

THE COPPER AND BRASS TRADE (SMELTING, ROLLING, ETC.)

INTRODUCTORY

This trade comprises firms that were engaged wholly or mainly in the smelting, rolling, etc., of copper, brass and other alloys of copper (except nickel alloys). Firms whose chief business was the production of finished goods of brass or of wire of non-ferrous metals are dealt with in separate reports (*see* pages 506 and 144).

Owing to the receipt of additional information, some of the figures previously published for the year 1934 have been revised.

Table I A.—General summary

| Particulars | 1935 | 1934 | 1933 | 1930* | 1924* |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|
| Value of products (Gross output)... | £'000 21,343 | £'000 18,872 | £'000 14,475 | £'000 20,994 | £'000 22,916 |
| Cost of materials, fuel and electricity used | 14,141 | 12,603 | 9,400 | 15,014 | 16,716 |
| Amount paid for work given out... | 175 | 143 | 117 | 160 | 72 |
| Net output | 7,027 No. | 6,126 No. | 4,958 No. | 5,820 No. | 6,128 No. |
| Average number of persons employed | 28,052 | 25,800 | 22,568 | 24,974 | 26,478 |
| Net output per person employed... | £ 250 No. | £ 237 | £ 220 | £ 233 No. | £ 231 No. |
| Number of returns | 236 | } † | † { | 229 | 240 |
| Number of establishments... | 248 | | | 253 | † |

* The figures relate to Great Britain only, particulars of the small production in Northern Ireland not being available.
† Not available.

Table I B.—Firms employing not more than ten persons on the average

| Particulars | 1935 | 1930* | 1924 |
|---|------------|------------|------------|
| Number of returns received | No. 419 | No. 353 | No. 295 |
| Average number of persons employed :— | | | |
| Males... .. | 2,013 | 1,608 | 941 |
| Females | 128 | 80 | 41 |
| TOTAL | 2,141 | 1,688 | 982 |
| Number of firms not making returns | 1 | 26 | 96 |

* Great Britain only.

In 1924 the value of the gross output of the small firms making returns (including the few firms in Northern Ireland, for which separate particulars cannot be given) was 2.9 per cent. of the total, the items principally affected being brass manufactures other than sheets, strip and rods (4 per cent.) and work done for the trade (10 per cent.).

Table II.—Size of establishments in 1935

| Size of establishment (average number employed) | Number of establishments | Gross output | Net output | Number of persons employed | Net output per person employed |
|---|--------------------------|--------------|------------|----------------------------|--------------------------------|
| | No. | £'000 | £'000 | No. | £ |
| 11-24 | 92 | 818 | 322 | 1,561 | 206 |
| 25-49 | 54 | 1,075 | 410 | 1,916 | 214 |
| 50-99 | 43 | 1,913 | 690 | 2,908 | 237 |
| 100-199... .. | 25 | 3,710 | 881 | 3,451 | 255 |
| 200-299... .. | 10 | 1,795 | 595 | 2,381 | 250 |
| 300-499... .. | 8 | 1,649 | 553 | 2,723 | 203 |
| 500-749... .. | 9 | 4,676 | 1,553 | 5,299 | 293 |
| 750 and over | 7 | 5,707 | 2,023 | 7,813 | 259 |
| TOTAL | 248 | 21,343 | 7,027 | 28,052 | 250 |

Table III.—Particulars of output, etc., in each of the principal areas of the United Kingdom

| Area* | Number of establishments† | Gross output | Net output | Number of persons employed | Net output per person employed |
|-----------------------|---------------------------|------------------|----------------|----------------------------|--------------------------------|
| | No. | £'000 | £'000 | No. | £ |
| 1 | 1935 33 1930 38 | 2,576 2,475 | 834 938 | 2,891 3,180 | 288 295 |
| 2 | 1935 27 1930 23 | 2,950 2,162 | 586 399 | 2,398 2,058 | 244 194 |
| 3 | 1935 24 1930 15 | 910 282 | 447 103 | 2,034 584 | 220 177 |
| 4 | 1935 9 1930 8 | 339 498 | 133 144 | 768 736 | 173 196 |
| 5 | 1935 113 1930 109 | 12,062 13,306 | 4,252 3,734 | 16,189 15,804 | 263 236 |
| 6 | 1935 5 | 107 | 50 | 209 | 238 |
| 10 | 1935 5 | 257 | 121 | 541 | 223 |
| 7, 8, 9 and 12 | 1935 9 | 1,777 | 464 | 2,188 | 212 |
| 6 to 10 and 12 | 1935 19 1930 17 | 2,141 1,850 | 635 367 | 2,938 1,787 | 217 205 |
| 14 | 1935 17 1930 16 | 274 363 | 106 112 | 634 709 | 166 158 |
| 15 | 1935 6 1930 3 | 91 58 | 34 23 | 200 116 | 170 201 |
| TOTAL | 1935 248 1930 229 | 21,343 20,994 | 7,027 5,820 | 28,052 24,974 | 250 233 |

* For particulars *see* page xviii.

† Number of returns for 1930.

Table IV.—No sub-divisions of this trade have been distinguished.

PRODUCTION

Table V A.—Total make of Copper and Brass and certain manufactures
(including output used for further manufacturing purposes in the same works)

| Kind of goods | Returned on schedules for | | | | | |
|---|----------------------------|----------|----------|------------|----------|-------|
| | The Copper and Brass Trade | | | All trades | | |
| | 1935 | | 1934 | 1935 | | 1934 |
| | Quantity | Entries | | Quantity | Entries | |
| Th. tons | No. | Th. tons | Th. tons | No. | Th. tons | |
| Copper:— | | | | | | |
| Unwrought: ingots, blocks, slabs, bars, billets, cakes, cathodes and anodes, including rough copper of 94 per cent. copper content or over* ... | 98.2 | 27 | 85.5 | 98.3 | 29 | 85.6 |
| Plates, sheets, strip, foil, discs and circles ... | 40.0 | 67 | 40.8 | 40.2 | 73 | 40.9 |
| Rods and sections, shapes and angles, and wire not in coils:— | | | | | | |
| Wire rods ... | 38.5 | 8 | 24.4 | 47.7 | 11 | 31.6 |
| Other descriptions ... | 48.4 | 17 | 42.8 | 50.7 | 25 | 44.2 |
| Brass and other alloys of copper (except nickel alloys):— | | | | | | |
| Ingots, blocks, slabs, billets and bars (including wire bars)† ... | 212.3 | 79 | 145.8 | 215.0 | 86 | 146.7 |
| Plates, sheets, strip, foil, discs and circles ... | 51.7 | 50 | 53.2 | 52.7 | 53 | 54.3 |
| Shapes and angles ... | 2.7 | 11 | 67.3 | 2.7 | 13 | 68.1 |
| Rods and other sections, and wire not in coils ... | 72.0 | 23 | | 73.7 | 32 | |

* Including copper smelted from imported unrefined metal as well as copper smelted from imported ores and scrap. Some duplication may be involved owing to the inclusion of the same product at different stages of manufacture.

† Including direct castings and cast strips, so far as recorded separately.

Table V B.—Principal products made for sale

| Kind of output | 1935 | | | 1934 | |
|--|----------|-------|---------|----------|-------|
| | Quantity | Value | Entries | Quantity | Value |
| | Th. tons | £'000 | No. | Th. tons | £'000 |
| Copper:— | | | | | |
| Unwrought: ingots, blocks, slabs, bars, billets, cakes, cathodes and anodes, including rough copper of 94 per cent. copper content or over ... | 26.5 | 883 | 20 | 22.4 | 730 |
| Plates, sheets, strip, foil, discs and circles:— | | | | | |
| 3/8-inch thick and over ... | 9.3 | 552 | 26 | 36.3 | 2,007 |
| Other sheets, etc., exceeding 6 inches in width or diameter... | 17.4 | 926 | 27 | | |
| Strip, etc., not exceeding 6 inches in width or diameter ... | 3.6 | 226 | 28 | | |
| Unclassified ... | 4.9 | 300 | 3 | | |

| Kind of output | 1935 | | | 1934 | |
|--|-----------|-----------------|---------|-----------|-----------------|
| | Quantity | Value | Entries | Quantity | Value |
| | Th. tons. | £'000 | No. | Th. tons. | £'000 |
| Copper:— <i>contd.</i> | | | | | |
| Rods and sections, shapes and angles, and wire not in coils:— | | | | | |
| Wire rods ... | 22.3 | 853 | 10 | 16.9 | 617 |
| Other descriptions ... | 50.6 | 1,987 | 24 | 44.1 | 1,676 |
| Tubes:— | | | | | |
| Solid drawn, of circular section | 18.6 | 1,362 | 27 | 15.8 | 1,173 |
| Other* ... | 2.7 | 18 | 10 | 1.3 | 6 |
| Cylinders and boilers* ... | 30.5 | 185 | 23 | 61.2 | 333 |
| Engineers' and mechanics' goods and fittings for water supply, including bathroom, lavatory and sanitary fittings... | ... | 230 | 10 | | |
| Other manufactures of copper (except wire) ... | 46.8 | 393 | 125 | 42.6 | 367 |
| | ... | 64 | 36 | ... | 34 |
| TOTAL — Copper and manufactures thereof (except wire) | ... | 8,171 | ... | ... | 7,048 |
| Brass and other alloys of copper (except nickel alloys):— | | | | | |
| Ingots, blocks, slabs, billets and bars (including wire bars) ... | 33.1 | 1,187 | 46 | 23.2 | 859 |
| Plates, sheets, strip, foil, discs and circles ... | 46.7 | 2,622 | 53 | 49.7 | 2,646 |
| Shapes and angles ... | 2.7 | 155 | 12 | 64.2 | 2,732 |
| Rods and sections, and wire not in coils ... | 66.8 | 2,902 | 32 | | |
| Tubes:— | | | | | |
| Solid drawn, of circular section | 11.5 | 1,023 | 39 | 10.0 | 897 |
| Other ... | 0.5 | 61 | 20 | 0.8 | 85 |
| Castings* ... | 25.2 | 2,416 | 485 | 22.5 | 2,084 |
| TOTAL — Brass and other copper alloys and manufactures thereof (except finished brass goods and wire) | ... | 10,366 | ... | ... | 9,303 |
| Concentrates, residues, etc. ... | 15.7 | 96 | 59 | 11.0 | 60 |
| TOTAL—Goods made | ... | 18,633 | ... | ... | 16,411 |
| Work done for the trade:— | | Amount received | | | Amount received |
| Rolling of copper ... | ... | 48 | 19 | ... | 46 |
| Rolling of brass ... | ... | 36 | 19 | ... | 37 |
| Casting of brass and other copper alloys ... | ... | 44 | 18 | ... | 45 |
| Other work ... | ... | 81 | 18 | ... | 75 |
| Repair work ... | ... | 37 | 24 | ... | 29 |
| TOTAL—Work done | ... | 246 | ... | ... | 232 |
| TOTAL — PRINCIPAL PRODUCTS | ... | 18,879 | ... | ... | 16,643 |

* So far as recorded separately.

The figures shown in the preceding table include the following output recorded by firms whose returns were made on schedules for other trades and are not, therefore, included in Table I A.

| Kind of output | 1935 | | | 1934 | |
|--|----------|-----------------|---------|----------|-----------------|
| | Quantity | Value | Entries | Quantity | Value |
| Copper :— | Th. tons | £'000 | No. | Th. tons | £'000 |
| Unwrought | 0.1 | 3 | 2 | 0.1 | 3 |
| Plates, sheets, strip, foil, discs and circles | 0.2 | 19 | 6 | * | 5 |
| Rods and sections, shapes and angles, and wire not in coils :— | | | | | |
| Wire rods | 9.2 | 352 | 3 | 8.6 | 330 |
| Other descriptions | 2.3 | 127 | 7 | | |
| Tubes :— | | | | | |
| Solid drawn, of circular section | 0.3 | 30 | 1 | 4.4 | 25 |
| Other† | 1.1 | 10 | 3 | — | — |
| Cylinders and boilers† | 6.6 | 43 | 15 | 13.9 | 61 |
| Engineers' and mechanics' goods and fittings for water supply, including bathroom, lavatory and sanitary fittings... | 2.9 | 28 | 9 | 19.5 | 237 |
| Other manufactures of copper (except wire) | 17.7 | 241 | 98 | | |
| | ... | 60 | 32 | | |
| TOTAL — Copper and manufactures thereof (except wire) | ... | 982 | ... | ... | 710 |
| Brass and other alloys of copper (except nickel alloys) :— | Th. tons | | | Th. tons | |
| Ingots, blocks, slabs, billets and bars (including wire bars) ... | 0.5 | 37 | 5 | 0.8 | 27 |
| Plates, sheets, strip, foil, discs and circles | 0.9 | 57 | 3 | 1.1 | 77 |
| Shapes and angles... .. | * | 3 | 2 | — | — |
| Rods and sections, and wire not in coils | 1.6 | 107 | 9 | 0.8 | 57 |
| Tubes :— | | | | | |
| Solid drawn, of circular section | 0.4 | 42 | 7 | 0.3 | 45 |
| Other | 0.1 | 6 | 8 | 0.3 | 29 |
| Castings† | 10.3 | 1,007 | 357 | 7.9 | 727 |
| TOTAL — Brass and other copper alloys and manufactures thereof (except finished brass goods and wire) ... | 13.8 | 1,259 | ... | 11.2 | 962 |
| | | Amount received | | | Amount received |
| Work done for the trade :— | | | | | |
| Rolling of copper | ... | 2 | 2 | ... | 2 |
| Rolling of brass | ... | 6 | 3 | ... | 5 |
| Casting of brass and other copper alloys | ... | 3 | 3 | ... | 4 |
| TOTAL—Work done | ... | 11 | ... | ... | 11 |
| TOTAL | ... | 2,252 | ... | ... | 1,683 |

* Less than 50 tons.

† So far as recorded separately.

Table V C.—Output for sale of certain principal products, 1924-1935

| Kind of output | 1924 | 1930 | 1933 | 1934 | 1935 |
|---|--------|--------|---------|--------|--------|
| Copper :— | | | | | |
| Unwrought | 26.3 | 27.5 | 19.0 | 22.4 | 26.5 |
| Plates, sheets, strip, foil, discs and circles | 1,839 | 1,749 | 654 | 730 | 883 |
| Rods and sections and wire not in coils :— | 29.2 | 22.4 | 26.9 | 36.3 | 35.2 |
| Wire rods | 2,720 | 2,071 | 1,576 | 2,007 | 2,004 |
| Other | 10.7 | 14.3 | 11.9 | 16.9 | 22.3 |
| Tubes | 887 | 1,114 | 471 | 617 | 853 |
| Other manufactures of copper (except wire) | 11.4 | 9.3 | 6.0* | 44.1 | 50.6 |
| Brass and other alloys of copper (except nickel alloys) :— | 11.4 | 9.3 | 10.3 | 15.9 | 18.8 |
| Plates, sheets, strip, foil, discs and circles | 1,404 | 1,132 | 836 | 1,179 | 1,380 |
| Tubes | 1,424 | 1,231 | 890 | 839 | 1,064 |
| Rods, sections, shapes, angles and wire not in coils | 38.8 | 34.3 | 43.4 | 49.7 | 46.7 |
| Other manufactures of brass (except finished brass goods and wire) | 3,297 | 2,749 | 2,395 | 2,646 | 2,622 |
| Concentrates, residues, etc. | 12.5 | 9.7 | 8.0 | 10.8 | 12.0 |
| Work done† | 1,607 | 1,128 | 712 | 982 | 1,084 |
| | 30.2 | 45.4 | 49.0 | 64.2 | 69.5 |
| | 2,087 | 2,961 | 2,095 | 2,732 | 3,057 |
| | 5,566 | 4,190 | 2,223 | 2,943 | 3,603 |
| | ... | ... | 8.7* | 11.0 | 15.6 |
| | 16† | 144 | 52* | 60 | 96 |
| | 323 | 289 | 199* | 232 | 246 |
| TOTAL — PRINCIPAL PRODUCTS | 21,170 | 18,758 | 12,444* | 16,643 | 18,879 |

* This figure is defective as the result of the omission of certain returns (see introductory paragraph, page 454).

† So far as recorded separately.

‡ Amount received.

Table VI.—Average values of goods produced, exported and imported

| Kind of goods | Production (at factory) | | | Exports (f.o.b.) | | Imports (c.i.f.) | |
|---|-------------------------|---------|------------------------------|------------------|---------|------------------|---------|
| | Average value | | 1935 as a percentage of 1934 | Average value | | Average value | |
| | 1935 | 1934 | | 1935 | 1934 | 1935 | 1934 |
| Copper :— | £ | £ | Per cent. | £ | £ | £ | £ |
| Unwrought | per ton | per ton | | per ton | per ton | per ton | per ton |
| Plates, sheets, strip, foil, discs and circles | 33.3 | 32.6 | 102.3 | 34.0 | 31.9 | 33.3 | 31.4 |
| Rods and sections, shapes and angles, and wire not in coils :— | 56.9 | 55.2 | 103.0 | 48.6 | 48.7 | 50.9 | 54.7 |
| Wire rods | 38.3 | 36.4 | 105.3 | 35.5 | 44.2 | 39.9 | 36.7 |
| Other descriptions | 39.3 | 38.0 | 103.4 | 43.4 | 47.4 | ... | ... |
| Tubes :— | | | | | | | |
| Solid drawn, of circular section | 73.1 | 74.2 | 98.4 | 83.7 | 86.3 | 54.1 | 56.1 |
| Engineers' and mechanics' goods and fittings for water supply, including bathroom, lavatory and sanitary fittings | 98.6 | 94.7 | 104.3 | * | * | * | * |
| Brass and other alloys of copper (except nickel alloys) :— | | | | | | | |
| Ingots, blocks, slabs, billets and bars (including wire bars) ... | 35.8 | 37.1 | 96.5 | 50.8 | 46.7 | 38.6 | ... |
| Plates, sheets, strip, foil, discs and circles | 56.2 | 53.2 | 105.5 | 42.2 | 39.5 | 51.9 | 53.5 |
| Rods and sections, and wire not in coils ... | 44.0 | 42.6 | 103.3 | 52.9 | 50.8 | 36.6 | 64.0 |
| Tubes :— | | | | | | | |
| Solid drawn, of circular section | 89.0 | 89.6 | 99.4 | ... | ... | ... | ... |
| Other | 119.1 | 109.9 | 108.4 | ... | ... | ... | ... |
| Total—Tubes | 90.3 | 91.0 | 99.2 | 96.3 | 94.3 | 44.9 | 63.0 |
| Castings | 95.8 | 92.6 | 103.5 | * | * | * | * |

* Not recorded separately.

Table VII.—Volume of Production, 1924-1935

| Kind of output | Total production | | | Production index (1935 = 100) | | | |
|---|------------------|-------------|------------------------|-------------------------------|-----------|-----------|-----------|
| | 1935 as returned | 1934 | | 1924 | 1930 | 1933 | 1934 |
| | | As returned | At 1935 average values | | | | |
| Copper :— | £'000 | £'000 | £'000 | Per cent. | Per cent. | Per cent. | Per cent. |
| Unwrought | 883 | 730 | 747 | 100 | 104 | 73 | 85 |
| Plates, sheets, strip, foil, discs and circles ... | 2,004 | 2,007 | 2,068 | 83 | 64 | 76 | 103 |
| Rods and sections, shapes and angles, and wire not in coils :— | | | | | | | |
| Wire rods | 853 | 617 | 650 | } 15 | 20 | 25* | 84 |
| Other descriptions | 1,987 | 1,676 | 1,733 | | | | |
| Tubes | 1,380 | 1,179 | 1,164 | 60 | 49 | 54 | 84 |
| Other manufactures of copper | 1,064 | 839 | 873 | 194 | 144 | 119 | 82 |
| TOTAL—Copper and manufactures thereof (except wire) ... | 8,171 | 7,048 | 7,235 | 72 | 61 | 60 | 89 |
| Brass and other alloys of copper (except nickel alloys) :— | | | | | | | |
| Ingots, blocks, slabs, billets and bars (including wire bars) ... | 1,187 | 859 | 829 | } 64 | 82 | 53 | 70 |
| Castings | 2,416 | 2,084 | 2,158 | | | | |
| Plates, sheets, strip, foil, discs and circles ... | 2,622 | 2,646 | 2,792 | 83 | 73 | 93 | 106 |
| Rods and sections, and wire not in coils ... | 3,057 | 2,732 | 2,821 | 43 | 65 | 70 | 92 |
| Tubes | 1,084 | 982 | 984 | 102 | 78 | 66 | 90 |
| TOTAL — Brass and manufactures thereof† | 10,366 | 9,303 | 9,584 | 66 | 75 | 72 | 92 |
| Concentrates, residues, etc. | 96 | 60 | 67 | ... | 79 | 55* | 70 |
| Work done for the trade and repair work ... | 246 | 232 | 236 | 102 | 93 | 82* | 96 |
| TOTAL† | 18,879 | 16,643 | 17,122 | 69 | 69 | 67* | 91 |

* See footnote (*) to Table V C, page 459.

† Except wire and manufactures thereof and finished brass goods.

Table VIII.—Production in relation to Exports and Imports

| Kind of goods | Production | Exports | Proportion of production exported | Retained imports | Available for use in the United Kingdom | Share of home market held by British goods |
|---|------------|----------|-----------------------------------|------------------|---|--|
| | Th. tons | Th. tons | Per cent. | Th. tons | Th. tons | Per cent. |
| Copper :— | | | | | | |
| Unwrought ... | 1935 98.3* | 12.7 | ... | 271.9 | ... | ... |
| | 1934 85.6* | 11.9 | ... | 243.5 | ... | ... |
| Plates, sheets, strip, foil, discs and circles ... | 1935 40.2 | 12.2 | 30.1 | 3.3 | 31.3 | 89.6 |
| | 1934 40.9 | 14.1 | 34.5 | 3.7 | 30.5 | 87.8 |
| Rods and sections, shapes and angles and wire not in coils :— | | | | | | |
| Wire rods ... | 1935 47.7 | 0.8 | 1.7 | 12.2 | 59.1 | 79.3 |
| | 1934 31.6 | 0.3 | 1.0 | 23.0 | 54.3 | 57.6 |
| Other descriptions ... | 1935 50.7 | 1.1 | 2.3 | 0.0 | 49.6 | 99.9 |
| | 1934 44.2 | 0.9 | 2.1 | 0.0 | 43.3 | 99.9 |
| Tubes ... | 1935 18.8 | 1.3 | 7.0 | 2.4 | 19.9 | 88.0 |
| | 1934 15.9 | 1.2 | 7.8 | 1.8 | 16.5 | 88.8 |
| Brass and other alloys of copper (except nickel alloys) :— | | | | | | |
| Ingots, blocks, slabs, billets and bars (including wire bars) ... | 1935 215.0 | 3.7 | 1.7 | 0.2 | 211.5 | 99.9 |
| | 1934 146.7 | 2.3 | 1.6 | 0.0 | 144.4 | 100.0 |
| Plates, sheets, strip, foil, discs and circles ... | 1935 52.7 | 8.2 | 15.6 | 2.1 | 46.6 | 95.5 |
| | 1934 54.3 | 12.7 | 23.3 | 1.8 | 43.4 | 96.0 |
| Rods, sections, shapes and angles and wire not in coils ... | 1935 76.4 | 2.1 | 2.8 | 0.8 | 75.1 | 98.9 |
| | 1934 68.1 | 1.9 | 2.8 | 0.1 | 66.3 | 99.8 |
| Tubes ... | 1935 12.0 | 1.9 | 15.8 | 0.6 | 10.7 | 94.6 |
| | 1934 10.8 | 1.5 | 14.2 | 0.3 | 9.6 | 97.2 |

* See footnote (*) to Table V A, page 456.

Table IX.—Other output of the Copper and Brass Trade (Smelting, Rolling, etc.)

The value of the gross output of the firms whose returns were made on schedules for the Copper and Brass Trade (Smelting, Rolling, etc.) was £21,343,000 in 1935 and £18,872,000 in 1934, of which £16,627,000 in 1935 and £14,960,000 in 1934 consisted of products included in Table V B. Particulars of the remaining items are shown below.

| Kind of output | 1935 | | 1934 | |
|--|----------|-----------------|----------|-----------------|
| | Quantity | Value | Quantity | Value |
| Goods made :— | Th. tons | £'000 | Th. tons | £'000 |
| Aluminium :— | | | | |
| Crude and semi-finished ... | 7.1 | 845 | 4.0 | 521 |
| Manufactures (including castings) ... | 1.6 | 283 | 0.4 | 81 |
| Wire in coils :— | | | | |
| Of copper (including uninsulated electric wire) ... | 15.0 | 792 | 12.8 | 660 |
| Of brass... .. | 4.9 | 289 | 4.6 | 255 |
| Of other alloys of copper ... | 2.1 | 150 | 1.9 | 123 |
| Lead and manufactures thereof ... | 4.2 | 75 | 6.8 | 115 |
| Nickel alloys and manufactures thereof | 1.9 | 298 | 1.4 | 236 |
| White metal alloys, unwrought or partly wrought :— | | | | |
| Anti-friction metal ... | 1.3 | 201 | 2.2 | 368 |
| Other sorts ... | 0.5 | 29 | 0.3 | 15 |
| Stampings, pressings and piercings of brass ... | 0.8 | 74 | 0.9 | 98 |
| Finished brass goods ... | ... | 544 | ... | 481 |
| Other non-ferrous metals and manufactures thereof ... | ... | 362 | ... | 308 |
| Manufactures of iron and steel ... | ... | 133 | ... | 136 |
| Machinery and parts ... | ... | 54 | ... | 19 |
| Other goods made ... | ... | 114 | ... | 111 |
| Total—Goods made ... | ... | 4,243 | ... | 3,527 |
| Scrap metal sold :— | | | | |
| Copper ... | 8.1 | 251 | 5.8 | 170 |
| Brass ... | 3.6 | 80 | 4.1 | 86 |
| Iron and steel ... | 2.1 | 5 | 1.5 | 3 |
| Other and unclassified ... | 0.8 | 23 | 0.8 | 32 |
| Concentrates, residues, scale, etc. of metals other than copper or brass (including purple iron ore) ... | ... | 64 | ... | 59 |
| Total—Scrap, etc. ... | ... | 423 | ... | 350 |
| Work done for the trade :— | | Amount received | | Amount received |
| Rolling of nickel alloys ... | ... | 14 | ... | 13 |
| Other work done ... | ... | 36 | ... | 22 |
| Total—Work done ... | ... | 50 | ... | 35 |
| TOTAL ... | ... | 4,716 | ... | 3,912 |

MATERIALS AND FUEL

Table X A.—Materials, fuel and electricity purchased and used

| Kind of materials | 1935 | | 1934 | |
|--|--------------------------------------|--------------|-----------------|--------------|
| | Quantity | Cost | Quantity | Cost |
| Copper ore, matte, etc. ... | Th. tons 6.0 | £'000 160 | Th. tons 9.8 | £'000 308 |
| Copper, unwrought:— | | | | |
| Electrolytic ... | 54.7 | 1,878 | } 169.2 | 5,442 |
| Other ... | 135.7 | 4,300 | | |
| Nickel, unwrought ... | 0.3 | 62 | 0.4 | 73 |
| Zinc ore and concentrates and unwrought zinc ... | 47.2 | 737 | 43.4 | 718 |
| Scrap (including all forms of scrap material and secondary metal purchased and used):— | | | | |
| Aluminium ... | 8.3 | 416 | } 124.7 | 3,247 |
| Brass ... | 86.8 | 2,131 | | |
| Copper ... | 34.6 | 1,137 | | |
| Lead ... | 2.3 | 30 | | |
| Nickel alloys ... | 0.7 | 33 | | |
| Tin ... | 0.8 | 32 | | |
| Zinc ... | 1.9 | 28 | | |
| Aluminium, unwrought ... | 2.2 | 215 | | |
| Lead, pig ... | 4.0 | 59 | | |
| Tin, unwrought ... | 1.3 | 295 | | |
| Fuel and electricity used for all purposes:— | | | | |
| Coal ... | 276.7 | 231 | } ... | 2,815 |
| Coke ... | 82.2 | 114 | | |
| Heavy fuel oil ... | 5,097 Th. B.T.U. (Kw.-hrs.) | 86 | | |
| Purchased electricity ... | 92,430 | 233 | | |
| All other purchased materials and fuel | ... | 1,964 | | |
| TOTAL ... | ... | 14,141 | ... | 12,603 |

Table X B.—Consumption of coal, coke and electricity in 1935 and 1930

| Kind of fuel | 1935 | 1930 |
|---------------------------------------|--------------------------|--------------------------|
| Coal ... | Th. tons 276.7 | Th. tons 247.0 |
| Coke ... | 82.2 | 77.0 |
| Electricity:— | Th. B.T.U. (Kw.-hrs.) | Th. B.T.U. (Kw.-hrs.) |
| Generated in same works ... | 38,196 | 17,028 |
| Purchased ... | 92,430 | 51,863 |
| Total electricity consumed ... | 130,626 | 68,891 |

EMPLOYMENT

Table XI A.—Average numbers employed in 1935 and 1934

| Persons employed | Males | | Females | | Total | |
|---|----------|----------|----------|----------|----------|----------|
| | Under 18 | All ages | Under 18 | All ages | Under 18 | All ages |
| Operatives (average for the year) ... | 2,036 | 23,388 | 287 | 1,232 | 2,323 | 24,620 |
| Administrative, technical and clerical staff* ... | 184 | 2,520 | 147 | 912 | 331 | 3,432 |
| TOTAL ... | 2,220 | 25,908 | 434 | 2,144 | 2,654 | 28,052 |
| | 1934 | 2,129 | 23,717 | 414 | 2,083 | 2,543 |

* As at 12th October, 1935, and 13th October, 1934.

Table XI B.—Operatives employed in one week in each month of 1934 and 1935 by firms furnishing returns in respect of the twelve months ended December

| Mid week of* | Operatives employed | | Monthly index† | | |
|--|---------------------|--------|----------------|------|-------|
| | 1934 | 1935 | 1933 | 1934 | 1935 |
| January ... | 15,308 | 17,101 | 74.8 | 85.8 | 97.7 |
| February ... | 15,731 | 17,251 | 75.3 | 88.1 | 98.6 |
| March ... | 15,924 | 17,181 | 76.0 | 89.2 | 98.2 |
| April ... | 16,078 | 17,216 | 76.1 | 90.1 | 98.4 |
| May ... | 16,172 | 17,411 | 77.1 | 90.6 | 99.5 |
| June ... | 16,387 | 17,358 | 78.6 | 91.8 | 99.2 |
| July ... | 16,610 | 17,417 | 80.4 | 93.0 | 99.6 |
| August ... | 16,524 | 17,430 | 79.7 | 92.6 | 99.6 |
| September ... | 16,763 | 17,683 | 81.7 | 93.9 | 101.1 |
| October ... | 16,914 | 17,854 | 82.0 | 94.8 | 102.1 |
| November ... | 17,105 | 18,054 | 84.1 | 95.8 | 103.2 |
| December ... | 17,075 | 17,984 | 85.3 | 95.7 | 102.8 |
| Average for the twelve months | 16,383 | 17,495 | 79.3 | 91.8 | 100.0 |
| Proportion of total operatives represented ... | 72.51 | 71.06 | ... | ... | ... |

* For the ending date of each week see page xiv.

† Based on the estimated average for the year 1935.

Table XI C.—Average numbers employed, 1924-1935

| Year | Operatives | Administrative, technical and clerical staff | Total |
|-------------|------------|--|--------|
| 1924 | 23,745 | 2,733 | 26,478 |
| 1930 | 21,896 | 3,078 | 24,974 |
| 1933 | 19,523 | 3,045 | 22,568 |
| 1934 | 22,594 | 3,206 | 25,800 |
| 1935 | 24,620 | 3,432 | 28,052 |

WAGES

Table XII.—Wages paid by firms furnishing returns of wages in 1935 and 1930

The aggregate amount of wages paid by firms furnishing returns of wages was £2,594,000 in 1935 representing 48.5 per cent. of the net output of these firms, the corresponding figures for 1930 being £1,683,000 and 60.0 per cent. The figures for these firms given below indicate the size of the sample and the extent to which it is representative.

| Firms furnishing returns of wages | 1935 | | 1930 | |
|---|-----------|---------------------|-----------|---------------------|
| | Aggregate | Proportion of trade | Aggregate | Proportion of trade |
| | £'000 | Per cent. | £'000 | Per cent. |
| Gross output... .. | 15,908 | 74.5 | 10,820 | 51.5 |
| Net output | 5,350 | 76.1 | 2,803 | 48.2 |
| Operative staff employed :— | No. | | No. | |
| During mid-week of October :— | | | | |
| Males | 17,740 | 75.1 | } | * |
| Females... .. | 700 | 56.3 | | |
| Total | 18,440 | 74.1 | 11,557 | 56.9 |
| Average for the year | 18,283 | 74.3 | 12,027 | 56.1 |
| Administrative, technical and clerical staff | 2,590 | 75.5 | * | * |
| Number of establishments | 135 | 54.4 | ... | ... |

* Not recorded separately.

COUNTRY TABLES (1935)

Note.—The figures given in the following tables relate only to firms whose returns were made on schedules for the Copper and Brass Trade (Smelting, Rolling, etc.). No production was recorded for Northern Ireland.

Table I.—General summary

| Particulars | Unit | England and Wales | Scotland | Great Britain |
|---|-------|-------------------|----------|---------------|
| Value of products (Gross output) ... | £'000 | 20,978 | 365 | 21,343 |
| Cost of materials, fuel and electricity used | " | 13,918 | 223 | 14,141 |
| Amount paid for work given out ... | " | 173 | 2 | 175 |
| Net output | " | 6,887 | 140 | 7,027 |
| Average number of persons employed ... | No. | 27,218 | 834 | 28,052 |
| Net output per person employed ... | £ | 253 | 167 | 250 |
| Number of returns | No. | 213 | 23 | 236 |
| Number of establishments | " | 225 | 23 | 248 |

Table II A.—Total make of Copper and Brass and certain manufactures (including output used for further manufacturing purposes in the same works)

| Description | England and Wales | Scotland | Great Britain |
|---|-------------------|----------|---------------|
| | Th. tons | Th. tons | Th. tons |
| Copper :— | | | |
| Unwrought: ingots, blocks, slabs, bars, billets, cakes, cathodes and anodes, including rough copper of 94 per cent. copper content or over* | 98.2 | — | 98.2 |
| Plates, sheets, strip, foil, discs and circles ... | 40.0 | — | 40.0 |
| Rods and sections, shapes and angles, and wire not in coils :— | | | |
| Wire rods | 38.5 | — | 38.5 |
| Other descriptions | 48.4 | — | 48.4 |
| Brass and other alloys of copper (except nickel alloys) :— | | | |
| Ingots, blocks, slabs, billets and bars (including wire bars)† | 210.2 | 2.1 | 212.3 |
| Plates, sheets, strip, foil, discs and circles ... | 51.7 | — | 51.7 |
| Shapes and angles | 2.7 | — | 2.7 |
| Rods and other sections, and wire not in coils | ‡ | ‡ | 72.0 |

* Including copper smelted from imported unrefined metal as well as copper smelted from imported ores and scrap. Some duplication may be involved owing to the inclusion of the same product at different stages of manufacture.

† Including direct castings and cast strips, so far as recorded separately.

‡ Owing to the possible disclosure of information relating to individual firms, separate particulars for England and Wales and for Scotland cannot be given.

Table II B.—Output made for sale

| Kind of output | Unit | England and Wales | Scotland | Great Britain |
|--|-----------|-------------------|----------|---------------|
| Copper :— | | | | |
| Unwrought: ingots, blocks, slabs, bars, billets, cakes, cathodes and anodes, including rough copper of 94 per cent. copper content or over | Th. tons | 26.4 | — | 26.4 |
| | £'000 | 880 | — | 880 |
| Plates, sheets, strip, foil, discs and circles | Th. tons | 35.0 | — | 35.0 |
| | £'000 | 1,985 | — | 1,985 |
| Rods and sections, shapes and angles, and wire not in coils :— | | | | |
| Wire rods | Th. tons | 13.1 | — | 13.1 |
| | £'000 | 501 | — | 501 |
| Other descriptions | Th. tons | 48.3 | — | 48.3 |
| | £'000 | 1,860 | — | 1,860 |
| Tubes :— | | | | |
| Solid drawn, of circular section | Th. tons | 18.3 | — | 18.3 |
| | £'000 | 1,332 | — | 1,332 |
| Other | Th. cwts. | 1.6 | — | 1.6 |
| | £'000 | 8 | — | 8 |
| Cylinders and boilers†— | | | | |
| Weight stated | Th. cwts. | | | 23.9 |
| | £'000 | | | 142 |
| Weight not stated | £'000 | | | 226 |
| Engineers' and mechanics' goods and fittings for water supply, including bathroom, lavatory and sanitary fittings— | | * | * | |
| Weight stated | Th. cwts. | | | 15.7 |
| | £'000 | | | 64 |
| Weight not stated | £'000 | | | 35 |
| Other manufactures of copper (except wire)— | | | | |
| Weight stated | Th. cwts. | 24.5 | 4.6 | 29.1 |
| | £'000 | 122 | 30 | 152 |
| Weight not stated | £'000 | 4 | — | 4 |
| Total—Copper and manufactures thereof (except wire) | £'000 | 7,076 | 113 | 7,189 |
| Brass and other alloys of copper (except nickel alloys) :— | | | | |
| Ingots, blocks, slabs, billets and bars (including wire bars) | Th. tons | * | * | 32.6 |
| | £'000 | | | 1,150 |
| Plates, sheets, strip, foil, discs and circles | Th. tons | 45.8 | — | 45.8 |
| | £'000 | 2,565 | — | 2,565 |
| Shapes and angles | Th. tons | 2.7 | — | 2.7 |
| | £'000 | 152 | — | 152 |
| Rods and sections, and wire not in coils | Th. tons | * | * | 65.2 |
| | £'000 | | | 2,795 |
| Tubes :— | | | | |
| Solid drawn, of circular section | Th. tons | 11.1 | — | 11.1 |
| | £'000 | 981 | — | 981 |
| Other | Th. tons | 0.4 | — | 0.4 |
| | £'000 | 55 | — | 55 |
| Castings† | Th. tons | 13.6 | 1.3 | 14.9 |
| | £'000 | 1,290 | 119 | 1,409 |
| Total—Brass and other copper alloys and manufactures thereof (except finished brass goods and wire) | £'000 | 8,934 | 173 | 9,107 |

| Kind of output | Unit | England and Wales | Scotland | Great Britain |
|---|----------|-------------------|----------|---------------|
| Concentrates, residues, etc., of copper of brass | £'000 | 87 | 9 | 96 |
| Concentrates, residues, scale, etc., of metals other than copper or brass (including purple iron ore) | £'000 | 64 | — | 64 |
| Aluminium :— | | | | |
| Crude and semi-finished | Th. tons | | | 7.1 |
| | £'000 | | | 845 |
| Manufactures (including castings) | Th. tons | * | * | 1.6 |
| | £'000 | | | 283 |
| Wire in coils :— | | | | |
| Of copper (including uninsulated electric wire) | Th. tons | 15.0 | — | 15.0 |
| | £'000 | 792 | — | 792 |
| Of brass | Th. tons | 4.9 | — | 4.9 |
| | £'000 | 289 | — | 289 |
| Of other alloys of copper | Th. tons | 2.1 | — | 2.1 |
| | £'000 | 150 | — | 150 |
| Lead and manufactures thereof | Th. tons | * | * | 4.2 |
| | £'000 | | | 75 |
| Nickel alloys and manufactures thereof | Th. tons | 1.1 | — | 1.1 |
| | £'000 | 298 | — | 298 |
| White metal alloys, unwrought or partly wrought :— | | | | |
| Anti-friction metal | Th. tons | 1.3 | ‡ | 1.3 |
| | £'000 | 199 | 2 | 201 |
| Other sorts | Th. tons | 0.5 | — | 0.5 |
| | £'000 | 29 | — | 29 |
| Stampings, pressings and piercings of brass | Th. tons | | | 0.8 |
| | £'000 | | | 74 |
| Finished brass goods | £'000 | | | 544 |
| Other non-ferrous metals and manufactures thereof | £'000 | * | * | 362 |
| Manufactures of iron and steel | £'000 | | | 133 |
| Machinery and parts | £'000 | | | 54 |
| Other goods made | £'000 | | | 114 |
| TOTAL—Goods made | £'000 | 20,359 | 340 | 20,699 |
| Waste products sold :— | | | | |
| Scrap metal :— | | | | |
| Copper | Th. tons | 8.1 | ‡ | 8.1 |
| | £'000 | 250 | 1 | 251 |
| Brass | Th. tons | 3.4 | 0.2 | 3.6 |
| | £'000 | 76 | 4 | 80 |
| Iron and steel | Th. tons | 2.1 | — | 2.1 |
| | £'000 | 5 | — | 5 |
| Other and unclassified | Th. tons | 0.8 | — | 0.8 |
| | £'000 | 23 | — | 23 |
| TOTAL—Waste products | £'000 | 354 | 5 | 359 |
| Work done for the trade :— | | | | |
| Rolling of copper | £'000 | 46 | — | 46 |
| Rolling of brass | £'000 | 30 | — | 30 |
| Casting of brass and other copper alloys | £'000 | * | * | 41 |
| Other work | £'000 | * | * | 131 |
| Repair work | £'000 | 30 | 7 | 37 |
| TOTAL—Work done | £'000 | 265 | 20 | 285 |
| TOTAL—VALUE OF GOODS MADE AND WORK DONE | £'000 | 20,978 | 365 | 21,343 |

* Owing to the possible disclosure of information relating to individual firms, separate particulars for England and Wales and for Scotland cannot be given.

† So far as recorded separately.

‡ Less than 50 tons.

Table III A.—Materials, fuel and electricity purchased and used

| Kind of materials, etc. | Unit | England and Wales | Scotland | Great Britain |
|---|------------------------------|-------------------|------------|---------------|
| Aluminium unwrought ... | <i>Th. tons</i> | * | * | 2.2 |
| | <i>£'000</i> | | | 215 |
| Copper ore, matte, etc. ... | <i>Th. tons</i> | 6.0 | — | 6.0 |
| | <i>£'000</i> | 160 | — | 160 |
| Copper, unwrought :— | | | | |
| Electrolytic ... | <i>Th. tons</i> | * | * | 54.7 |
| | <i>£'000</i> | | | 1,878 |
| Other ... | <i>Th. tons</i> | | | 135.7 |
| | <i>£'000</i> | | | 4,300 |
| Lead pig ... | <i>Th. tons</i> | 4.0 | — | 4.0 |
| | <i>£'000</i> | 59 | — | 59 |
| Nickel, unwrought ... | <i>Th. tons</i> | 0.3 | — | 0.3 |
| | <i>£'000</i> | 62 | — | 62 |
| Tin, unwrought ... | <i>Th. tons</i> | 1.3 | † | 1.3 |
| | <i>£'000</i> | 290 | 5 | 295 |
| Zinc ore and concentrates and unwrought zinc ... | <i>Th. tons</i> | * | * | 47.2 |
| | <i>£'000</i> | | | 737 |
| Scrap (including all forms of scrap material and secondary metal purchased and used) :— | | | | |
| Aluminium ... | <i>Th. tons</i> | * | * | 8.3 |
| | <i>£'000</i> | | | 416 |
| Brass ... | <i>Th. tons</i> | 84.3 | 2.5 | 86.8 |
| | <i>£'000</i> | 2,065 | 66 | 2,131 |
| Copper ... | <i>Th. tons</i> | 34.0 | 0.6 | 34.6 |
| | <i>£'000</i> | 1,119 | 18 | 1,137 |
| Lead ... | <i>Th. tons</i> | | | 2.3 |
| | <i>£'000</i> | | | 30 |
| Nickel alloys ... | <i>Th. tons</i> | | | 0.7 |
| | <i>£'000</i> | | | 33 |
| Tin ... | <i>Th. tons</i> | | | 0.8 |
| | <i>£'000</i> | | | 32 |
| Zinc ... | <i>Th. tons</i> | | | 1.9 |
| | <i>£'000</i> | | | 28 |
| Fuel and electricity used for all purposes :— | | | | |
| Coal ... | <i>Th. tons</i> | 273.6 | 3.1 | 276.7 |
| | <i>£'000</i> | 228 | 3 | 231 |
| Coke ... | <i>Th. tons</i> | 79.1 | 3.1 | 82.2 |
| | <i>£'000</i> | 110 | 4 | 114 |
| Heavy fuel oil ... | <i>Th. galls.</i> | 5,067 | 30 | 5,097 |
| | <i>£'000</i> | 85 | 1 | 86 |
| Purchased electricity ... | <i>Th. B.T.U. (Kw.-hrs.)</i> | 91,852 | 578 | 92,430 |
| | <i>£'000</i> | 230 | 3 | 233 |
| All other purchased materials and fuel ... | <i>£'000</i> | 1,881 | 83 | 1,964 |
| TOTAL ... | <i>£'000</i> | 13,918 | 223 | 14,141 |

* Owing to the possible disclosure of information relating to individual firms, separate particulars for England and Wales and for Scotland cannot be given.

† Less than 50 tons.

Table III B.—Consumption of electricity

| Electricity consumed | England and Wales | Scotland | Great Britain |
|-----------------------------|------------------------------|------------------------------|------------------------------|
| | <i>Th. B.T.U. (Kw.-hrs.)</i> | <i>Th. B.T.U. (Kw.-hrs.)</i> | <i>Th. B.T.U. (Kw.-hrs.)</i> |
| Generated in same works ... | 38,188 | 8 | 38,196 |
| Purchased ... | 91,852 | 578 | 92,430 |
| TOTAL ... | 130,040 | 586 | 130,626 |

Table IV A.—Numbers employed in week ended 12th October, 1935

| Persons employed | Males | | Females | | Total | |
|--------------------------|--------------|---------------|------------|--------------|--------------|---------------|
| | Under 18 | All ages | Under 18 | All ages | Under 18 | All ages |
| England and Wales :— | | | | | | |
| Operatives ... | 1,953 | 22,854 | 289 | 1,239 | 2,242 | 24,093 |
| Administrative, etc.*... | 184 | 2,462 | 144 | 888 | 328 | 3,350 |
| Total ... | 2,137 | 25,316 | 433 | 2,127 | 2,570 | 27,443 |
| Scotland :— | | | | | | |
| Operatives ... | 104 | 771 | 1 | 5 | 105 | 776 |
| Administrative, etc.*... | — | 58 | 3 | 24 | 3 | 82 |
| Total ... | 104 | 829 | 4 | 29 | 108 | 858 |
| Great Britain :— | | | | | | |
| Operatives ... | 2,057 | 23,625 | 290 | 1,244 | 2,347 | 24,869 |
| Administrative, etc.*... | 184 | 2,520 | 147 | 912 | 331 | 3,432 |
| TOTAL ... | 2,241 | 26,145 | 437 | 2,156 | 2,678 | 28,301 |

* Administrative, technical and clerical staff.

Table IV B.—Operatives employed in one week in each month of 1935

| Week ended | Males and females | | |
|--------------------------------------|-------------------|----------|---------------|
| | England and Wales | Scotland | Great Britain |
| January 19 | 23,614 | 744 | 24,358 |
| February 16... .. | 23,766 | 734 | 24,500 |
| March 16 | 23,729 | 717 | 24,446 |
| April 13 | 23,471 | 724 | 24,195 |
| May 18 | 23,687 | 753 | 24,440 |
| June 15 | 23,576 | 780 | 24,356 |
| July 13 | 23,702 | 764 | 24,466 |
| August 17 | 23,722 | 718 | 24,440 |
| September 14 | 24,096 | 736 | 24,832 |
| October 12 | 24,093 | 776 | 24,869 |
| November 16 | 24,455 | 805 | 25,260 |
| December 14 | 24,502 | 778 | 25,280 |
| Average for the twelve months | 23,868 | 752 | 24,620 |

Table V.—Firms employing not more than ten persons on the average

| Particulars | England and Wales | Scotland | Great Britain |
|---------------------------------------|-------------------|-----------|---------------|
| Number of returns received | No. 352 | No. 67 | No. 419 |
| Average number of persons employed :— | | | |
| Males... .. | 1,667 | 346 | 2,013 |
| Females | 100 | 28 | 128 |
| Total | 1,767 | 374 | 2,141 |