	.2600	40	.3138	.5738	73.15	33.15	42.01	75.16
	.2600	40	.3080	.5680	73.76	33.76	46.07	79.83
	.2600	40	.3101	.5601	72.25	33.54	23.56	57.10
	.2600	45	.3810	.6410	75.71	30.71	38.92	69.63
	.2600	45	.3760	.6360	76.11	31.12	26.60	57.72
	.1360	45	.4273	.5633	59.32	14.32	21.15	35.47
	.1251	45	.3909	.5160	59.40	14.40	33.70	48.10
	.2600	45	.4236	.6836	72.62	27.62	30.32	57.94
	.2600	45	.4129	.6729	73.33	28.33	30.18	58.51
	.2600	45	.4453	.7053	71.28	26.28	27.44	53.72
	.2600	45	.3716	.6316	76.49	31.49	24.02	55.51
	.2600	45	.4430	.7030	71.41	26.41	21.94	48.35
	.2600	50	.7181	.9781	68.10	18.10	39.59	57.69
	.2600	50	.5745	.8345	72.63	22.63	35.62	58.25
	.2600	50	.6519	.9119	69.94	19.94	36.34	56.28
	.2600	50	.5091	.7691	75.54	25.54	29.86	55.40
	.2600	50	.5745	.8345	72.63	22.63	22.50	45.13
	.2600	50	.6070	.8670	71.42	21.42	32.29	53.71
	.2600	50	.6147	.8747	71.15	21.15	34.00	55.15
	.2600	50	.6774	.9374	69.19	19.19	28.05	47.24
	.2600	50	.5736	.8336	72.67	22.67	33.73	56.40
	.2600	50	.5499	.8099	73.64	23.64	35.62	59.26
	.2600	50	.5525	.8125	73.53	23.53	37.10	60.63
	.2600	55	.9153	1.1753	70.62	15.62	39.31	54.93
	.2600	55	.8800	1.1400	71.25	16.25	42.39	58.64

land, of the top in this fabric is 3.5 cents per pound and the corresponding cost for 1.24 pounds is 4.34 cents. By this means all the figures in column 2 were computed.

In making one pound of sample No. 22 approximately 1.13 pounds of worsted yarns were used—.60 of a pound were used in the warp and .53 of a pound were used in filling; 2/24s were used in the warp. According to the Tariff Board the difference in conversion cost between this country and England of 2/24s is 6.31 cents per pound and the corresponding figure for .60 of a pound would be 3.79 cents; 1/12s were used in the filling. While no cost was given for 1/12s by the Tariff Board, a fair estimate on the basis of the costs given would make the difference in conversion cost between this country and abroad for one pound of this yarn 5.04 cents and the corresponding cost for .53 of a pound would be 2.67 cents. Adding 3.79 cents and 2.67 cents the result is 6.46 cents—the difference in conversion costs between this country and abroad of making the yarn in one pound of sample No. 22. This method of calculating the yarn costs was followed in the case of each sample and the results are to be found in column 3.

The American weaving cost for sample No. 22 was 22.2 cents per yard and the English weaving cost was 11.93 cents per yard.[29] The latter cost was subtracted from the former in order to obtain the difference in the weaving conversion costs per yard between this country and abroad. This difference per yard was then reduced to the corresponding difference per pound or 11.7 cents. In this manner each of the costs in column 4 of Table 10 was computed.

Column 5 is the sum of columns 2, 3, and 4 and shows the total difference in cents per pound between this country and England of converting wool through all the processes into finished cloth. For sample No. 22 this cost is 22.5 cents.

It next became necessary to determine the price on which the duty would be assessed if the fabric in question were imported. Under the present administration of the customs, this price would of course be the foreign price. The Tariff Board did not give prices for the samples under discussion, but it did give the total costs. Upon the basis of the total cost the price is computed. Recurring to sample No. 22: The total English cost, *i. e.*, both material and conversion costs, for this sample was 49.11 cents per

[29] *Report of the Tariff Board on Schedule K*, p. 665.

yard.[30] This total cost per yard was reduced to the total cost per pound and to it was added 17½ per cent of itself in order to determine a figure on which the duty should be assessed. This method is employed by the customs officials when goods are billed to this country at cost; and 17½ per cent is a fair allowance for distribution expenses and profit. For sample No. 22 the figure on which the duty would be assessed is 65.94 cents per pound. This is the way column 6 was made up.

Column 7 is the real object of all the computations in Table 10. It is the per cent which column 5 is of column 6; in other words, it is the total difference in conversion costs between this country and England expressed in percentage. If, then, a duty were being levied just adequate to offset the disadvantages of the American manufacturer arising from the difference in conversion costs alone between here and England of sample No. 22, the ad valorem rate would be 34.12 per cent. This duty, of course, does not provide for compensation on account of a duty on raw wool.

There are certain other observations to be made concerning the method by which Table 10 was constructed. No effort was made to work out the top costs in column 2 according to the particular qualities of top in the warf and weft. For the purpose of avoiding confusion and possible inaccuracy, the difference in the conversion costs, between this country and England, of one pound of tops of the lower qualities was taken at 3.5 cents and of one pound of the higher qualities at 4 cents. These costs correspond approximately to the results of the discussion of tops above. Such variations as occur in column 2 are due to variations in the amount of top used in making one pound of each fabric. Whenever the spaces are blank in column 2, the fabrics considered are woolens, as distinguished from worsteds, and no tops were used in their manufacture. Whenever the fabric considered was in part worsted, only the actual tops used were considered.

In some cases in the construction of Table 10 it was necessary to make use of information generally familiar to manufacturers, but not found in the report of the Tariff Board. This was true in proportioning the material in a pound of cloth between the warp and weft and in some cases in estimating the amount of loss of material in the various processes. In obtaining the costs of all the various kinds of yarns used in the construction of the sample under discussion several sources of information had to be resorted

[30] *Ibid.*, p. 665.

TABLE 13.—*Rates of the Underwood, La Follette, and Compromise bills applied Tariff Board*

Sample No.	Name of cloth	1	2	3	4
				UNDERWOOD	
					Per cent
		Price on which duty is assessed per yard	Cost of raw material per cent	Compensatory duty	Protective duty
1	Worsted Panama	$0.18	53	11	29
5	All wool batiste	.23	56	11	29
6	All wool Panama	.34	61	12	28
7	All wool batiste	.30	60	12	28
8	Women's homespun	.40	70	14	26
9	Woolen tweed	.49	70	14	26
10	Women's all-wool blue serge	.40	60	12	28
12	Women's worsted serge	.41	57	11	29
14	Fancy woolen overcoating	.48	67	13	27
15	Women's worsted cheviot	.43	55	11	29
16	Covert	.56	65	13	27
17	Women's all-wool sacking	.55	68	14	26
20	Women's all-wool broadcloth	.59	67	13	27
21	Fancy woolen overcoating	.52	71	14	26
22	Men's blue serge	.58	55	11	29
23	Men's blue worsted serge	.55	60	12	28
25	Fancy cassimere	.64	69	14	26
27	Women's cheviot	.56	62	12	28
28	Men's fancy woolen suiting	.48	63	13	27
30	Fancy worsted	.82	67	13	27
32	Fancy fine woolen	.59	67	13	27
33	Covert wool	.80	67	13	27
34	Fancy worsted suiting	.55	55	11	29
36	Men's blue serge	1.29	72	14	26
37	Men's black clay worsted	.99	68	14	26
38	Fancy worsted suiting	.87	72	14	26
41	Black thibet	.82	65	13	27
42	Men's light weight blue serge	1.00	66	13	27
44	Woolen overcoating	1.24	71	14	26
45	Men's fancy half-worsted suiting	1.12	70	14	26
46	Uniform	1.29	75	15	25
47	Black unfinished worsted	1.08	66	13	27
48	Men's unfinished worsted	.96	58	12	28
49	Men's serge	.90	63	13	27
52	Silk mixed worsted	1.48	65	13	27
53	Men's unfinished worsted	1.45	51	10	30

l to samples in the Tariff Board report on pages 651-690 and compared with l findings

5	6	7	8	9	10	11
) BILL	LA FOLLETTE BILL			COMPROMISE BILL		
	Per cent			Per cent		
Needed ad valorem to cover conversion cost	Compensatory duty	Protective duty	Needed ad valorem to cover conversion cost	Compensatory duty	Protective duty	Needed ad valorem to cover conversion cost
39	18	37	39	15	34	39
40	20	35	40	16	33	40
36	21	34	36	18	31	36
36	21	34	36	17	32	36
26	24	31	26	20	29	26
27	25	30	27	20	29	27
39	21	34	39	17	32	39
38	20	35	38	17	32	38
33	24	31	33	19	30	33
41	19	36	41	16	33	41
28	23	32	28	19	30	28
27	24	31	27	20	29	27
30	23	32	30	19	30	30
32	25	30	32	21	28	32
34	19	36	34	16	33	34
38	21	34	38	17	32	38
29	24	31	29	20	29	29
38	22	33	38	18	31	38
41	22	33	41	18	31	41
30	24	31	30	19	30	30
42	23	32	42	19	30	42
30	24	31	30	20	29	30
46	19	36	46	16	33	46
23	25	30	23	21	28	23
27	24	31	27	20	29	27
32	25	30	32	21	28	32
24	23	32	24	19	30	24
34	23	32	34	19	30	34
24	25	30	24	21	28	24
28	25	30	28	20	29	28
22	26	29	22	22	27	22
34	23	32	34	19	30	34
36	20	35	36	17	32	36
37	22	33	37	18	31	37
39	23	32	39	19	30	39
42	18	37	42	15	34	42

TABLE 12.—*The duties on woolen and worsted fabrics under the*

Sample No.	Classification	1 Weight in ounces per yard	2 Price per pound	3 Compu tory in bi po
	Valued at more than 30 cents and not more than 40 cents per pound			
4		8.5	$0.3971	$0.2
13		16.0	.3905	.2
	Valued at more than 40 cents and not more than 50 cents per pound			
14		18.5	.4116	.2
	Valued at more than 50 cents and not more than 60 cents per pound			
21		16.0	.5166	.2
28		13.0	.5900	.2
	Valued at more than 60 cents and not more than 80 cents per pound			
1		4.2	.6872	.3
2		6.7	.6285	.3
8		8.2	.7774	.3
9		12.2	.6368	.3
12		9.0	.7209	.3
15		10.0	.6869	.3
16		11.6	.7731	.3
22		14.0	.6594	.3
23		12.0	.7364	.3
25		16.0	.6423	.3
27		13.0	.6888	.3
32		12.0	.7844	.3
34		11.5	.7701	.3
41		17.0	.7752	.3
	Valued at more than 80 cents per pound			
10		7.5	.8467	.3
17		10.5	.8356	.3
24		13.0	.9496	.3
26		11.2	.8687	.3
30		14.0	.9414	.3
33		14.0	.9176	.3
37		16.0	.9895	.3
44		24.0	.8257	.3
46		21.0	.9844	.3
20		9.3	1.0181	.3
36		18.0	1.1489	.3
38		11.5	1.2140	.3
42		13.0	1.2293	.3
45		13.2	1.3548	.3
47		15.0	1.1471	.3
48		14.0	1.0998	.3
49		13.0	1.1050	.3
52		14.2	1.6642	.3
53		14.5	1.6000	.3

Penrose bill compared with the findings of the Tariff Board

3 pensa- duty ll per und	4 Ad valorem rate in bill per cent	5 Ad valorem duty in cents	6 Total duty in cents un- der Penrose bill	7 Total duty in per cent under Pen- rose bill	8 Total duty in per cent required by Tariff Board
0	35	$0.1390	$0.3390	85.37	56.09
0	35	.1367	.3367	86.22	59.49
4	45	.1852	.4252	103.30	95.89
8	45	.2325	.5125	99.21	82.78
8	45	.2655	.5455	92.46	85.07
2	50	.3436	.6636	96.57	76.48
2	50	.3143	.6343	100.92	29.29
2	50	.3887	.7087	91.16	59.24
2	50	.3184	.6384	100.25	67.62
2	50	.3605	.6805	94.40	74.40
2	50	.3435	.6635	96.59	78.86
2	50	.3866	.7066	91.40	61.79
2	50	.3297	.6497	98.53	73.55
2	50	.3682	.6883	93.45	73.10
2	50	.3212	.6412	99.83	69.31
2	50	.3444	.6644	96.46	75.98
2	50	.3922	.7122	90.80	75.16
2	50	.3851	.7051	91.56	79.83
2	50	.3876	.7076	91.28	57.10
5	55	.4657	.8157	96.34	69.63
5	55	.4596	.8096	96.89	57.72
5	55	.5223	.8723	91.86	35.47
5	55	.4778	.8278	95.29	48.10
	55	.5178	.8678	92.18	57.94
	55	.5047	.8547	93.15	58.51
	55	.5442	.8942	90.37	53.72
	55	.4541	.8041	97.38	55.51
	55	.5414	.8914	90.55	48.35
	55	.5600	.9100	89.38	55.40
	55	.6319	.9819	85.46	45.13
	55	.6677	1.0177	83.83	53.71
	55	.8761	1.2261	99.74	55.15
	55	.7451	1.0951	80.83	47.24
	55	.6309	.9809	85.51	56.40
	55	.6049	.9549	86.82	59.26
	55	.6078	.9578	86.68	60.63
	55	.9153	1.2653	76.03	54.93
	55	.8800	1.2300	76.88	58.64

to. The costs of producing worsted yarns were taken from the report on Schedule K and in those cases where costs were not given for particular counts, the costs of these were estimated on the basis of the costs given. The costs of cotton yarns (when a part of a sample) were taken from the Tariff Board's report on Schedule I.[31] No costs of carded woolen yarns are given by the Tariff Board, but it is generally recognized in the trade that the conversion cost of these yarns in the United States is one half cent a cut and in the absence of anything better, this estimate has been used here.

These detailed explanations of Table 10 have been made for the purpose of being frank with the reader. Differences of opinion unavoidably arise in a subject as complicated as the one under consideration. There is no desire to force any conclusions on the reader and therefore the methods of computation are set forth plainly and the result left to the judgment of him who reads.

The Hill bill (known officially as the Payne bill), prepared by Congressman Hill of Connecticut, was a careful attempt to frame a wool bill based on the findings of the Tariff Board. It received the unanimous support of the Republican minority in the House, but was repudiated by the Republican senators. Table 11 shows the duties on woolen and worsted fabrics under the Hill bill and compares them with the compensation and protection required by the Tariff Board report.

The Hill bill provides that the compensatory duty on fabrics shall be levied only upon the "wool contained therein." This idea was not recommended by the Tariff Board, but it was generally in favor among the advocates of lower duties. It only in part cures one of the evils of the present law—that of excessive duties on cheap fabrics—since shoddy goods still pay the whole of the compensatory duty. A graded specific duty would without doubt be more equitable. Since it was adopted, however, by Congressman Hill, it is taken into consideration in Table 11. Column 3 shows six fabrics containing less than 100 per cent of wool and the compensatory duty in column 4 is calculated only on the actual wool content. Congressman Hill followed the recommendations of the Tariff Board both as to the amount of the compensatory duty[32] and as to grading the ad valorem duties on cloth.[33] In

[31] *H. Doc.* No. 643, 62 Cong., 2 Sess.
[32] *Report of the Tariff Board on Schedule K,* p. 626.
[33] *Ibid.,* p. 710.

Table 10 the total duty in cents under the Hill bill is calculated and then reduced to a percentage (column 8).

Columns 9, 10, and 11 in Table 11 show the compensation and protection required according to the findings of the Tariff Board. In finding the percentages in column 9 the Hill compensatory duties (column 4) were assumed to correspond with the recommendations of the Tariff Board, which is true with the exceptions of the six fabrics containing cotton. Column 10 is taken from column 7 of Table 10. When the percentages in column 8 are compared with those in column 11, it will be seen that the duties under the Hill bill are substantially in harmony with the findings of the Tariff Board.

The conservative Republicans of the Senate knew, as did anyone familiar with the situation, that a revision of Schedule K proposed by the majority of the Finance Committee had not the slightest chance of passage. Certain conservative Republicans, however, desired to put themselves on record and the Penrose bill was the result. In this bill a new classification of fabrics was adopted; dress goods were, as in the present law, put in a separate paragraph; and the compensatory duty was graded. Table 12 is a study of the Penrose bill as Table 11 was a study of the Hill bill, and, coming after the discussion of the latter, the former will be clear with a very few comments. Column 7 shows the total duty on each sample under the rates of the Penrose bill and, if compared with the findings of the Tariff Board in column 8, it will be evident that the rates in the bill are excessive.

When attention is turned away from the Penrose and Hill bills, in which the cloth duties are compound duties, to the La Follette, Underwood, and Compromise bills in which the cloth duties are ad valorem duties a new method of treatment must be adopted. The rates on raw wool and cloth in the La Follette bill were 35 per cent and 55 per cent respectively; in the Underwood bill 20 per cent and 40 per cent respectively; and in the Compromise bill 29 per cent and 49 per cent respectively. Table 13 is for the purpose of showing the net protection in per cent given to cloth by each of these bills and to compare this net protection with the protection required, according to the Tariff Board, to offset the difference in conversion cost between this country and England.

Column 2 in Table 13 gives the per cent the material cost in

each fabric is of the total cost, and is used as a basis for computing the compensatory duty under the respective bills. The net protection given by each bill is then determined by subtracting the compensatory duty in per cent from the actual duty levied on cloth by each bill and the result is compared with the needed ad valorem protection according to the computations which were made in Table 10. The method by which the table was constructed will be made clearer by an example. Of the total cost of sample No. 22, 55 per cent is material cost. The rate on raw wool in the Underwood bill is 20 per cent, and 20 per cent of 55 per cent is 11 per cent, the proportion of the Underwood duty on cloth required to compensate the manufacturer for the rise in price of his raw material, due to the 20 per cent duty on raw wool. The 11 per cent is then subtracted from 40 per cent (the Underwood duty on cloth) to obtain the net protection under this bill (column 4). The same method was pursued in making the computations for the La Follette and Compromise bills. If a flat ad valorem rate on cloth be admitted desirable, Table 13 seems to show that the La Follette rate of 55 per cent with 35 per cent on raw wool is substantially in harmony with the findings of the Tariff Board, although from a protection point of view 60 per cent would be more nearly correct. The other two bills are clearly too low.

It is stated in good faith by men intimately acquainted with wool manufactures in the United States that the industry cannot exist with anything less than a prohibitive duty. If this proposition be accepted, the rates on cloth in the Penrose bill can be defended; it is also true that a different method of calculation would have to be pursued in interpreting the statistics of the Tariff Board. It was assumed at the beginning of this article, however, that a competitive rather than a prohibitive tariff was to be framed and that the rates desired were simply to equalize competitive conditions for the American manufacturers on the basis of the existing economic organization. It is believed that the general level of rates on cloth in the Hill bill is defensible from this standpoint. The method of levying the compensatory duty in the Penrose bill is more commendable than that of the Hill bill. A carefully graded specific compensatory duty would remove the excessive duty on the cheaper fabrics and still preserve the desirable features from the protection point of view of specific duties.

Much useless debate would be prevented if men would consider their tariff theories more carefully. It is useless for a protectionist Republican and a tariff-for-revenue Democrat to debate the desirability of the rates in a particular bill; they should debate premises, not conclusions. The conclusions of this article, therefore, should be judged in the light of the premises laid down at the beginning. No one of the bills considered is desirable from all points of view. The Underwood bill may be desirable from the standpoint of the Democrats but undesirable from the standpoint of the protectionist. And so with each one of the bills. This point at least should be clear from this discussion.

Public men and economists have not sufficiently appreciated the services of the Tariff Board. These services were obscured by political animosities, aggravated by attacks made upon the board for personal and party reasons. He who wishes to pick flaws in the Tariff Board's report on Schedule K can do so with ease. Viewing its work constructively, however, it may be fairly said that the board did more for an honest, scientific revision than all the committee hearings and investigations which preceded it. However unsatisfactory its work may be in the eyes of some of its critics, the fact remains that its work is infinitely more satisfactory to the impartial observer than the work of the committees of Congress. Its faults are chiefly those of omission. It came to its work without a precedent in this country or abroad to guide it, and every step in the work presented difficult problems. When the time comes, as soon it will, for Congress to establish a permanent tariff commission, this commission will take up the work where the Tariff Board left it, and perhaps only then will be realized the worth of the public service of the members of the Tariff Board.

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