## SECTION XXXIII.

## LABOUR AND INDUSTRIAL STATISTICS.

## § 1. Introductory.

1. General.-In Year Book No. 7 (pages 992-3), a résumé was given of the functions and scope of the Labour and Industrial Branch of the Commonwealth Bureau of Census and Statistics. Owing to considerations of space, this information is not repeated in the present issue of the Year Book.

## § 2. Fluctuations in Employment and Unemployment. -

1. General.-In Australia, but few of the trade unions pay any form of unemployment benefit, and consequently accurate and complete records of unemployment are difficult to obtain. For that reason the investigation for past years was advisedly limited to a record of the numbers unemployed at the end of each year. The results are, therefore, subject to certain limitations, inasmuch as they do not take into account variations in employment and unemployment throughout the year due to seasonal activity and other causes.

For the above reasons it is not safe to conclude that the actual percentage returned as unemployed in past years by trade unions at the end of each year is equal to the average percentage unemployed during the year. Nevertheless, for the purpose of making comparisons and shewing tendencies over a period of years, the percentages returned as unemployed, though not exact, are the most satisfactory figures available, and the average percentages and index-numbers computed for the several States and groups of unions may be taken as denoting the true course of events with substantial accuracy.

It may be mentioned that, in order to overcome the difficulties alluded to in regard to seasonal fluctuations, returns as to numbers unemployed have been collected from trade unions for each quarter since the beginning of the year 1913.

> 2. Number Unemployed in Various Industries, 1891 to 1919.-The following table shews for each of the years specified :-
> (a) The number of unions for which returns as to unemployment are available.
> (b) The number of members of such unions.
> (c) The number of members unemployed, and
> (d) The percentage of members unemployed on the total number of members of those unions for which returns are available.

The information given in this table obviously does not furnish a complete register of unemployment. In the first place, with the exception of the year 1919 it relates only to the number unemployed at the end of the year (see preceding paragraph hereof), and, secondly, it does not cover more than a part of the industrial field. Attention should also be drawn to the fact that the value of the comparisons which can be made is, to some extent, vitiated by the fact that returns are not availabie for the same unions throughout. For most of the important industries, returns have been available for a considerable number of unions and members since 1912. It is not unlikely, however, that particulars of unemployment are, on the whole, more generally available for those trades in which liability to unemployment is above the average for skilled occupations. Thus the building and engineering industries are heavily represented in the returns, while such comparatively stable industries as railway services are hardly represented at all. On the other hand, unskilled casual labour cannot, in the nature of the case, be well represented in the returns, which relate mainly to skilled workmen.

Thus, for some reasons, the percentage given is likely to be greater, and for other reasons, less than the true average percentage unemployed throughout the country.

UNEMPLOYMENT.-NUMBER OF UNIONS AND MEMBERS REPORTING AND NUMBER AND PERCENTAGE UNEMPLOYED, 1891 TO 1919 (4th QUARTER).


[^0]The figures shew that the percentage of unemployment in the fourth quarter of 1919 ( 5.2 per cent.) was lower than in the same period of any other year shewn in the table except 1911, which closed with a proportion of unemployment of 4.7 per cent.
3. Unemployment in Different Industries, 1919.-The following table shews the percentages unemployed in several of the fourteen industrial groups. It may be observed that for those industries in which employment is either unusually stable or, on the other hand, exceptionally casual, information as to unemployment cannot ordinarily be obtained from trade unions. Hence, certain industries such as railways, shipping, agricultural, pastoral, etc., and domestic, hotels, etc., are insufficiently represented in the returns. Particulars are not, therefore, shewn separately for these groups, such returns as are available being included in the last group, "Other and Miscellaneous."
UNEMPLOYMENT IN DIFFERENT INDUSTRIES AT THE END OF YEAR 1919.

| Industrial Group. | Number Reporting. |  | Unemployed. |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Unions. | Members. | Number. | Percentage. |
| I. Wood, Furniture, etc. | 20 | 19,2055 | 1,173 | 6.1 |
| II. Engineering, Metal Works, etc. | 61 | 40,464 | 2,250 | 5.6 |
| III. Food, Drink, Tobacco, etc. .. | 64 | - 33,443 | 3,619 | 10.8 |
| IV. Clothing, Hats, Boots, etc. | 25 | 30,915 | 533 | 1.7 |
| V. Books, Printing, etc. | 28 | 11,577 | 151 | 1.3 |
| VI. Other Manufacturing | 75 | 29,434 | 1,126 | 3.8 |
| VII. Building .. .. | 50 | 29,075 | 825 | 2.8 |
| VIII. Mining, Quarrying, etc. | 18 | 22,646 | 1,430 | 6.3 |
| X. Other Land Transport | 14 | 11,112 | 289 | 2.6 |
| IX., XI., XII., XIIL., and XIV., Other and Miscellaneous .. | 104 | 89,492 | 5,241 | 5.9 |
| All Groups . . . . . | 459 | 317,413 | 16,637 | 5.2 |

4. Unemployment in each State, 1919.--Any deductions which can be drawn from the data collected as to the relative degree of unemployment in the several States are subject to certain qualifications (in addition to those already stated on page 1061), inasmuch as the industries included in the trade union returns are not uniform for each State. In comparing the results for the individual States, it must therefore be borne in mind that, to some extent at least, comparisons are being drawn between different industries and not only between different States. Nevertheless, since the industrial occupations of the people vary considerably in the several States, all comparisons between the States based on comprehensive data as to unemployment must, to some extent, suffer from the defect indicated.

UNEMPLOYMENT IN DIFFERENT STATES AT THE END OF YEAR, 1919.

| State. |  |  | Number Reporting. |  | Unemployed. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Unions. | Members. | Number. | Percentage. |
| New South Wales | $\cdots$ | $\cdots$ | 131 | 142,264 | 7,170 | 5.0 |
| Victoria |  | . | 101 | 86,426 | 3,694 | 4.3 |
| Queensland | . | $\cdots$ | 53 | 38,843 | 3,286 | 8.5 |
| South Australia | $\cdots$ | . | 63 | 25,613 | 1,082 | 4.2 |
| Western Australia |  |  | 69 | 18,094 | 1,185 | 6.5 |
| Tasmania |  | $\cdots$ | 42 | 6,173 | 220 | 3.6 |
| Commonwealth | . | . | 459 | 317,413 | 16,637 | 5.2 |

## § 3. Current Rates of Wage in Different Occupations and States.

1. Minimum Rates of Wage.-The collection of material respecting the current rates of wage payable in different callings and in occupations in various industries carried on in each State of the Commonwealth was first undertaken by the Commonwealth Bureau of Census and Statistics in the early part of the year 1913. The particulars acquired were obtained primarily from awards, determinations and agreements under Commonwealth and State Acts, and therefore shew the minimum rates prescribed. In cases where no award, determination, or agreement is in force, particulars are given, where possible, of the ruling union or predominant rate as furnished by employers or secretaries of Trade Unions.

An extensive tabular presentation of the minimum rates of wage for adult male and female workers in the main occupations in the capital city of each State will be found in the Labour Report, No. 10. Space will not permit of the inclusion of the detailed tables in this volume.
2. Weighted Average Nominal Rate of Wage Payable to Adult Male Workers in each State, 31st December, 1919.-The following table shews the weighted average nominal weekly rate of wage payable to adult male workers for a full week's work in each State and the Commonwealth. Taking the average for the whole Commonwealth as the base $(=1,000)$, index-numbers for each State are also shewn. The number of occupations upon which these results are based amounts in the aggregate to no fewer than 3,948 .
WEIGHTED AVERAGE NOMINAL WEEKLY RATE OF WAGE PAYABLE TO ADULT MALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH, 31st DECEMBER, 1919.

| Particulars. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number of Occupations included | 874 | 909 | 627 | 567 | 489 | 482 | 3,948 |
| Weighted Average. Weekly Rate of Wage | 76s. 9d. | 723. 0d. | 78s. 7d. | 70s. 5 d . | 77s. عd. | 69s. 0d. | 74s. 11d.* |
| Index-Numbers | 1,025 | 961 | 1,050 | 940 | 1,037 | 921 | 1,000* |

* Weighted average.

The results shew that the weighted average nominal woekly rate of wage was highest in Queensland, followed in the order named by Western Australia, New South Wales, Victoria, South Anstralia, and Tasmania.
3. Weighted Average Nominal Weekly Rate of Wage Payable to Adult Male Workers in each Industrial Group, 31st December, 1919.-The following table gives similar particulars in regard to the several industrial groups and to the weighted average for all groups combined. In computing the index-numbers the weighted average for all groups is taken as base $(=1,000)$.
WEIGHTED avERAGE NOMINAL WEEKlY Rate of Wage payable to adult
MALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX-NUMBERS IN EACH INDUSTRIAL. GROUP, 31st DECEMBER, 1919.

| Industrial Group. | No. of Rates Included. | Weighted Average Weekly Wage (for Full Week's Work). | $\begin{gathered} \text { Index } \\ \text { Numbers. } \end{gathered}$ |
| :---: | :---: | :---: | :---: |
|  |  | s. d. |  |
| I. Wood, Furniture, etc. | 270 | $75 \quad 9$ | 1,012 |
| II. Engineering, Metal Works, etc. | 636 | 776 | 1,034 |
| III. Food, Drink, etc. | 576 | 756 | 1,008 |
| IV. Clothing, Boots, etc | 124 | 735 | 980 |
| V. Books, Printing, etc. | 205 | 809 | 1,078 |
| VI. Other Manufacturing | 875 | $75 \quad 4$ | 1,006 |
| VII. Building .. | 190 | 798 | 1,063 |
| VIII. Mining . . . | 161 | 884 | 1,179 |
| IX. Rail and Tram Services | 224 | $78 \quad 6$ | 1,048 |
| X. Other Land Transport | 70 | $73 \quad 4$ | 979 |
| XI Shipping, etc. $\quad . \quad$. | 198 | 77 9† | 1,038 |
| XII. Pastoral, Agricultural, etc. | 72 | $70 \quad 3 \ddagger$ | 937 |
| XIII. Domestic, Hotels, etc. | 114 | 68 7§ | 915 |
| XIV. Miscellaneous | 233 | 713 | 951 |
| All Groups | 3,948 | 7411 | 1,000* |

[^1] $\ddagger$ Including the value of board and lodging, where supplied, estimated at 20s. per week. § Including the value of board and lodging, where supplied, as follows:-In Sydney 11s. to 19 s . (according to class of establishment) ; in Melbourne $14 \mathrm{~s} . ;$ in Brisbane 15 s . and 17 s .; in Adelaide 14 s . (Restaurants) and 15 s . (Hotels and Clubs); in Perth 22s.; and in Hobart 15s. per week.

From the above table it may be seen that the highest weighted average wage was that paid in Group VIII. (Mining), 88 s. 4 d . per week, or approximately 18 per cent. above the weighted average for all groups. The rates of wage range from 88 s .4 d . per week down to 68s. 7d. per week, in Group XIII. (Hotels, etc.), which is 8.5 per cent. below the average of all groups.
4. Weighted Average Nominal Rate of Wage Payable to Adult Female Workers in each State, 31st December, 1919.-The following table shews the weighted average nominal weekly rate of wage payable to adult female workers for a full week's work in each State and the Commonwealth. Taking the average for the whole Commonwealth ns the base ( $=1,000$ ), index-numbers for each State are also shewn :-
weighted average nominal weekly rate of wage payable to adult FEMALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEX. NUMBERS IN EACH STATE AND COMMONWEALTH, 31st DECEMBER, 1919.

| Particulars. | N.S.W. | Vic. | Q'land. | S. Aust. | W. Aust. | Tas. | C'wealth. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number of Occupations included | 85 | 87 | 37 | 47 | 24 | 28 | 308 |
| Weighted Average Weekly Rate of Wage | 40s. 0d. | 34s. 5 d . | 38s. 4d. | 33s. 3d. |  | 33s, 0d. | 37s. 1d.* |
| Index-Numbers .. | 1,080 | 929 | 1,035 | 888 | 1,176 | 890 | 1,000 |

It will be seen that the weighted average nominal weekly rate of wage for adult female workers was highest in Western Australia, followed in the order named by New South Wales, Queensland, Victoria, South Australia, and Tasmania.
5. Weighted Average Nominal Weekly Rates of Wage Payable to Adult Female Workers in Industrial Groups, 31st December, 1919.-The following table gives separate particulars regarding the weighted average nominal weekly rates of wage of females in the chief industrial groups in which they are employed, and also shews the weighted average for all groups combined. Index-numbers based on the average for the Commonwealth as the base $(=1,000)$ are also given :-
WEIGHTED AVERAGE NOMINAL WEEKLY RATES OF WAGE PAYABLE TO ADULT FEMALE WORKERS FOR A FULL WEEK'S WORK, AND WAGE INDEXNUMBERS IN INDUSTRIAL GROUPS, 31st DECEMBER, 1919.


* See footnote § on preceding page.
$\dagger$ Weighted average.

6. Relative Hours of Labour and Hourly Rates of Wage, 1914 to 1919.-The rates of wage referred to in the preceding paragraphs of this section relate to the minimum rates payable for a full week's work. It should be observed, however, that the number of hours which constitutes a full week's work differs in many instances; not only as between various trades and occupations in each individual State, but also as between the same trades and occupations in the several States. In order to secure what may be for some purposes a more adequate standard of comparison, it is desirable to reduce the comparison to a common basis, viz., the rate of wage per hour. Particulars are given in the following table, classified according to States, for male and female occupations separately, at the end of each of the years 1914 to 1919. These particulars relate to (a) the weighted average nominal weekly wage, (b) the weighted average number of working hours constituting a full week's work, and (c) the weighted average hourly wage. It should be observed that the weighted average weekly wage relates to all industrial groups combined, and includes the value of board and lodging, where supplied, in land occupations, and the value of victualling in marine occupations $\ddagger$; whereas the number of working hours and the houriy wage relate to all industrial groups other than Groups XI. (Shipping), and XII. (Agricultural, Pastoral, etc.). Owing to the fact that many of the occupations included in these two groups are of a casual or seasonal nature, and that the hours of labour in these occupations are not generally regulated either by awards or determinations of industrial tribunals or otherwise, the necessary data for the computation of the average number of working hours are not available.

The general effect of reducing the rates of wage to a common basis (i.e., per hour) is to decrease the amount of the difference shewn when comparing the weekly wage in the several States.

## WEIGHTED AVERAGE NOMINAL WEEKLY AND HOURLY RATES OF WAGE Payable to adult workers, and weekly hours of labour, 31st DECEMBER, 1914 TO 1919.

| Date. | Particulars. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | C'wlth. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

Male Workers.


Female Workers.

| 31st Dec., 1914 | S Weekly Wage |  | $\begin{array}{cc}8 . & d \\ 26 & 10\end{array}$ | $\begin{array}{cc}8 . & d . \\ 27 & 9\end{array}$ |  | $\begin{array}{cc}s . & d . \\ 24 & 1\end{array}$ |  | s. $\begin{array}{cc}\text { s. } \\ 25 & \text { d } \\ \text { 20 }\end{array}$ | $\begin{array}{cc}s . & d . \\ 27 & 5\end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\{$ Working Hours |  | 49.34 | 48.54 | 49.82 | 49.33 | 49.44 | 50.76 | 49.11 |
|  | (Hourly Wage |  | $-16 \frac{1}{4}$ 8. 8. | -/68 s. d. | s. $/ 6 \frac{1}{d}$, | 8. ${ }^{\text {c }}$ d | 8. ${ }^{-19}$. | - s . 6. | - 8.6 d |
| 31st Dec., 1915 | Weekly Wage |  | 87 | 2611 | 2611 | 8. | 8. <br> 37 | ${ }^{88} 80$ | 274 |
|  | $\{$ Working Hours | $\cdots$ | 49.45 | 48.46 | 49.84 | 49.35 | 49.86 | 50.14 | 49.12 |
|  | (Hourly Wage | . | -16 | - $16 \frac{8}{2}$ | ${ }_{8}^{-/ 64}$ | ${ }_{8}^{-/ 6}$ d. | $-/ 9$ 8.9 |  | s./63 |
| 31st Dec., 1916 | (Weekly Wage |  | $\begin{array}{cc}8 . & d . \\ 28 & 7\end{array}$ | $\begin{array}{cc}8 . & d . \\ 28 & 5\end{array}$ | $\begin{array}{cc}8 . & d . \\ 27 & 3\end{array}$ | 8. $\begin{gathered}\text { 8. } \\ 24 . \\ 24 .\end{gathered}$ | $\begin{array}{cc}8 . & d . \\ 38 & 10\end{array}$ | $\begin{array}{cc}8 . & d . \\ 28 & 3\end{array}$ | $\begin{array}{cc} s . \\ 28 & \bar{d} \\ 28 & 5 \end{array}$ |
|  | Working Hours |  | 49.44 | 48.36 | 49.85 | 49.02 | 49.08 | 49.83 | 49.02 |
|  | (Hourly Wage | $\cdots$ | $-/ 7$ | ${ }^{-/ 7}$ | -/61 | ${ }_{8}^{-/ 6} d$ | ${ }_{8}^{-19 \frac{1}{2}}$ | - ${ }^{-163}$ | s. ${ }^{-17}$ |
|  | Weekly Wage |  | $\begin{array}{cc}8 . & d . \\ 30 & 5\end{array}$ | $\begin{array}{cc}\text { s. } & d . \\ 30 & 4\end{array}$ | $\begin{array}{cc}\text { s. } & d . \\ 30 & 5\end{array}$ | $\begin{array}{cc}8 . & d . \\ 27 & 9\end{array}$ | $\begin{array}{cc}8 . & \text { d. } \\ 38 & 10\end{array}$ | $\begin{array}{cc}8 . & d . \\ 28 & 5\end{array}$ | $\begin{array}{cc} s . & d . \\ 30 & 5 \end{array}$ |
| 31st Dec., 1917 | Working Hours | $\ldots$ | 48.98 | 48.32 | 48.99 | 48.73 | 48.78 | 49.83 | 48.71 |
|  | Hourly Wage | . | -/7\% | -/71 | ${ }^{-/ 7}$ d | $s^{-164}$ | ${ }_{8}^{-/ 91}{ }^{\text {d }}$ | -/64 | s. $-7 \frac{1}{d}$ |
| 31st Dec., 1918 |  |  | $\begin{array}{cc}8 . & d . \\ \text { 31 } & 10\end{array}$ | $\begin{array}{cc}8 . & d . \\ 31 & 3\end{array}$ |  | $\begin{array}{cc}s . & d . \\ 29 & 5\end{array}$ | $\begin{array}{cc}8 . & \text { d. } \\ 38 & 10\end{array}$ | $\begin{array}{rr}8 . & d . \\ 28 & 9\end{array}$ | $\begin{array}{cc}8 . & d . \\ 31 & 9\end{array}$ |
|  | $\left\{\begin{array}{l}\text { Weekly Wage } \\ \text { Working Hours }\end{array}\right.$ | $\cdots$ | 31.10 48.35 | 31 48.32 | 32.37 48.37 | 29 48.73 | 48.78 | 28 49.83 | 31.9 |
|  | (.Hourly Wage |  | -/8 | -/73 | -/8 | $-17 \frac{1}{4}$ | -/91 | -/7 | $-77 \frac{3}{6}$ |
| 31st Dec., 1919 |  |  | s. d. | ${ }^{\text {s. }}$ d. ${ }^{\text {d. }}$ | ${ }^{8 .}$. ${ }^{\text {d }}$. | s. ${ }^{\text {d }}$. | 8. d. | ${ }_{8 .}^{8 .}$ d. | 8. d. |
|  | (Weekly Wage |  | $40 \quad 0$ | 345 | $38 \quad 4$ | $33 \quad 3$ | 43 | 330 | 371 |
|  | $\left\{\begin{array}{l}\text { Working Hours } \\ \text { Hourly Wage }\end{array}\right.$ | $\cdots$ | 47.53 $-/ 10$ | 47.63 $-/ 88$ | 46.76 $-/ 93$ | 47.67 $-/ 8 \frac{1}{2}$ | 48.12 $-/ 11$ | 49.28 -18 | 47.54 $-/ 94$ |

[^2]
# RELATIVE INDEX-NUMBERS FOR WEEKLY AND HOURLY WEIGHTED AVERAGE WAGE, 30th APRIL, 1914, 31st DECEMBER, 1914 T0 1919. 

Nore.-Weighted Average for the Commonwealth at 30th April, 1914, as base $(=1,000)$.


Male Workers.

| 30th April, 1914 | $\cdots$ | $\left\{\begin{array}{l}\text { Weekly Wage } \\ \text { Hourly Wage }\end{array}\right.$ |  | 1,011 $\mathbf{9 9 8}$ | 984 980 | 955 963 | 986 991 | 1,128 1,170 | 952 933 | 1,000 1,000 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 31st Dec 1914 |  | \{ Weekly Wage |  | 1,019 | 990 | 969 | 988 | 1,140 | 956 | 1,008 |
| 31st Dec., 1914 |  | \{ Hourly Wage | . | 1,010 | 990 | 985 | 093 | 1,173 | 936 | 1,009 |
| 31st Dec., 1915 |  | $\{$ Weekly Wage |  | 1,044 | 1,002 | 986 | 992 | 1,149 | 965 | 1,023 |
|  |  | Q Hourly Wage | . | 1,039 | 1,006 | 1,008 | 1,001 | 1,182 | 946 | 1,030 |
| 31st Dec., 1916 |  | \{ Weekly Wage |  | 1,123 | 1,067 | 1,095 | 1,071 | 1,182 | 1,034 | 1,100 |
|  |  | \{ Hourly Wage | . | 1,127 | 1,074 | 1,097 | 1,075 | 1,206 | 1,011 | 1,105 |
| 31st Dec., 1917 | $\cdots$ | \{ Weekly Wage |  | 1,168 | 1,143 | 1,183 | 1,144 | 1,250 | 1,081 | 1,164 |
|  |  | \{ Hourly Wage |  | 1,162 | 1,138 | 1,209 | 1,145 | 1,252 | 1,079 | 1,164 |
| 31st Dec., 1918 | $\cdots$ | \{ Weekly Wage |  | 1,196 | 1,189 | 1,261 | 1,188 | 1,276 | 1,110 | 1,205 |
|  |  | \{ Hourly Wage |  | 1,196 | 1,192 | 1,297 | 1,176 | 1,282 | 1,120 | 1,210 |
| 31st Lec., 1919 | $\cdots$ | (Weekly Wage |  | 1,393 | 1,306 | 1,426 | 1,277 | 1,409 | 1,251 | 1,359 |
|  |  | (Hourly Wage |  | 1,405 | 1,322 | 1,512 | 1,262 | 1,408 | 1,259 | 1,378 |

Female Workers.

|  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 30th April, 1914 |  | \{ Weekly Wage |  | 984 | 1,006 | 989 | 885 | 1,373 | 950 | 1,000 |
| 30 h Aprif, 1914 |  | \{ Hourly Wage |  | 980 | 1,021 | 976 | 881 | 1,386 | 920 | 1,000 |
| 31st Dec., 1914 |  | \{ Weekly Wage | . | 987 | 1,022 | 996 | 885 | 1,373 | 950 | 1,008 |
| 31st .Dec., 1914 |  | \{ Hourly Wage | $\cdots$ | 983 | 1,035 | 983 | 881 | 1,564 | 920 | 1,009 |
| 31st Dec., 1915 |  | S Weekly Wage | $\ldots$ | 1,007 | 990 | 990 | 901 | 1,376 | 1,031 | 1,005 |
| 31st Dec., 1915 |  | ( Hourly Wage | . | 1,002 | 1,005 | 976 | 898 | 1,357 | 1,011 | 1,006 |
| 31st Dec., 1916 |  | ¢ Weekly Wage | $\ldots$ | 1,050 | 1,047 | 1,004 | 915 | 1,429 | 1,041 | 1,047 |
| 31st Dec., 1916 |  | ( Hourly Wage | . | 1,044 | 1,063 | 991 | 916 | 1,431 | 1,027 | -1,048 |
| 31st Dec., 1917 |  | ¢ Weekly Wage | . | 1,119 | 1,116 | 1,120 | 1,020 | 1,430 | 1,045 | 1,121 |
| 31st Dec., 1917 |  | Q Hourly Wage |  | 1,122 | 1,134 | 1,122 | 1,027 | 1,440 | 1,029 | 1,130 |
| 31st Dec 1918 |  | \{ Weekly Wage | $\ldots$ | 1,173 | 1,151 | 1,208 | 1,084 | 1,430 | 1,059 | 1,168 |
| 31st Dec., 1918 | . | \{ Hourly Wage | . . | 1,191 | 1,169 | 1,226 | 1,092 | 1,426 | 1,044 | 1,185 |
| 31st IDec., |  | \{ Weekly Wage | . | 1,474 | 1,268 | 1,412 | 1,225 | 1,605 | 1,21: | 1,365 |
| 31st 1ec., | . | Hourly Wage | . | 1,523 | 1,307 | 1,483 | 1,262 | 1,639 | 1,211 | 1,410 |

## § 4. Variations in Nominal and Effective Wages.

1. Variations in Wage Index-Numbers in Various Industries, 1901 to 1919.-The total number of different occupations for which particulars as to wages are available back to 1901 is 652 . In 1913 the number of occupations was increased to $\mathbf{3 , 9 4 8}$. These wages relate generally to award rates, but in a few cases, more especially for the earlier years, when there were no award rates fixed, predominant or most frequent rates have been taken. The occupations have been distributed over the fourteen industrial groups
already specified, and index-numbers computed for each group for the whole Commonwealth. The wages refer generally to the capital town of each State, but in industries such as mining and agriculture, the rates in the more important centres have been taken.

The following table shews wage index-numbers for the whole Commonwealth in each of the fourteen industrial groups during the years specified. Rates of wage for females are not included. The index-numbers are " weighted " according to the number of persons engaged in different industrial groups in each State and the Commonwealth (see Report No. 10, page 75). In the tables of index-numbers given in this Section, the weighted average wage in 1911 for all States or industries, as the case may be, is taken as base ( $=1,000$ ). The result is that the index-numbers are comparable in all respects, that is to say, they shew not only the variations in wages from year to year in each State or industrial group, but they also furnish comparisons as to the relative wages in each State or industry, either in any particular year, or as between one year and another, and one State or industry and another.

VARIATIONS IN NOMINAL. WAGE INDEX-NUMBERS IN DIFFERENT INDUSTRIES IN THE COMMONWEALTH, 1901 T0 1919. (WEIGHTED AVERAGE FOR ALL GROUPS IN $1911=1,000$.)

| Particulars. | Num <br> Occup inclu | ber of ations ded. | 1901. | 1906. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} 1901 \\ \text { to } \\ 1912 . \end{gathered}$ | $\begin{gathered} 1913 \\ \text { to } \\ 1919 . \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |
| I. Wood, Furniture, etc... | 27 | 270 | 1,019 | 1,024 | 1,125 | 1,144 | 1,142 | 1,161 | 1,174 | 1,245 | 1,288 | 1,345 | 1,479 |
| II. Engineering, Metal |  |  |  |  |  | 1,104 |  |  |  |  |  | 1,340 |  |
| Works, etc. .. <br> III. Food, Drink, etc | 101 | 636 576 | 945 871 | 957 837 | 1,064 |  | 1,113 | 1,127 | 1,174 | 1,211 | 1,268 | 1,340 | 1,512 |
| III. Food, Drink, etc. | 34 | 576 | 871 | $8 \leq 7$ | 991 | 1,088 | 1,074 | 1,085 | 1,127 | 1,194 | 1,24] | 1,288 | 1,473 |
| IV. Clothing, Hats, Boots, etc. | 13 | 124 | 708 | 841 | 981 | 990 | 1,019 | 1,034 | 1,037 | 1,104 | 1,163 | 1,198 | 1,433 |
| V. Books, Printing, etc. | 25 | 205 | 996 | 1,002 | 1,149 | 1,188 | 1,234 | 1,246 | 1,259 | 1,328 | 1,376 | 1,446 | 1,576 |
| VI. Other Manufacturing | 102 | 875 | 907 | $\left.\begin{array}{r} 1,002 \\ 906 \end{array}\right]$ | $1,013$ | 1,037 | 1,076 | 1,093 | 1,125 | 1,203 | 1,245 | 1,289 | 1,470 |
| VII. Building $\quad \cdots$ | 67 | 190 | 1,050 | 1,070 | 1,213 | 1,245 | 1,270 | 1,276 | 1,285 | 1,359 | 1,413 | 1,449 | 1,554 |
| VIII. Mining, Quarries, etc. | 71 | 161 | 1,067 | 1,093 | 1,194 | 1,216 | 1,270 | 1,272 | 1,299 | 1,420 | 1,528 | 1,532 | 1,724 |
| IX. Rail and Tram Services | 68 | 224 | 1,021 | 1,024 | 1,113 | 1,164 | 1,165 | 1,165 | 1,187 | 1,236 | 1,286 | 1,345 | 1,532 |
| X. Other land Trans- | 68 | 224 | 1,021 | 1,024 | 1,113 | 1,163 | 1,165 |  |  | 1,230 |  |  |  |
| XI Shipring - | 9 | 70 | 795 | 795 | 910 | 993 | 996 | 1,026 | 1,041 | 1,128, | 1,210 | 1,237 | 1.431 |
| XI. Shipping, etc. $\because$ | 74 | 198 | 751 | 778 | 871 | 942 | 953 | 972 | 1,026 | 1,153 | 1,194 | 1,257 | 1,518 |
| XII, Agrichlture, Pastoral. etc. | 8 | 72 | 627 | 671 | 839 | 944 | 965 | 965 | 969 | 1,073 | 1,19? | 1,231 | 1,370 |
| XIII. Domestic, Hotels, etr. | 17 | 114 | 598 | 676 | 887 | 894 | 918 | 935 | 948 | 995 | 1,052 | 1.104 | 1.338 |
| XIV. Miscellaneous .- | 36 | 233 | 759 | 771 | 929 | 1,015 | 1,045 | 1,054 | 1,065 | 1,137 | 1,185 | 1,234 | 1,389 |
| All Groups* | 652 | 3,948 | 848 | 866 | 1,000 | 1,051 | 1,076 | 1,085 | 1,102 | 1,184 | 1,252 | 1,296 | 1,462 |

[^3] reduction in the award rates in the furniture trade resulting from an appeal made by employers.

It may be seen that the index-numbers increased during the whole period under review from 848 in 1901 to 1,000 in $1911,1,051$ in $1912,1,184$ in 1916, 1,252 in 1917, 1,296 in 1918, and to 1,462 in 1919.
2. Variations in Wage Index-Numbers in Different States, 1901 to 1919.-The following table shews the progress in rates of wage for all industries in each State, the weighted average wage for the Commonwealth in 1911 being taken as the base $(=1,000)$. These results are based generally upon rates of wage prevailing in the capital town of each State, but in certain industries, such as mining, rates are necessarily taken for places other than the capital towns.

## VARIATIONS IN NOMINAL WAGE INDEX-NUMBERS IN DIFFERENT STATES, 1901 T0 1919.

(Weighted Average Wage for Commonwealth in $1911=1,000$.)


* Weighted average.

Note.-The figures in the above table are comparable both horizontally and vertically.
The significance of the above figures since 1906 can be better appreciated by reference to the graph on page 1071, which shews not only variations in wages in each State from year to year, but also the difference in wage level as between the several States. From this graph it is clearly seen that, excluding Western Australia, the difference between nominal wages in the several States has decreased very considerably since 1906. This difference is shewn at any point by the vertical distance between the graphs. Wages in Queensland increased since 1914 at a higher rate than in any other State, and the general level in that State is now higher than in any other State. The graphs for Victoria and South Australia lie very close together throughout the period. In Tasmania the first determination under the Wages Boards Acts 1910 and 1911 came into force in 1911. Since then wages in that State have increased rapid!y from 20 per cent. below the average for the Commonwealth to less than 8 per cent. below.
3. Variations in Effective Wages.-In order to obtain an accurate measure of the progress in the material welfare of wage-earners, regard must be had to the purchasingpower of wages, and the index-numbers based merely upon nominal rates of wage must consequently be subject to some modification, inasmuch as they take no account of variations in the purchasing-power of money. In computing these effective wage index-numbers, the nominal wage index-numbers given in sub-section 2 hereof have been divided by the purchasing-power-of-money index-numbers in Section IV., paragraph 5 of Labour Report No. 10, pp. 28-29. The resulting index-numbers shew for each State and for the Commonwealth for the years specified the variations in effective wages.

The following table shews the effective wage index-numbers for each State for each of the years indicated from 1901 to 1919 :-
variation in effective wages in each state and commonwealth, 190! T0 1919.*

| Particulars. | $90$ | $06 .$ | 10 | 1911. | 1912. | 3. | 19 | 1915. | 1916. | 1917 | 1918. | 1919. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New South Wales | 961 | 947 | 973 | 973 | 922 | 924 | 909 | 850 | 867 | 893 | 902 | 949 |
| Victoria | 915 | 919 | 981 | 1,037 | 981 | 1,007 | 964 | 844 | 877 | 950 | 947 | 948 |
| Queensland. | 1,172 | 1,165 | 1,095 | 1,090 | 1,032 | 1,060 | 1,045 | 912 | 991 | 1,078 | 1,083 | 1,064 |
| South Australia | ${ }^{1} 948$ | , 934 | 1,943 | 1957 | 906 | 947 | 929 | 847 | 896 | 1,989 | ${ }_{1} 957$ | 1935 |
| Western Australia | 1,024 | 1,029 | 1,091 | 1,023 | 1,032 | 1,076 | 1,073 | 1,011 | 1,005 | 1,079 | 1,107 | 1,068 |
| Tasmania | 827 | 833 | 812 | 838 | 896 | 976 | 943 | 843 | 870 | 894 | 880 | 900 |
| Commonwealth | 964 | 960 | 985 | 1,000 | 955 | 975 | 952 | 862 | 894 | 950 | 952 | 968 |

[^4]The figures in the above table from the year 1907 onwards are shewn in the graph on page 1072. A comparison between this graph and the preceding one shews that the difference between nominal and effective wages is very marked. In the first place, the whole nature of the graphs is entirely different. Instead of having a series of lines showing a practically continuous and rapid upward trend, the effective wages shew (except for Tasmania) a series of fluctuating points, in which no very marked tendency is immediately discernible. It will be seen that, generally speaking, the years 1907, 1909, 1910, 1911, 1913, 1916, 1917, 1918 and 1919 were marked by increases in effective wages, but that in each of the years 1908, 1912, 1914 and 1915, there were rapid decreases. In each of these years in which effective wages declined there was a rapid increase in cost of food and groceries, which was not, immediately, compensated by increased wages. Since 1911 the effect of prices on nominal wages has caused serious fluctuations in the effective wage, e.g., the effective wage index-number for the Commonwealth for the year 1915 (862) was 13.8 per cent. below that of 1911. From 1915 to 1919 the effective wage index-number rose by 12.3 per cent. to 968 , which, however, still leaves the average effective wage for the Commonwealth lower than in 1911 by 3.2 per cent. In the next table index-numbers are given for nominal wages and for the purchasing-power of money, together with the effective wage index-number derived therefrom.

One important feature common to both graphs (nominal and effective wages) is the manner in which the graphs for the individual States have, on the whole, approached more closely together. With the adoption of rates of wage fixed according to the relative purchasing-power of money, it appears probable that this tendency will continue in the future.
4. Variations in Effective Wages and Standard of Comfort, 1901 to 1919.-In the preceding paragraph particulars are given as to variations in effective wages in each State, due allowance having been made for variations in purchasing-power of money, though not for unemployment. Attention has also been drawn to the limitations to which they are subject in abnormal times.

For years prior to 1913 the data available as to unemployment are so meagre that comparative results allowing for variations both in purchasing-power of money and in unemployment cannot be accurately computed for the several States. In the subjoined table, however, the percentage of unemployment for the whole Commonwealth at the end of the years specified has been used in order to obtain results shewing the variations in unemployment upon effective wages. Column I. shews the nominal rate of wage index-numbers, and Column II. the relative percentages unemployed. Applying these percentages to the numbers shewn in Column I., and deducting the results from each corresponding index-number, so as to allow for relative loss of time, the figures in Column III. are obtained. These figures are then re-computed with the year 1911 as base, and are shewn in Column IV. In Column V. the purchasing-power-of-money index-numbers are shewn, and in Columns VI. and VII. the effective wage index-numbers are given, firstly, for full work, and, secondly, allowing for lost time. These are obtained by dividing the figures in Columns I. and IV., respectively, by the corresponding figures in Column V. The resulting index-numbers shew for the Commonwealth, for the years specified, the variations in effective wages, or in what may be called the "standard of comfort." ${ }^{*}$

A comparison between the figures in Columns I. and VI. shews the relation between the nominal rates of wage and the purchasing efficiency of these rates. The figures in Column VII. shew variations in effective wages after allowing not only for variations in purchasing-power of money, but also for the relative extent of unemployment.

[^5]- NOMINAL WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH. 1906 TO 1919.


EEEECLIVE WAGE INDEX-NUMBERS IN EACH STATE AND COMMONWEALTH, 1906 TO 1919.



to numbers on map.
 $B \underset{A}{B} \overbrace{A} \overbrace{A}^{1018} \overbrace{A}^{1010}$









1074
alelbourde wholesale price index-nuabbrs, 1861 to 1999 .


UNEMPLOYMENT, PURCHASING-POWER-OF-MONEY AND NOMINAL AND EFFECTIVE WAGE-INDEX NUMBERS, 1901 TO 1919.*

| Year |  | $\begin{gathered} \text { I. } \\ \text { Nominal } \\ \text { Wage } \\ \text { Index- } \\ \text { Numbers. } \end{gathered}$ | II. <br> Percentage Unemployed. | Rates of Wage IndexNumbers, allowing for Lost Time. |  | Purchas-ing-power-of-money IndexNumbers. | Effective Wage Index-Numbers. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $\begin{gathered} 111 . \\ \text { Actual. } \end{gathered}$ | $\begin{gathered} \text { IV. } \\ \text { Recom. } \\ \text { puted. } \\ (1911 \\ =1,000) . \end{gathered}$ |  | VI. | $\begin{gathered} \text { VII. } \\ \text { Allowing } \\ \text { for } \\ \text { Unemploy- } \\ \text { ment. } \end{gathered}$ |
| 1901 |  | 848 | 6.6 | 793 | 832 | 880 | 964 | 945 |
| 1906 |  | 866 | 6.7 | 808 | 848 | 902 | 960 | 940 |
| 1907 |  | 893 | 5.7 | 842 | 884 | 897 | 996 | 986 |
| 1908 |  | 900 | 6.0 | 846 | 888 | 951 | 946 | 934 |
| 1909 |  | 923 | 5.8 | 870 | 913 | 948 | 974 | 963 |
| 1910 |  | 955 | 5.6 | 901 | 945 | 970 | 985 | 974 |
| 1911 |  | 1,000 | 4.7 | 953 | 1,000 | 1,000 | 1,000 | 1,000 |
| 1912 |  | 1,051 | 5.5 | 993 | 1,042 | 1,101 | 955 | 946 |
| 1913 |  | 1,076 | 5.3 | 1,021 | 1,071 | 1,104 | 975 | 970 |
| 1914 |  | 1,085 | 11.0 | 966 | 1,014 | 1,140 | 952 | 889 |
| 1915 |  | 1,102 | 6.8 | 1,027 | 1,078 | 1,278 | 862 | 844 |
| 1916 |  | 1,184 | 6.7 | 1,105 | 1,159 | 1,324 | 894 | 875 |
| 1917 |  | 1,252 | 7.4 | 1,159 | 1,216 | 1,318 | 950 | 923 |
| 1918 |  | 1,296 | 5.5 | 1,225 | 1,285 | 1,362 | 952 | 943 |
| 1919 | . | 1,462 | ¢. 2 | 1,386 | 1,454 | 1,510 | 968 | 963 |

* As to the effect in abnormal periods, see Section IV., par. 3, of Labour Report No. 6.

During the period 1901-19, while the nominal wage index-number rose from 848 to 1,462 , an increase of 72.4 per cent., prices rose from 880 to 1,510 , or by 71.6 per cent., the net result therefore being that effective full time wages rose by only .4 per cent. Compared with 1911, effective wages shew a fall of 3.2 per cent., although nominal wages increased by 46.2 per cent.

## § 5. Changes in Rates of Wage.

1. General.-The collection of information regarding changes in rates of wage throughout the Commonwealth dates from the lst January, 1913.
(i) Definition of a Change in Rate of Wage. For the purpose of these statistics a change in rate of wage is defined as a change in the weekly rates of remuneration of a certain class of employees, apart from any change in the nature of the work performed or apart from any revision of rates due to increased length of service or experience. It is obvious that under this definition certain classes of changes are excluded, such, for example, as (a) changes in rates of pay due to promotion, progressive increments, or, on the other hand, to reduction in pay or grade to inefficient workers, and $(b)$ changes in average earnings in an occupation due to a change in the proportions which higher paid classes of workers bear to lower paid classes. Bonuses to employees have not been taken into account in the tabulations. Each single change recorded relates to a change in the rates of wage effected in a specific industry or calling, and includes any and all changes to workers in that industry, irrespective of the different number of separate occupations
C.6644.-33
or trades affected. Further, it should be observed that in some instances a change may relate to the employees of a single employer or to those of a number of employers, according to the instrument or method operating to bring about the change.
(ii) Sources of Information. Primary information merely as to the fact that a change in rate of wage has occurred is obtained through the following channels:(a) the Industrial Registrar or Chief Inspector of Factories in each State; (b) Reports from Labour Agents and Correspondents; (c) Quarterly reports from Secretaries of Trade Unions; (d) Returns relating to industrial disputes which resulted in changes in rates of wage; (e) Reports in newspapers, labour and trade reviews, and other publications.
(iii) Collection of Particulars concerning Changes. On the occurrence of a ohange in rate of wage, forms* (prescribed under the Census and Statistics Act 1905) are issued to employers and employers' associations (if any) and to the secretaries of the trade unions, the members of which are affected by the change. The particulars which have to be inserted in these forms furnish information regarding the occupations of the workers affected, the number of workers in each occupation, the rates of wage paid before and after the change, the locality affected, and the date on which the change took effect. Information must also be furnished regarding employers and employers' associations concerned (if any), and the method by which the change was effected.

When the forms are returned from the various persons who are required to complete them, the returns are checked and compared with each other and with copies of awards, determinations, and agreements. In all cases when the information furnished on the forms is incomplete or unsatisfactory, further inquiries are made, and the figures checked by reference to census results, industrial statistics, factory reports, etc.
2. Comparative Summary of Changes in Rates of Wage in each State, 1913-1919.The following table gives particulars of changes which occurred in each State of the Commonwealth during the years specified. As regards the number of persons affected, the particulars given refer to the total number of persons ordinarily engaged in the various industries. The results as to the amount of increase in wages are computed for a full week's work for all persons ordinarily engaged in the several industries and occupations affected, and in cases of changes in existing minimum rates under awards or determinations of industrial tribunals, it has ordinarily been assumed (in the absence of any definite information to the contrary) that the whole of the employees in each occupation received the minimum rates of wage before and after the change.

It should be clearly understood that the figures given in the third division of the following table (amount of increase per week) do not relate to the increase each week, but only to the increase in a single week on the assumption that the full number of persons ordinarily engaged in the particular trade or occupation affected by the change were employed during that week. It is obvious, therefore, that the aggregate effect per annum cannot be obtained without making due allowance for unemployment and for occupations in which employment is seasonal or intermittent. It is also obvious that since unemployment and activity in all branches of industry may vary from year to year, and in many branches from season to season also, no accurate estimate of the actual effect of the changes in the total amount of wages received or paid per annum can be made until the determining factors have been investigated. These factors are ( $a$ ) the amount of unemployment, and (b) the period of employment in seasonal industries.

[^6][^7]changes in rates of wage.-NUMBER and effect of changes in each STATE AND TERRITORY, 1913 TO 1919.

| Particulars. | N.S.W. | Vic. | Q'land. | S.A. | W.A. | Tas. | N.T. | *All States. | C'wealth. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1913 | 149 | 81 | 41 | 26 | 20 | 12 |  |  | 32 |
| 1914 | 185 | 69 | 50 | 18 | 42 | 19 |  | 1 | 384 |
| 1915 | 169 | 87 | 60 | 31 | 25 | 24 | 3 | 2 | 401 |
| No. of Changes .. 1916 | $381 \dagger$ | 168 | 134 | 98 | 42 | 37 | 4 | 6 | 870 |
| 1917 | 201 | 106 | 142 | 78 | 55 | 38 | 16 | 1 | 637 |
| 1918 | 229 | 201 | 236 | 113 | 63 | 48 | 4 | 4 | 896 |
| (1919 | 457 | 218 | 216 | 136 | 112 | 128 | 13 | 4 | 1,284 |
| [ 1913 | 89,618 | 49,254 | 16,645 | 4,574 | 3,036 | 3,005 | . |  | 166,132 |
| 1914 | 56,469 | 29,876 | 20,198 | 5,624 | 8,399 | 4,262 |  | 390 | 125,218 |
| No. of Persons 1915 | 109,260 | 39,087 | 22,864 | 10,206 | 2,661 | 3,147 | 185 | 10,000 | 197,410 |
| Affected of Persons 1916 | 242,721 | 119,878 | 72,079 | 40,925 | 5,848 | 7,232 | 258 | 3,546 | 492,487 |
| Afrected 1917 | 101,158 | 68,272 | 72,843 | 20,209 | 12,997 | 5,283 | 1,143 | 11,000 | 292,910 |
| 1918 | 146.399 | 110,027 | 74.174 | 16,239 | 9,871 | 3,631 | 624 | 616 | 361.581 |
| 1919 | 280,031 | 125,693 | 116,627 | 35,377 | 26,673 | 16,108 | 1,287 | 2,095 | 603,891 |
|  | £ | £ | ${ }^{\text {¢ }}$ | ${ }^{\text {¢ }}$ | £ | ¢ | £ | $\pm$ | $\pm$ |
| ( 1913 | 21,789 | 9,880 | 3,702 | 1,279 | 428 | 635 |  |  | 37,713 |
| 1914 | 13,558 | 6,688 | 5,128 | 1,941 | 2,423 | 804 |  | 143 | 30,685 |
| Total Net Amount of 1915 | 29,525 | 8,078 | 6,398 | 3,539 | 562 | 778 | 87 | 2,938 | 51,905 |
| Total Net Amount of 1916 | 56,875 | 30,566 | 40,451 | 9,930 | 1,440 | 1,980 | 88 | 1,593 | 142,923 |
| Increase per Week 1917 | 28,896 | 15,129 | 20,083 | 6,070 | 3,407 | 1,987 | 635 | 4,800 | 81,007 |
| 1918 | 32.194 | 25.514 | 19.679 | 3.885 | 2.133 | 1.323 | 273 | 239 | 85.260 |
| 1919 | 137,642 | 43,930 | 43.718 | 11,989 | 10,249 | 7,350 | 618 | 949 | 256,445 |
|  | 8. ${ }^{\text {d }}$. | ${ }_{4} . d_{0}$ | s. ${ }^{\text {d }}$. | ${ }^{\text {s. }}$ S $a_{7}$ | ${ }^{\text {8. }}$ d. 10 | ${ }_{4}^{8 .}{ }^{\text {d }}$. | s. d. | s. $d$. | 8. ${ }_{4}$ d |
| 1914 | 410 | 4 4 | $\begin{array}{ll}4 & 5 \\ 5 & 1\end{array}$ | $\begin{array}{ll}5 & 7 \\ 6 & 11\end{array}$ | 2 5 | $\begin{array}{ll}8 & 3 \\ 3 & 9\end{array}$ |  | 74 | $\begin{array}{rrr}4 & 6 \\ 4 & 11\end{array}$ |
| Average Increase per 1915 | 55 | 42 | 57 | 611 | 43 | 411 | 95 | 511 | 53 |
| A verage Increase per 1916 | 48 | 51 | 113 | 410 | 411 | 56 | 610 | 90 | 510 |
| Head per Week . 1917 | 59 | 45 | 56 | 60 | 53 | 76 | 111 | 89 | 56 |
| 1918 | 45 | 48 | 54 | 49 | 44 | $7 \quad 3$ | 89 | $7 \quad 9$ | 49 |
| 1919 | 910 | 70 | 76 | 69 | 78 | 92 | 97 | 91 | 86 |

* Changes recorded in this column are common to all States, as the particulars relating to the number of workpeople affected and the net amount of increase per week in each State were not ascertainable.
$\dagger$ Including four changes which affected 157 workpeople in the Federal Capital Territory.
In point of number of changes in each State, New South Wales was first, Victoria second, and Queensland third, in each of the years 1913 to 1916. During the year 1917 the number of changes in Queensland exceeded the number recorded in Victoria, while during the year 1918 the number of changes in Queensland was greater than the number recorded as having taken place in New South Wales. It will be seen from the table that, with the exception of Queensland, the number of changes in rates of wage recorded during the year 1919 is higher in each State than during any previous year. The relative position of the States in regard to the numbers of changes effected, and also in regard to the numbers of workers affected in each year is, of course, largely due to the magnitude of the different industries and callings in which changes took place.

The number of workpeople who were affected by changes in rates of wage during the year 1919 was 603,891 , and the total net amount of increase per week was $£ 256,445$, representing 8 s . 6 d . per head per week. These figures are greater than in any other year for which records are available, and indicate a widespread attempt to restore wages to their previous relation to the cost of living, i.e., to regain the accustomed effective wage.

The foregoing shews the net results of all changes made in the rates of wage, and includes a few instances in which the weekly wage was reduced. It was in the year 1917 that the greatest number of reductions was recorded, when there were eleven such cases-(1.73 per cent.)-in a total of 637 changes. In 1919 the number of reductions recorded was six, the most important being the cases of the metalliferous miners at Moonta and Kadina, in South Australia, and at Mount Morgan in Queensland, who had entered into an agreement that wages should be related to the price of copper. In other cases the reduced weekly wage was due to a reduction in the number of hours in the working week without corresponding (if any) increase in the hourly rate of pay. Yet other cases were the result of appeals against recent awards, and others again were due to the cessation of special conditions for which higher rates had been temporarily paid. The workpeople who suffered reductions in their weekly wage in the six cases alluded to, numbered 4,293 , their aggregate weekly wage being reduced by $£ 886$ or about 4 s . 2 d . each. Therefore, of the 1,284 changes made in 1919, 1,278 , or 99.53 per cent. gave increased rates of pay, amounting to 8 s . 7 d. per head per week to 599,598 persons, representing 99.29 per cent. of the 603,891 persons affected by all changes during the year.

## 3. Number and Magnitude of Changes in Rates of Wage in the Commonwealth

 Classified according to Industrial Groups, 1913 to 1919.-Total Workpeople (Male and Female) affected by Changes. In the following table particulars are given of the number of changes, the number of persons (males and females) affected, and the total amount of increase per week, classified according to Industrial Groups throughout the Commonwealth during the years 1913 and 1916 to 1919 :-
## changes in rates of wage in the commonwealth according to INDUSTRIAL GROUPS, 1913 AND 1916 TO 1919.



[^8] Arbitration Act or an Order of the War Precautions Coal Board is counted as one change only, although such Award, Agreement or Order may be operative in more than one State.
4. Changes in Rates of Wage in Male and Female Occupations-Number and Effect of Changes in each State, 1913-1919.-Included in the changes in rates of wage recorded in the tables on page 1078 are those which in the whole or part thereof affected female occupations. Particulars in respect to these changes in so far as they relate to the numbers of male and female workers affected, etc., are set out hereunder :-

## changes in rates of wage.-MALE AND FEMALE OCCUPATIONS.-EFFECT OF CHANGES IN EACH STATE AND TERRITORY, 1913 TO 1919.



Number of Male Employees Affected.

| 1913 | 83,470 | 44,692 | 16,095 | 3,616 | 3,036 | 1,525 | $\cdots$ | 152,434 |  |
| :--- | :---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1914 | 48,773 | 25,644 | 19,628 | 5,624 | 7,616 | 4,232 | 2 | 390 | 111,907 |
| 1915 | 97,672 | 36,022 | 21,831 | 9,807 | 2,588 | 2,787 | 185 | 10,000 | 180,892 |
| 1916 | $225,806 \dagger$ | 99,667 | 68,125 | 39,586 | 5,669 | 6,885 | 249 | 3,546 | 449,533 |
| 1917 | 82,601 | 48,136 | 63,066 | 16,844 | 12,788 | 4,759 | 1,143 | 11,000 | 240,337 |
| 1918 | 128,728 | 91,857 | 59,909 | 12,889 | 8,452 | 3,487 | 624 | 616 | 306,562 |
| 1919 | 253,077 | 106,389 | 99,167 | 32,162 | 24,185 | 13,906 | 1,287 | 2,025 | 532,198 |

Net Amount of Increase per Week to Male Employees.

|  | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1913 | 20,682 | 9,317 | 3,647 | 1,127 | 428 | 512 |  |  | 35,713 |
| 1914 | 12,158 | 6,146 | 5,055 | 1,941 | 2,157 | 797 |  | 143 | 28,397 |
| 1915 | 26,975 | 7,572 | 6,250 | 3,431 | 545 | 730 | 87 | 2,938 | 48,528 |
| 1916 | 53,395 | 26,877 | 39,874 | 9,774 | 1,414 | 1,937 | 82 | 1,593 | 134,946 |
| 1917 | 25,773 | 11,080 | 17,106 | 5,244 | 3,329 | 1,878 | 635 | 4,800 | 69,845 |
| 1918 | 29,410 | 22,574 | 16,186 | 3,311 | 1,889 | 1,284 | 273 | 239 | 75,166 |
| 1919 | 132,237 | 38,115 | 38,200 | 10,690 | 9,560 | 6,560 | 618 | 920 | 236,900 |

Average Increase per Head per Week to Male Employees.

| 1913 | $s . d$. 4.11 | $\begin{array}{cc}s . & d . \\ 4 & 2\end{array}$ | $\begin{array}{cc}s . & \text { d. } \\ 4 & 6\end{array}$ | $\begin{array}{lr}\text { s. } \\ 6 & \text { d. } \\ 6 & 3\end{array}$ | $\begin{array}{ll}\text { s. } \\ 2 & \text { d }\end{array}$ | $\begin{array}{lr}s . & d . \\ 6 & 9\end{array}$ | s. $d$. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1914 | 50 | 410 |  | 611 | 58 |  |  |  |  |
|  | 5 |  |  |  |  | 39 |  | 74 |  |
| 1915 | 56 | 42 | 59 | 70 | 43 | 53 | 95 | 511 | 54 |
| 1916 | 49 | 55 | 118 | 411 | 50 | 58 | 67 | 980 | 60 |
| 1917 | 63 | 57 \% | 55 | 63 | 52 | 711 | 111 | 89 | 510 |
| 1918 | 47 | 411 |  | $5 \quad 2$ | 46 | 74 | 89 | 79 | 411 |
| 1919 | 105 | 72 | 78 | 68 | 711 | 95 | 97 | 9 | 811 |

Nomber of Female Employees Affected.

| 1913 | 6,148 | 4,562 | 550 | 958 | $\because$ | 1,480 | $\cdots$ | $\cdots$ | 13,698 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | :--- | :--- | :--- |
| 1914 | 7,696 | 4,232 | 570 | $\cdots$ | 783 | 30 | $\cdots$ | $\cdots$ | 13,311 |
| 1915 | 11,588 | 3,065 | 1,033 | 399 | 73 | 360 | $\cdots$ | $\cdots$ | 16,518 |
| 1916 | 16,915 | 20,211 | 3,954 | 1,339 | 179 | 347 | 9 | $\cdots$ | 42,954 |
| 1917 | 18,557 | 20,136 | 9,777 | 3,365 | 209 | 529 | $\cdots$ | $\cdots$ | 52,573 |
| 1918 | 17,671 | 18,170 | 14,265 | 3,350 | 1,419 | 144 | $\cdots$ | $\cdots$ | 55,019 |
| 1919 | 26,954 | 19,304 | 17,460 | 3,215 | 2,488 | 2,202 | $\cdots$ | 70 | 71,693 |

Net Amount of Increase per Weef to Female Employees.

|  | f | £ | £ | £ | $\underline{1}$ | £ | £ | $\underline{1}$ | $\underline{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1913 | 1,107 | 563 | 55 | 152 |  | 123 | . |  | 2,000 |
| 1914 | 1,400 | 542 | 73 |  | 266 | 7 | $\ldots$ |  | 2,288 |
| 1915 | 2,550 | 506 | 148 | 108 | 17 | 48 |  |  | 3,377 |
| 1916 | 3,480 | 3,689 | 577 | 156 | 26 | 43 | 6 |  | 7,977 |
| 1917 | 3,123 | 4,049 | 2,977 | 829 | 78 | 100 | . . |  | 11,182 |
| 1918 | -2,784 | 2,940 | 3,513 | 574 | 244 | 39 | $\cdots$ |  | 10,094 |
| 1919 | 5,405 | 5,815 | 5,518 | 1,299 | 689 | 790 | . | 29 | 19,545 |

> Note.-For continuation of Table see next page.

[^9]
## CHANGES IN RATES OF WAGE.-MALE AND FEMALE OCCUPATIONS. EFFECT OF CHANGES IN EACH STATE AND TERRITORY, 1913 TO 1919 -continued.

| Year. | N.S.W. | Victoria. | Q'land. | S. Aust. | W. Aust. | Tasmania. | N. Terr. $\mid$ States.* $\mid$ C'wealth. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

Average Increase per Head per Week to Female Employees.


* See footnote on previous page.

5. Methods by which Changes were Effected.-(i) Changes in Rates of Wage and Methods by which Effected-Commonwealth, 1918 and 1919. In the following table particulars are given for the Commonwealth of the number of changes in rates of wage, the number of workpeople affected, and the total net amount of increase to the weekly wage distribution brought about either without, or after, stoppage of work, during the years 1918 and 1919 respectively, as a result of the application of one or other of the methods set out in the tables:-

## CHANGES IN RATES OF WAGE.-METHODS BY WHICH EFFECTED, 1918 AND 1919.

| Methods by which Changes were Effected. | Without Stoppage of Work. |  |  | After Stoppage of Work. |  |  | All Changes. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. of Changes. |  |  |  |  |  |  |  |  |
| 1918. |  |  |  |  |  |  |  |  |  |
| By voluntary action of employers | $14^{*}$ | 12,916 | $\stackrel{\text { 2, }}{2,396}$ |  |  | ${ }^{\text {E }}$ | 14 | 12,916 | $\stackrel{\text { ¢ }}{\text { 2,396 }}$ |
| By direct negotiations .. | 103 | 41,085 | 8,579 | 29 | 2,343 | 894 | 132 | 43,428 | 9,473 |
| By negotiations, intervention or assistance of third party | 1 | 544 | 287 | 2 | 47 | 47 | 3 | - 591 | 334 |
| By award of Court under Commonwealth Act* | 39 | 20,502 | 4,481 | . | . . | . . | 39 | 20,502 | 4,481 |
| By agreement registered under Commonwealth Act* | 142 | 6,764 | 1,683 | . |  | . | 142 | 6,764 | 1,683 |
| By award or determination under State Acts | 353 | 266,977 | 63,502 | 1 | 3,800 | 1,140 | 354 | 270,777 | 64,642 |
| By agreement registered under State Acts | 90 | 6,337 | 2,114 | 5 | 266 | 137 | 95 | 6,603 | 2,251 |
| Total ${ }^{*}$ | 742 | 355,125 | 83,042 | 37 | 6,456 | 2,218 | 779 | 361,581 | 85,260 |
| 1919. |  |  |  |  |  |  |  |  |  |
| By voluntary action of employers | 36 | 10,285 | 4,373 |  |  |  | 36 | 10,285 | 4,373 |
| By direct negotiations $\quad$. | 202 | 77,096 | 25,796 | 36 | 7,439 | 3,141 | 238 | 84,535 | 28,937 |
| By negotiations, intervention or assistance of third party | 18 | 35,716 | 20,553 | 11 | 9,333 | 3,680 | 29 | 45,049 | 24,233 |
| By award of Court under Commonwealth Act* | 38 | 67,166 | 29,108 | 4 | 575 | 476 | 42 | 67,741 | 20,584 |
| By agreement registered under Commonwealth Act* | 140 | 27,084 | 9,969 | 1 | 160 | 48 | 141 | 27,244 | 10,017 |
| By award or determination under State Acts | 580 | 336,805 | 148,087 | 2 | 820 | 545 | 582 | 337,625 | 148,632 |
| By agreement registered under State Acts | 98 | 31,232 | 10,574 | 2 | 180 | 95 | 100 | 31,412 | 10,660 |
| Total* .. .. | 1,112 | 585,384 | 248,460 | 56 | 18,507 | 7,985 | 1,168 | 603,891 | 256,445 |

* In this section of the table an Award or Agreement under the Commonwealth Conciliation and Arbitration Act, the Commonwealth (Public Service) Arbitration Act or an Order of the War Precautions Coal Board is counted as one change only, although such Award, Agreement, or Order may be operative in more than one State.

The total number of ohanges recorded during the year 1919 was 1,168 , of which 582 or almost 50 per cent. of the total number were brought about by award or determination under State Industrial Acts. The number of workpeople who were affected by these changes was 337,625 , and the total amount of increase per week in wages was $£ 148,632$. Of these 582 changes, 271 occurred in New South Wales, 61 in Victoria, 155 in Queensland, 50 in South Australia, 24 in Western Australia, and 21 in Tasmania. The number of changes in rates of wage which were recorded as having been made by awards or variations of awards under the provisions of the Commonwealth Conciliation and Arbitration Act was 42 , as compared with 39 during the previous year. Direct negotiations between representatives of employers and employees brought about 238 changes in rates of wage during the year. A large number of industrial agreements were filed under the provisions of the Commonwealth and State Acts during the twelve months under review. Fiftysix changes in rates of wage were arranged after stoppages of work. The number of workpeople affected by these changes was 18,507.
(ii) Changes in Rates of Wage and Methods by which Effected-Commonweallh, 1913-1919. Comparative particulars are contained in the following table of the total number and effect of all changes in rates of wage brought about throughout the Commonwealth during the years indicated, as a result of the application of one or other of the specified methods:-

## CHANGES IN RATES OF WAGE, CLASSIFIED ACCORDING TO METHODS BY WHICH EFFECTED-COMMONWEALTH, 1913 AND 1916 TO 1919.

| Particulars. |  |  |  |  |  |  |  | + |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number of 1913. <br> Number of Workpeople affected <br> Amount of Increase per week $£$ | 12,011 1,543 | 30 4,336 1,120 | 4 101 20 | 3 4,487 1,679 | 24 3,387 831 | 213 136,702 31,328 | 36 $\mathbf{5 , 1 0 8}$ $\mathbf{1 , 1 9 2}$ | 312 166,132 37,713 |
| 1916. <br> Number of Changes <br> Number of Workpeople affected A mount of Increase per week $£$ | 51 $\mathbf{5 5 , 5 6 0}$ $\mathbf{1 0 , 8 3 1}$ | 175 46,833 12,114 | a <br> $\mathbf{9}$ <br> $\mathbf{1 , 5 1 8}$ | 17 40,978 14,985 | 30 25,081 6,800 | 467 305,340 94,005 | r 13,92 2,690 | 821 492,487 142,923 |
| $1917 .$ <br> Number of Changes <br> Number of Workpeople affected <br> Amount of Increase per week $£$ | 24 9,531 3,097 | 75 15,827 5,429 | 19 19,500 10,996 | 35 20,759 7,654 | 28 16,443 5,579 | 310 198,723 44,477 | r 12,127 3,775 | 292,910 81,007 |
| $1918 .$ <br> Number of Changes <br> Number of Workpeople affected Amount of Increase per week $£$ | 14 12,016 2,396 | 132 43,428 9,473 | 3 591 334 | 39 20,502 4,481 | 142 6,764 1,683 | 354 270,777 64,642 | \% $\mathbf{6 5}$ $\mathbf{6 , 6 0 3}$ $\mathbf{2 , 2 5 1}$ | 779 $\mathbf{3 6 1 , 5 8 1}$ 85,260 |
| 1919. <br> Number of Changes <br> Number of Workpeople affected <br> Amount of Increase per week $£$ | 36 10,285 4,373 | 238 84,535 28,937 | 29 45,049 24,233 | \% <br> 67 <br> 29,741 <br> 2984 | 141 27,244 10,017 | 582 337,625 148,632 | 100 31,412 10,669 | 1,168 $\mathbf{6 0 3 , 8 9 1}$ $\mathbf{2 5 6 , 4 4 5}$ |

- See footnote to table on page 1080.

It will be seen from the foregoing table that the greatest number of changes throughout the period under review was effected through the instrumentalities of the State Acts, though in relation to the total business the activities of the State organizations shew a decline from 80 per cent. of all changes in 1913 to 58 per cent. in 1919, while the changes made under the Commonwealth Acts have increased from 8.7 per cent. to 15.6 per cent. It is interesting to observe the very marked extent to which "direct negotiation" between parties has been resorted to in the later years. In 1913, only 30 changes, or less than 10 per cent. of the total, affecting only 2.6 per cent. of all persons concerned in the changes of that year, were brought about by direct negotiations, whereas in 1919, 238 chianges ( 20 per cent.), affecting 84,535 persons, or 14 per cent. of the whole, resulted from this agency. It must be mentioned that, so far as possible, the effect of awards or agreements is recorded in the figures for the year in which such awards or agreements are made and filed. In certain cases, however, the awards or agreements are made retrospective as to the date on which the increased rate of wage has to be paid, while in others the particulars as to the number of workpeople affected and the effect of the change are difficult to ascertain.

## § 6. Industrial Disputes.

1. General.-Information with regard to the collection of particulars and methods of tabulation of industrial disputes involving stoppage of work has appeared in previous issues of the Year Book, and is also given in the Annual Reports of the Labour and Industrial Branch of this Bureau.

In the following tabulations particulars are included only with respect to the industrial disputes which commenced during any calendar year.* This course requires the elimination of such data as relate to disputes which commenced during an earlier period, but which remained unsettled during some portion of the succeeding year. On the other hand it necessitates the inclusion of the number of working days and wages lost during the following year in connexion with disputes commenced during the calendar year to which the statistics relate.
2. Comparative Summary of Disputes (involving Stoppage of Work), 1913 to 1919.The systematic collection of information as to industrial disputes (causing a stoppage of work) throughout the Commonwealth was first undertaken as from the lst January, 1913, and particulars concerning disputes occurring during the year 1913 were published in Labour Report No. 5. The following table gives particulars of the number of industrial disputes which began in various years from 1913 to 1919 , together with the number of workpeople involved, the number of working days lost, and the total estimated loss in wages in each State and Territory comprising the Commonwealth :-
INDUSTRIAL DISPUTES IN EACH STATE AND TERRITORY.-COMPARATIVE
PARTICULARS FOR 1913 AND 1916 TO 1919.

| State or Territory. | Year. | No, of Disputes. | Establishments Involved in Disputes. | No. of Workpeople Involved. |  |  | No. of Working Days Lost. | Total Estimated Loss in Wages. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Directly. | In. directly. | Total. |  |  |
| Now South Wales |  |  |  |  |  |  |  | ¢ |
|  | 1913 | 134 | 466 | 25,647 | 14,364 | 40,011 | 468,957 | 216,368 |
|  | 1916 | 336 | 717 | 91,762 | 31,638 | 123,400 | 1,145,222 | 674,064 |
|  | 1917 | 296 | 918 | 118,515 | 15,508 | 134,023 | 3,308,869 | 1,929,405 |
|  | 1918 | 138 | 182 | 24,417 | 8,624 | 33,041 | 181,639 | 112,804 |
|  | 1919 | 267 | 078 | 64,956 | 35,040 | 99,996 | 3,669,186 | 2,397, 25.1 |
| Victoria | 1913 | 29 | 63 | 4,151 | 2,026 | 6,177 | 85,212 | 35,744 |
|  | 1916 | 55 | 449 | 13,576 | 2,092 | 15,668 | 228,269 | 114,683 |
|  | 1917 | 52 | 636 | 15,976 | 2,114 | 18,090 | 760,410 | 378,946 |
|  | 1918 | 33 | 190 | 4,235 | 1,513 | 5,748 | 165,020 | 99,346 |
|  | 1919 | 62 | 372 | 15,169 | 7,437 | 22,606 | 733,333 | 392,796 |
| Queensland | 1913 | 17 | 20 | 1,781 | 225 | 2,006 | 55,288 | 28,374 |
|  | 1916 | 64 | 252 | 17,367 | 2,951 | 20,318 | 170,690 | 96,976 |
|  | 1917 | 39 | 202 | 12,074 | 971 | 13,045 | 317,699 | 178,125 |
|  | 1918 | 84 | 696 | 8,803 | 1,875 | 10,678 | 183,883 | 131,142 |
|  | 1919 | 69 | 295 | 9,078 | 6,336 | 15,414 | 586,661 | 327,5:37 |
| South Australia | 1913 | 9 | 13 | 272 | 16 | 288 | 2,412 | 1,029 |
|  | 1916 | 21 | 45 | 1,037 | 606 | 1,643 | 10,583 | 6,004 |
|  | 1917 | 24 | 44 | 3,958 | 146 | 4,104 | 57,446 | 30,306 |
|  | 1918 | 17 | 25 | 1,576 | 429 | 2,005 | 18,276 | 10,515 |
|  | 1919 | 32 | 75 | 4,437 | 3,409 | 7,846 | 238,378 | 127,30; |
|  | 1913 | 9 | 324 | 967 |  | 967 | 6,772 | 3,515 |
| Western Australia | 1916 | 24 | 35 | 4,318 | 4,782 | 9,100 | 102,357 | 64,325 |
|  | 1917 | 23 | 128 | 2,401 | , 547 | 2,918 | 102,078 | 53,004 |
|  | 1918 | 22 | 56 | 3,368 | 1,435 | 4,803 | 31,145 | 17,792 |
|  | 1919 | 20 | 157 | 5,516 | 4,460 | 0,976 | 350,987 | 213,867 |
| Tismania | 1913 | 8 | 30 | 444 | 20 | 464 | 987 | 434 |
|  | 1916 | 6 | 36 | ${ }^{366}$ | 68 | 434 | 21,389 | 11,207 |
|  | 1917 | 8 | 11 | 1,062 | 623 | 1,685 | 52,541 | 24,502 |
|  | 1918 | 1 | 1 | + 42 |  | 42 | 462 | 250 |
|  | 1919 | 5 | 127 | 1,098 | 588 | 1,686 | 63,271 | 32,738 |
| Fed. Cap. Territory. . | 1913 | 1 | 1 | 100 | 100 | 200 | 1,400 | 600 |
|  | 1916 |  |  | . |  |  | $\cdots$ |  |
|  | 1917 |  | - |  | $\cdots$ |  |  |  |
|  | 1918 1919 | $\cdots$ |  | $\cdots$ | . |  | $\cdots$ |  |
| Northern Territory | 1919 | 1 | 4 | 131 | 39 | 170 | 2,500 | 1,675 |
|  | 1916 | 2 |  | 120 |  | 120 | 420 | 345 |
|  | 1917 | 2 | 2 | 75 |  | 75 | 615 | 520 |
|  | 1918 | 3 | 4 | 112 | 10 | 122 | 428 | 395 |
|  | 1919 | 5 | 9 | 46 | 21 | 67 | 1,910 | 1,436 |
| Commonwealth | 1913 | 208 | 921 | 33,493 | 16,790 | 50,283 | 623,528 | 287,739 |
|  | 1914 | 337 | 1,203 | 43,073 | 27,976 | 71,049 | 1,090,395 | 551,228 |
|  | 1915 | 358 | , 942 | 57,005 | 24,287 | 81,292 | 1,583,225 | 299,633 |
|  | 1916 | 508 | 1,536 | 128,546 | 42,137 | 170,683 | 1,678,930 | 967,604 |
|  | 1917 | 444 | 1,941 | 154,061 | 19,909 | 173,970 | 4,599,658 | 2,594,808 |
|  | 1918 | 298 | 1,154 | 42,553 | 13,886 | 56,439 | -580,853 | 372,334 |
|  | 1910 | 460 | 1,713 | 100,300 | 57,291 | 157,591 | 5,652,726 | 3,492,936 |

[^10]It may be seen from the foregoing table that industrial disputes throughout the Commonwealth were most frequent during the year 1916. The number of workpeople involved in disputes during 1916 and 1917 increased to an enormous extent, while the losses in working days and wages were considerably in excess of such losses during any previous yearly period. The figures for 1917 are swollen by the effects of the dispute at the Government Railway Workshops in New South Wales in connexion with the introduction of the "card system." The dislocation of industry due to this dispute is the most extensive which has been recorded by the Bureau since the systematic collection of particulars was undertaken at the beginning of the year 1913. After careful consideration of the data it was ascertained that 79 disputes throughout the various States were directly associated with the action of the employees at the Government Railway Workshops. The originating dispute, which commenced on the 2nd August, 1917, when the employees at the workshops ceased work as a protest against the introduction of a time-card system, rapidly extended to other industries throughout the Commonwealth. Railway employees in other branches of the service, coal and metalliferous miners, seamen, waterside workers, and others left work, mostly in sympathy with the railway men, while other workers, including carters, storemen, and artificial manure makers, refused to handle "black" goods and coal. Of the 79 disputes, which were the outcome of the original stoppage, 52 occurred in New South Wales; 18 in Victoria; 3 in South Australia; and 2 in each of the remaining States. The total number of workpeople involved in these dislocations was 97,507 , the loss in working days was $3,982,250$, with a consequent estimated loss in wages of $£ 2,233,000$. In addition a large number of employees in various industries, though not directly connected with the dispute, were thrown out of work by the restrictions placed upon the use of coal, gas and electricity.

The figures for 1914 and 1916 were inflated by disputes in the coal mining industry. In the earlier ycar, there was a protracted dispute in New South Wales through the refusal of the miners to work the afternoon shift. The estimated loss incurred was 523,000 working days, representing $£ 259,000$ in wages. In 1916 the coal mining employees in New South Wales, Victoria, Queensland, and Tasmania ceased work over the question of the "eight hours bank to bank." The loss on this occasion was 409,000 working davs, equivalent to $£ 240,850$ in wages.

In regard to extensive dislocations of industry which occurred prior to the institution of systematic inquiries by the Bureau, efforts have been made to obtain statistical data relating to the shearers' disputes in 1890, 1891 and 1894, and also concerning the number of workpeople involved and the losses caused by the maritime dispute in the early part of 1891, but precise information is not obtainable.

The proportion of disputes in each State expressed as a percentage on the total for the Commonwealth is as follows :-

PROPORTION PER CENT. OF DISPUTES IN THE LARGER STATES, 1913 TO 1919.

| state. | 191\%. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New South Wales | 65 | 70 | 76 | 66 | 69 | 46 | 58 |
| Victoria.. | 14. | 13 | 11 | 11 | 12 | 11 | 13 |
| Queensland | 8 | 5 | 5 | 13 | 9 | 28 | 15 |
| Other States and Territories | 13 | 12 | 8 | 10 | 10 | 15 | 14 |
| Commonwealth | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Although the number of disputes in 1919 was less than that in 1916, and the number of workpeople involved was less than in either of the years 1916 and 1917, yet, measured by the loss of time and wages, the disruption to industry which occurred during 1919 was the most serious which the Commonwealth has experienced since records of such
matters were instituted in 1913. Prior to 1919 the most serious loss in wages was incurred in 1917, when it amounted to $£ 2,594,308$, a sum outstanding in its magnitude as compared with other years. In 1919, however, this amount was exceeded by $£ 898,128$, the estimated loss in wages being $£ 3,492,936$, representing $5,652,726$ working days. The more important of the disputes which contributed io this loss were the disputes of the miners at Broken Hill (who ceased work during the second quarter of 1919 and had not resumed at the end of June, 1920) and of the seamen and marine engineers. Particulars of these disputes are given in section 12 of Labour Report No. 10.

It is, of course, obvious that the mere number of disputes cannot by itself be accepted as a proper basis of comparison, nor does the number of workpeople afford a satisfactory basis. A better idea as to the significance and effect of industrial disputes may be obtained from the number of working days lost and the estimated loss in wages.

The position which New South Wales occupies in comparison with the other States is practically wholly due to the prevalence of disputes in connection with coal mining. Apart from these stoppages the number of disputes in all other industries, whilst still in excess of that for each of the other States, does not compare unfavourably when the number of workpeople in each State is taken into consideration.
3. Number and Magnitude of Industrial Disputes in the Commonwealth, Classified according to Industrial Groups.-Comparative Particulars for 1918 and 1919.-The following table gives particulars of disputes in the Commonwealth during the years 1918 and 1919, classified according to industrial groups. The system of classification selected is similar to that adopted in connexion with labour organisations, unemployment, rates of wage, etc. (see Report No. 10, Labour and Industrial Branch, page 9).

INDUSTRIAL DISPUTES IN THE COMMONWEALTH, CLASSIFIED ACCORDING TO INDUSTRIAL GROUPS, 1918 AND 1919.

| Industrial Group. | No. of Disputes. |  | No. of Workpeople involved in Disputes. |  | No. of Working Days Lost. |  | ```Total Estimated Loss in Wages.``` |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1918. | 1919. | 1918. | 1919. | 1918. | 1919. | 1918. | 1919. |
| I. Wood, Furniture, Timber, etc. | 4 | 7 | 272 | 134 | 2,232 | ,036 | $\mathbf{1}_{\mathbf{8}, 215}$ | ${ }_{6} 631$ |
| II. Engineering, Metal Works, etc. | 10 | 15 | 3,477 | 1,846 | 168,167 | 18,147 | 97,225 | 10,726 |
| III. Food, Drink, ete. | 36 | 39 | 5,276 | 12,0<0 | 54,014 | 198,920 | 40,759 | 124,422 |
| IV. Clothing, Hats, Boots, ete. | 7 | 2 | , 355 | 399 | 3,047 | 6,365 | 1,566 | 2,705 |
| VI. Other Manufacturing | 20 | 31 | 1,092 | 5,091 | 10,833 | 57,095 | 6,436 | 29,477 |
| VII. Building .. .. | 11 | 12 | 685 | 2,810 | 3,602 | 127,729 | 2,235 | 76,118 |
| VIII. Mines, Quarries, etc. | 135 | 231 | 35,149 | 86,607 | 219,293 | 2,718,074 | 149,406 | 1,905,075 |
| IX. Rail and Tramway Services | 16 | 21 | 2,345 | 2,989 | 27,310 | 57,419 | 15,615 | 33,573 |
| X. Other Land Transport | 1 | 5 | 60 | 683 | 180 | 17,009 | 88 | 8,763 |
| XI. Shipping, Wharf Labour | 14 | 41 | 4,102 | 32,714 | 26,504 | 2,271,030 | 13,395 | 1,182,933 |
| XII. Pastoral, Agricultural, etc. | 24 | 24 | 1,985 | 6,257 | 49,539 | 49,770 | 33,870 | 34,497 |
| XIII. Domestic, Hotel, etc. |  | 5 | 62 | 287 | 486 | 1,018 | 142 | 396 |
| XIV. Miscellaneous | 17 | 27 | 1,579 | 5,694 | 15,646 | 129,114 | 10,382 | 83,620 |
| Commonwealth, All Groups | 298 | 460 | 56,439 | 157,591 | 580,853 | 5,652,726 | 372,334 | 3,402,936 |

Attention has frequently been drawn to the preponderating influence exercised by disputes in the coal-mining industry in New South Wales on the total number of industrial disputes. In making any comparison as to the number of disputes in this industrial class in each State, it should be observed that while the number of workers engaged in the mining industry is very much larger in New South Wales than in any of the other States, nevertheless the total number of disputes recorded in that State is somewhat greater than in any other State. Of the 2,613 disputes recorded in the Commonwealth for the seven years 1913-19, 1,299 or 49.7 per cent. were connected with the industries included in Group VIII., Mines, Quarries, \&c.
4. Duration of Industrial Disputes in the Commonwealth, 1919.-In the following table particulars are given with respect to the number of disputes, workpeople directly and indirectly involved, working days lost, and estimated amount of loss in
wages respectively, consequent on the cessations of work which were recorded for the Commonwealth during the year 1919, classified under the adopted limits of duration :-
dURATION OF INDUSTRIAL DISPUTES IN THE COMMONWEALTH, 1919.

| Limits of Duration. | No. of Dis. putes. | No. of Workpeople Involved. |  |  | $\begin{gathered} \text { Number } \\ \text { of } \\ \text { Working } \\ \text { Days Lost. } \end{gathered}$ | Total Estimated Loss in Wages. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Directly. | Indirectly. | Total. |  |  |
|  |  |  |  |  |  | £ |
| 1 day and less | 154 | 29,218 | 11,825 | 41,043 | 40,977 | 35,639 |
| 2 days and more than 1 day | 59 | 10,973 | 2,767 | 13,740 | 26,561 | 20,210 |
| 3 days and more than 2 days | 36 | 6,724 | 3,149 | 9,873 | 29,371 | 20,944 |
| Over 3 days and less than 1 week ( 6 days) .. | 52 | 9,165 | 1,815 | 10,980 | 48,935 | 36,147 |
| 1 week and less than 2 weeks | 68 | 15,670 | 2,171 | 17,841 | 132,501 | 86,101 |
| 2 weeks and less than 4 weeks | 32 | 4,852 | 7,312 | 12,164 | 166,998 | 102,428 |
| 4 weeks and less than 8 weeks | 26 | 4,707 | 3,281 | 7,988 | 247,106 | 159,921 |
| 8 weeks and over | 33 | 18,991 | 24,971 | 43,962 | 4,960,277 | 3,031,546 |
| Total | 460 | 100,300 | 57,291 | 157,591 | 5,652,726 | 3,492,936 |

Note.-Similar flgures for the years 1913 to 1918 will be found in previous issues of the Year Book and also in the Labour Reports.
5. Industrial Disputes, Classified as to Causes, Commonwealth, 1913-1919.-The following table shews the number of disputes, number of workpeople involved, and the total number of working days lost in disputes which commenced during the years 1913 to 1919, classified according to principal cause :-
CAUSES OF INDUSTRIAL DISPUTES IN THE COMMONWEALTH, 1913 TO 1919.

| Causes of Disputes. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

Number of Disputes.

| 1. Wages- |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (a) For increase | 42 | 50 | 73 | 125 | 53 | 54 | 99 |
| (b) Against decrease . . | 4 | 3 | 10 | 7 | 1 | 4 | 2 |
| (c) Other wage questions | 31 | 67 | 46 | 96 | 69 | 69 | 100 |
| 2. Hours of Labour- <br> (a) For reduction | 3 | 1 | 3 | 16 | 2 | 1 | 4 |
| (b) Other disputes rehours | 7 | 13 | 6 | 5 | 8 | 11 | 5 |
| 3. Trades Unionism- <br> (a) Against employment of non-unionists .. | 8 | 13 | 19 | 14 | 26 | 7 | 19 |
| (b) Other union questions | 5 | 11 | 16 | 8 | 32 | 19 | 29 |
| 4. Employment of particular Classes or Persons | 44 | 83 | 76 | 83 | 90 | 92 | 118 |
| 5. Working Conditions | 51 | 72 | 70 | 90 | 81 | 34 | 54 |
| 6. Sympathetic | 5 | 3 | 6 | 20 | 57 | 1 | 6 |
| 7. Other Causes | 8 | 21 | 27 | 44 | 25 | 6 | 24 |
| Total . . | 208 | 337 | 358 | 508 | 444 | 298 | 460 |

Number of Workpeople Involyed.

| 1. Wages |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (a) For increase | 8,633 | 7,362 | 18,783 | 30,183 | 7,135 | 7,095 | 58,532 |
| (b) Against decrease | 563 | 534 | 1,113 | 1,051 | 21 | 57 | 667 |
| (c) Other wage questions | 7,160 | 15,243 | 11,990 | 23,507 | 18,894 | 12,737 | 26,222 |
| 2. Hours of Labour- |  |  |  |  |  |  |  |
| (a) For reduction | 460 | 220 | 896 | 24,481 | 1,004 | $\stackrel{26}{26}$ | 578 |
| (b) Other disputes re hours | 1,819 | 3,237 | 2,643 | 579 | 2,576 | 4,214 | 961 |
| 3. Trades Lnionism- |  |  |  |  |  |  |  |
| (a) Against employment of non-unionists .. | 5,370 | 5,807 | 3,873 | 1,178 | 6,182 | 710 |  |
| (b) Other union questions | 1,418 | 1,593 | 3,739 | 1,167 | 17,200 | 6,673 | 9,001 |
| 4. Employment of particular |  |  |  |  |  |  | 17,509 |
| - Classes or Persons | 11,370 | 14,863 | 13,844 | 15,910 | 15,445 | 14,576 | 21,488 |
| 5. Working Conditions | 10,785 | 17,053 | 16,114 | 20,516 | 19,021 | 7,757 | 11,582 |
| 6. Sympathetic | 947 | 675 | 950 | 4,191 | 76,076 | 200 | 3,080 |
| 7. Other Causes | 1,758 | 4,462 | 7,347 | 47,910 | 10,296 | 2,394 | 7,971 |
| Total | 50,283 | 71,049 | 81,292 | 170,683 | 173,970 | 56,439 | 157.591 |

## CAUSES OF INDUSTRIAL DISPUTES IN THE COMMONWEALTH,

 1913 TO 1919-continued.| Causes of Disputes. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

Number of Working Days Lost.

| 1. Wages(a) For increase | 100,069 | 99,451 | 190,645 | 592,625 | 56,083 | 198,323 | 4,749,081 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (b) Against decrease | 10,438 | 32,965 | 12,555 | 6,192 | -42 | 108,316 | 40,013 |
| (c) Other wage questions | 78,183 | 169,847 | 133,606 | 143,248 | 225,080 | 97,561 | 96,118 |
| 2. Hours of Labour- |  |  |  |  |  |  |  |
| (a) For reduction .. | 2,774 | 9,240 | 836 | 583,052 | 78,016 | 312 | 10,372 |
| (b) Otherdisputes rehours | 15,111 | 16,855 | 23,374 | 1,598 | 62,560 | 20,551 | 15,760 |
| 3. Trades Unionlsm- <br> (a) Against employment of non-unionists .. | 91,002 | 92,720 | 31,145 | 48,881 | 87,600 | 21,894 | 279,804 |
| (b) Other union questions | 32,388 | 6,968 | 7,434 | 10,276 | 572,949 | 24,341 | 329,205 |
| 4. Employment of particular Classes or Persons | 191,723 | 64,367 | 77,862 | 70,452 | 47,297 ${ }^{\prime}$ | 113,466 | 87,225 |
| 5. Working Conditions | 73,562 | 584,289 | 82,322 | 81,511 | 211,971 | 93,468 | 32,029 |
| 6. Sympathetic | 24,066 | 2,125 | 6,004 | 75,447 | 3,239,798 | 7,200 | 21,050 |
| 7. Other Causes | 5,212 | 11,568 | 17,442 | 65,648 | 18,262 | 3,421 | 23,069 |
| Total | 623,528 | 1,090,395 | 583,225 | 1,678,930 | 4,509,658 | 580,853 | 5,652,726 |

It will be observed from the above table that the main causes of industrial disputes are "Wage" questions, " Working Conditions," and " Employment of Particular Classes or Persons." In each of the seven years, 1913-1919, the number of dislocations concerning wages exceeded those caused by any other question, having varied between a minimum proportion of 28 per cent. in 1917 and a maximum of 45 per cent. in 1916. The proportion attributed to this cause in 1919 was 44 per cent. The majority of the disputes classified under the heading, "Employment of Particular Classes or Persons," are stoppages of work for the purpose of protesting against the dismissal of certain employees, who, in the opinion of their fellow-workers, have been unfairly treated or victimised. This class of dispute occurs very frequently in the coal mining industry. The number of disputes over "Trade Union" questions and "Hours of Labour" has represented a fairly uniform proportion of the total number of disputes during the years under review. "Sympathetic" disputes were numerous during the years 1916 and 1917. The figures for the latter year were abnormal in comparison with the other periods. It may be mentioned, however, that the disputes which arose during that year in connection with the "time-card system" dispute were responsible for the increase in the number.
6. Results of Industrial Disputes, Commonwealth, 1913-19.-The following table shews the number of disputes, number of workpeople involved, and the number of working days lost in disputes throughout the Commonwealth during the seven years 1913-19, classified according to results :-

## INDUSTRIAL DISPUTES CLASSIFIED ACCORDING TO RESULTS, COMMONWEALTH, 1913 TO 1919.

| Year. | No. of Disputes. |  |  |  | Number of Workpeople Involved in Disputes. |  |  |  | Total Number of Working Days Lost by Disputes. |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  | 发 |  |  |  | 离 |
| 1913 | 67 | 64 | 66 | 11 | 10,914 | 12,211 | 24,826 | 2,332 | 59,823 | 104,654 | 433,014 | 26,037 |
| 1914 | 118 | 98 | 110 | 11 | 21,224 | 18,242 | 30,396 | 1,187 | 129,995 | 119,819 | 829,265 | 11,316 |
| 1915 | 190 | 78 | 68 | 22 | 44,140 | 15,327 | 14,860 | 6,965 | 245,625 | 155,659 | 151,544 | 30,397 |
| 1916 | 223 | 178 | 84 | 23 | 70,588 | 36,670 | 23,296 | 40,129 | 886,010 | 253,084 | 476,302 | 63,534 |
| 1917 | 147 | 188 | 100 | 9 | 24,331 | 119,589 | 22,310 | 7,740 | 103,267 | 4,201,981 | 285,103 | 9,307 |
| 1918 | 92 | 100 | 93 | 13 | 13,780 | 15,998 | 23,739 | 2.822 | 101,207 | 177,223 | 280,045 | 22,378 |
| 1919 | 154 | 157 | 139 | 10 | 54,810 | 43,140 | 47,995 | 11,646 | 2,398,252 | 406,361 | 635,671 | 2,212,442 |

It will be seen from the above table that, during the years 1913, 1914, 1915, and 1916 the disputes resulting in favour of workpeople exceeded those resulting in favour of employers. During 1917, 1918, and 1919, however, the position was reversed. A considerable number of disputes in each year resulted in a compromise, while certain disputes resulted in such a manner that they could not be definitely classed as in favour of either party. The exceptionally heavy loss of working days shewn under the heading "Indefinite" in the above table is due to the dispute affecting miners andothersat Broken Hill, which had not terminated when the tabulations were closed.
7. Methods of Settlement of Industrial Disputes, Commonwealth, 1913-19.-The following tables shew the number of disputes, number of workpeople involved, and number of working days lost in industrial disputes during the seven years 1913-19, classified for the Commonwealth according to the adopted schedule of methods of settlement :-

## METHODS OF SETTLEMENT OF INDUSTRIAL DISPUTES, COMMONWEALTH, 1913 TO 1919.

| Methods of Settlement. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

Number of Disputes.


Number of Workpeople Involved.


# METHODS OF SETTLEMENT OF INDUSTRIAL DISPUTES, COMMONWEALTH, 1913 TO 1919-continued. 

| Methods of Settlement. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

Number of Working Days Lost.

Negotiations-
Direct between employers and employees or their representatives
By intervention or assistance of distinctive third party-not under Commonwealth or State Industrial Act .. or .. Under State Industrial Act-
By intervention, assistance, or compulsory conference
By reference to Board or Court ..
Under Commonwealth Conciliation and
Arbitration Act-
By intervention, assistance, or compulsory conference
By Filling Places of Workpeople on Strike or Locked Out
By Closing-down Establishment Permanently
By other Methods

Total

In the above tables the methods of settlement of all disputes recorded during the past seven years are set out in comparative form. In all years it will be observed that direct negotiations between the employers and employees settled the majority of the disputes. The proportion of disputes so settled ranges between a minimum of 53 per cent. in 1917 and a maximum of 73 per cent. in 1914; in 1919 the proportion was 63 per cent. The numbers of dislocations which have been settled by compulsory conferences or the intervention and assistance of officials under State or Commonwealth Arbitration Acts have not varied greatly during the period under review. In connexion with the comparatively large numbers of disputes which are classified as having been settled " By other methods," it must be mentioned that a large number of stoppages of work occur each year, principally at the collieries, without any cause for such stoppages being brought officially under the notice of the employers or their representatives. Such stoppages usually last for one day, and work is resumed without any negotiations for a settlement of the trouble which caused the stoppage. The mining dispute at Broken Hill was unsettled when the tabulations relating to dislocations of work during the year 1919, were closed. In the above table, the figures relating to this particular dispute are included in the totals shewn against the method of settlement " by intervention or assistance of a distinctive third party-not under Commonwealth or State Industrial Act."

## § 7. Retail Prices, House Rents, and Cost of Living.

1. Introduction.-In Labour Report No. 1, issued in December, 1912, the results of certain investigations into the subjects of Prices, Price-Indexes and Cost of Living in past years were published, and some account was given of the methods employed for the collection of the data and of the technique adopted in the computation of the results. A detailed examination of the theory upon which the calculation of the index-numbers is based was given, but being necessarily too technical for the ordinary reader, was relegated to Appendixes. In Reports Nos. 2, 5, 6, 7, 8, 9, and 10, results of further investigations were included, and in Labour Bulletins Nos. 1 to 18, and in Quarterly Summaries of Statistics, Nos. 70 to 78 , information was incorporated regarding variations in retail and wholesale prices, house-rent, and purchasing-power of money up to the end of 1919.

It must here suffice to state that the method adopted for the computation of the index-numbers is what may very properly be called the "aggregate expenditure " method. The first process is, of course, to work out the average price of each commodity included, and numbers (called " mass-units") representing the relative extent to which each commodity was on the average used or consumed are then computed. The price in any year of each commodity multiplied by its corresponding " mass-unit" represents, therefore, the relative total expenditure on that commodity in that year on the basis of the adopted regimen. It follows, therefore, that by taking for any year the sum of the price of each commodity multiplied by its corresponding " mass-unit," a figure is obtained which represents the relative aggregate or total expenditure of the community in that year on all the commodities, etc., included. By computing these aggregate expenditures for a series of years and taking the expenditure in any selected year as "base," that is, making the expenditure in that year equal to 1,000 units, the relative expenditure in any other year, that is to say, the "index-numbers," are readily ascertained. Numerical examples of the technique and methods adopted for the computation of index-numbers were given in Report No. 2 (pp. 44 and 45), and in Report No. 9 Appendixes I. to IV., pp. 174 to 229.
2. Scope of Investigation.-It was pointed out in Report No. 1 that, in any investigation into the question of change in cost of living of a community, a careful distinction must be drawn between two things, viz. :-
(a) Variations in the purchasing-power of money, and
(b) Variations in the standard of living.

In Report No. 2, attention was drawn to the fact that the second element (b) can be limited, at any rate to some extent, by the exercise of self denial and thrift, and that such limitation is at the disposal of each individual; the former ( $a$ ) is not subject to this possibility. Thus, from this aspect, social economics are concerned primarily with an accurate estimation of variations in the purchasing-power of money and only secondarily with the question of the general standard of living which has been reached. The first desideratum demands the selection of a suitable list of commodities, the quantities of each being taken in due proportion to their relative average consumption. The quantities in this list being kept constant, the cost of the whole group must then be ascertained. In this way a comparison may be made of the cost in different areas or districts at the same time, as well as the variation in any one place from time to time. This is the " aggregate expenditure" method explained above.

As explained in Report No. l, special steps were taken to conduct the investigation back as far as 1901 for the capital towns only. The collection of current monthly returns as to prices and of quarterly returns of house rents commenced in 30 of the more important towns of the Commonwealth in January, 1912.
3. Commodities and Requirements Included.-The 47 items of expenditure included are divided into four groups, viz. :-(i) groceries and bread, (ii) dairy produce, (iii) moat, and (iv) house rent. These items cover about 60 per cent. of the total expenditure of a normal family. There are very cogent reasons for the restriction of the enquiries to the items mentioned. If the comparisons made are to be satisfactory, no confusion must arise between changes in the standard of living and changes arising from a variation of the purchasing-power of money. In order to avoid such confusion the items selected are such as are sensibly identical and identifiable in the various localities. The most important group of expenditure which is not included is clothing, the cost of which amounts to about 13 per cent. of the total expenditure. Owing to influences of individual taste, fashion, and the enormous variety of production, articles included in this group are practically not comparable and identifiable. As regards fuel and light, the cost of which amounts to about 4 per cent. of the total expenditure, while these commodities are comparable and identifiable, the usage or relative consumption in the towns included in the inquiries varies to such an extent that their inclusion on an assumed constant regimen would tend to produce a fictitious result in so far as variations in the purchasingpower of money are concerned.

In Report No. 10 (page 26), a tabular statement was given fumishing particulars of the commodities and items included, the units of measurement for which prices are collected, and the mass-units shewing the relative extent to which each item is used or consumed.
4. Variations in the Purchasing. Power of Money in each Metropolitan Town, 1901 to 1919.-In Labour Reports and Bulletins, and in recent issues of the Quarterly Summaries of Statistics, index-numbers were given for each of the four groups, and for all groups combined for each capital town since 1901, the expenditure in 1911 being taken in each case as base $(=1,000)$. In this section only summarised results are given. Firstly, for fqod and groceries; secondly, for house rent; and thirdly, for all groups combined-the weighted average expenditure for all capital towns in 1911 being taken in each case as base ( $=1,000$ ). The index-numbers in each table are fully comparable with each other, that is to say, they shew not only the variations from year to year in each capital town, but also the relative cost as between the towns.
(i) Food and Groceries. The index-numbers thus computed for the three groups comprising groceries and food are shewn in the following table:-

RETAIL PRICES IN METROPOLITAN TOWNS, INDEX-NUMBERS FOR GROCERIES AND FOOD (GROUPS I., II., AND III.), 1901 TO 1919.


The above figures are directly comparable in every respect; thus it will be seen that the same quantity of food and groceries, which cost $£ 1,000$ in the capital towns considered as a whole in 1911, would have cost $£ 917$ in Sydney in 1901, £1,346 in Perth in 1911, or £1,620 in Melbourne in 1919.

The weighted average retail price index-numbers for the six capital cities shew that the upward tendency of prices was temporarily arrested on two occasions since 1911first in 1913, and, again, in 1917. The first instance was mainly due to a fall in the prices of sugar, potatoes, and butter; while in 1917 bread, flour, potatoes, milk, and beef were the more important items which contributed to the decline. The movement indicated was, with four exceptions, common to all the capital cities. The prices for Sydney show a rise in every year since 1911; in 1917 Sydney and Hobart constituted exceptions to the decline experienced in all the other capitals; while in 1918 the figures for Perth only shewed a decline. In 1919 increases were experienced in all the cities concerned. Comparing the results for 1919 with those for 1911 it will be seen that the extent, by which prices increased, varied from 80 per cent. in Sydney to 32 per cent. in Perth. It will be noticed, however, that prices were abnormally high in Perth in 1911. Disregarding Perth, it will be found that the variation between the other cities-which were, substantially, on an equality in 1911-is not more than 15 per cent., the extremes being 80 per cent. in Sydney and $6 a$ per cent. in Hobart.
(ii) House Rent. In the following table, index-numbers are given computed for the weighted average house rent in each of the capital towns from 1901 to 1919, taking the average rent for the six capital towns in 1911 as the base $(=1,000)$. The average rent has been obtained for each town separately by multiplying the average predominant rent for each class of house (i.e., houses having less than 4 rooms, 4 rooms, 5 rooms, 6 rooms, 7 rooms, and over 7 rooms) by a number (" weight") representing the relative number of houses of that class in the particular town. The sum of the products thus obtained, divided by the sum of the weights, gives the weighted average for all houses. The number of houses in each class for each town was obtained from the results of the 1911 census. It should be observed, therefore, that these index-numbers are based on the weigbted average rents for all houses, and that they do not refer to any particular class of houses. The actual predominant rents for each class were given in appendixes to

Reports Nos. $1,2,5,6,7,8,9$, and 10 , and an examination of these figures shews that for some classes of houses the increase has been greater, and in some less, than the general increase indicated in the following table.

## HOUSE RENTS IN METROPOLITAN TOWNS.-INDEX-NUMBERS SHEWING WEIGHTED AVERAGE RENTS (GROUP IV.), 1901 TO 1919.

| Town. | 1901. | 1906. | 1910. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sydney | 858 | 891 | 988 | 1,090 | 1,183 | 1,246 | 1,279 | 1,220 | 1,212 | 1,215 | 1,252 | 1,28! |
| Melbourne | 733 | 782 | 916 | 970 | 1,016 | 1,089 | 1,126 | 1,085 | 1,089 | 1,124 | 1,180 | 1,283 |
| Brisbane | 488 | 524 | 700 | 767 | 804 | 863 | 882 | 859 | 847 | 859 | 905 | 983 |
| Adelaide | 629 | 761 | 1,018 | 1,112 | 1,160 | 1,125 | 1,040 | 932 | 930 | 959 | 1,022 | 1,108 |
| Perth | 801 | 716 | 696 | 810 | 880 | 928 | 914 | 848 | 869 | 874 | 885 | 916 |
| Hobart | 667 | 686 | 776 | 805 | 829 | 887 | 914 | 928 | 928 | 951 | 956 | 1,134 |
| Weighted A verage* | 751 | 793 | 919 | 1,000 | 1,063 | 1,118 | 1,135 | 1,081 | 1,081 | 1,098 | 1,143 | 1,215 |

* For all capital towns.

Note-The above figures are directly comparable in every respect.
The figures given in the above table shew that from 1901 to 1914 house rents increased in all the capital cities, though varying in degree, from 14 per cent. in Perth to 81 per cent. in Brisbane, where, however, rents were very low in 1901. The weighted average indexnumber, which is, of course, largely dominated by the experience of the more populcus (itics of Sydncy (with an increase of 49 per cent.) and Melbourne ( 54 per cent.) increased from 751 in 1901 to 1,135 in 1914, or by 51 per cent. This increase in the weighted average represents the accumulated results of increments of varying amount, in each of the years 1901-1914, without exception. These annual increments to rents were experienced in all the capital cities except Adelaide and Perth. Since 1916 rents have advanced in all the capital cities. The rent index-numbers for Perth for the years 1904-10 consistently followed a direction opposite to that taken by the same indices relating to the other cities, inasmuch as, instead of moving upward, they declined during each year, the aggregate result being a fall from 802 in 1903 to 667 in 1909, and, although they rose in 1910 to 696 , they were even then below the level of 1903. This period of falling rents in Perth-in such striking contrast to the experience of all the other capital cities-was contemporaneous with a diminution almost to vanishing point of net immigration, which for many years had been considerable. A further factor in the arrest of the growth of population consisted in the reduction of public expenditure following upon the completion of large public works, while, at the same time, there was a falling-off in speculative ventures in gold-mining. Moreover, during this period there was a marked movement by residents of Perth to land settlement in the southern districts of the State.

A further striking feature in the movements of rents, as shewn by the weighted average index-numbers given in the foregoing table, is the decline registered in the years 1915-1917. This fall was probably, in some measure, due to the circumstance that wives and other dependents of soldiers, for social reasons, gave up their separate establishments and shared houses or apartments, thus reducing the demand for house accommodation. The Government regulations forbidding the increase of rents of houses tenanted by soldiers' dependents would, also, have a restraining influence on any tendency for rents to rise. The high prices for food and groceries during these years also furnished an inducement, for economic reasons, to persons, other than soldiers' dependents, to share a honse. The compensating movements of the prices of food and groceries, and of house rents, wili be referred to late!.
(iii) Food, Groceries, and House Rent combined. The weighted averages for all four groups are of importance, as indicating the general results of this investigation so far as the purchasing-power of money is concerned. The following table shews the
index-numbers for groceries, food, and house rent for each metropolitan town, the weighted average cost for the six capital towns in 1911 being taken as base ( $=1000$ ) :-

PURCHASING.POWER OF MONEY IN METROPOLITAN TOWNS.-PRICE INDEXNUMBERS* SHEWING WEIGHTED AVERAGE RESULTS FOR ALL GROUPS (GROCERIES, DAIRY PRODUCE, MEAT, AND HOUSE RENT), 1901 TO 1919.

| Town. | 1901. | 1906. | 1910. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sydney | 893 | 934 | 995 | 1,031 | 1,148 | 1,178 | 1,206 | 1,323 | 1,394 | 1,406 | 1,427 | 1,580 |
| Melbourne | 870 | 878 | 942 | 950 | 1,055 | 1,051 | 1,105 | 1,277 | 1,309 | 1,294 | 1,349 | 1,481 |
| Brisbane | 769 | 780 | 877 | 915 | 979 | 969 | 997 | 1,162 | 1,188 | 1,181 | 1,252 | 1,442 |
| Adelaide | 864 | 891 | 1,008 | 1,058 | 1,157 | 1,121 | 1,143 | 1,259 | 1,285 | 1,245 | 1,335 | 1,468 |
| Perth | 1,027 | 1,024 | 1,023 | 1,126 | 1,154 | 1,128 | 1,143 | 1,222 | 1,266 | 1,246 | 1,239 | 1,420 |
| Hobart | 869 | 899 | 951 | 954 | 1,042 | 1,050 | 1,090 | 1,233 | 1,278 | 1,301 | 1,356 | 1,496 |
| Weighted A verage $\dagger$ | 880 | 902 | 970 | 1,000 | 1,101 | 1,104 | 1,140 | 1,278 | 1,324 | 1,318 | 1,362 | 1,510 |

* As the price index-number increases, the purchasing-power of money diminishes.
$\dagger$ For all capital towns.
Note.-The above figures are directly comparable in every respect.
From this table, which presents the index-numbers for the combined results from food and groceries and rents, it will be seen that, on the basis of the weighted average for the six capital cities, the decline (alluded to in (i) of this sub-section) in the prices of food and groceries during 1913 was more than counterbalanced by the rise in house rents. This, however, was not the case with regard to Melbourne, Brisbane, or Perth, for each of which the combined index shews a decline. Adelaide, alone, shewed a decrease in house rents in 1913, consequently the decline in the combined index-number for that city was the most marked. In 1917 the fall in the prices of food and groceries was sufficient to outweigh the increase in house rents and so effect a slight decrease in the combined index-number. As in 1913, the net effect in Sydney and in Hobart did not conform to the experience indicated by the weighted average. In 1918 the upward movement was experienced in all the cities except Perth, while in 1919 it was general throughout.

The abnormal movements of the prices of food and groceries, and of house rents, during the war years present features of particular interest. It will be seen that, on the basis of the weighted averages, prices of food and groceries rose in 1915 by about 24 per cent. over 1914, and continued on a somewhat higher level, whereas the weighted average for house rents fell in 1915 by 4.8 per cent., and remained below the 1913 level until 1918. The combination of house rents with prices of food and groceries has had the effect of very materially modifying the index of prices, or, in other words, the purchasingpower of money, as compared with the similar index based on food and groceries only. In 1918 and 1919 there were increases in both prices of food and groceries and house rents, the combined results for 1919 being an increase of 10.9 over 1918, 32.5 per cent. over 1914, and 51.0 per cent. over 1911. The decrease in the purchasing-power of money between 1919 and 1914 has varied between the capital cities from 24 per cent. in Perth to 45 per cent. in Brisbane, while between 1919 and 1911 it has varied between 26 per cent. in Perth and 58 per cent. in Brisbane.
5. Variation in Purchasing-Power of Money, 1901 to 1919.-The tables in paragraph 4 give the relative cost in the six capital towns of food, groceries, and house rent from 1901 to 1919 in the form of index-numbers. The figures have been converted into a monetary basis in the next table, and shew the sums which would have to be paid in each town and in each year in order to purchase such relative quantities (indicated by the mass-units) of the several commodities, and to pay such sums for house rent as would in the aggregate cost £1, according to the weighted average prices and rents in the six capital towns in 1911.

CHANGES IN PURCHASING-POWER OF MONEY (FOOD, GROCERIES, AND HOUSE RENT), 1901-19.

|  | Year. | Syduey. | Melbourne. | Brisbane. | Adelaide. | Perth. | Hobart. | Weighted A verage o 0 Capital Towns. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 8. ${ }^{\text {d. }}$ | 8. d. | s. d. | s. $\quad$ d. | s. d. | s. ${ }^{\text {d }}$ | 8. $\quad$ d. |
| 1901 | . | 1710 | 17 5 | 155 | 17 3 | 206 | 17 5 | 17 |
| 1906 | . | 188 | 17 | 157 | 1710 | 205 | 18 0 | 180 |
| 1911 |  | 207 | 190 | 184 | 21 | 226 | 19 1 | 20 0* |
| 1913 |  | 237 | 210 | 195 | 225 | 226 | 211 | 221 |
| 1914 |  | 241 | 221 | 1911 | 2210 | 2210 | 2110 | 2210 |
| 1915 |  | 266 | 256 | 233 | $25 \quad 2$ | 245 | 248 | 257 |
| 1918 |  | 2710 | 262 | 239 | 258 | 254 | $25 \quad 7$ | 266 |
| 1917 |  | 28 1 | 2511 | 237 | 2411 | 2411 | 26 0 | 264 |
| 1918 |  | 286 | 27 0 | 251 | 268 | 249 | 271 | 273 |
| 1919 |  | 317 | 297 | 2810 | 294 | 285 | 2911 | 302 |

* Basis of Table.
(i) Groceries and Food only. The following table has been computed in the same manner as that indicated above, but relates to groceries and food ( 46 items) only. The average expenditure for the six capital towns in 1911 has again been taken as the basis of the table (=20 shillings) and the figures are, of course, comparable throughout.
CHANGES IN PURCHASING-POWER OF MONEY.-GROCERIES AND FOOD, 1901-19.

(ii) House Rent only. The following table gives similar particulars for house rent only, the average for the six capital towns in 1911 being again taken as the basis of the table ( $=20$ shillings) :-

CHANGES IN PURCHASING-POWER OF MONEY.-HOUSE RENT, 1901-19.

|  | Year. | Sydney. | Melbourne. | Brisbane. | Adelaide. | Perth. | Hobart. | Weighted Average o 6 Capital Towns. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | s. d. | 8. d. | 8. d. | 8. d. | 8. d. | s. d. |  |
| 1901 |  | 173 | 148 | 99 | 127 | 160 | 134 | 15.1 |
| 1906 |  | 1711 | 158 | 106 | 15 | 144 | 139 | 1511 |
| 1911 |  | 2110 | 195 | 154 | 223 | 163 | 161 | 20 0* |
| 1913 |  | 2411 | 2110 | 17 3 | 226 | 187 | 1710 | 224 |
| 1914 |  | $25 \quad 7$ | 226 | 178 | 2010 | 183 | 18 3 | 228 |
| 1915 |  | 245 | 218 | 172 | 188 | $17 \quad 0$ | 187 | 217 |
| 1916 |  | 24 | 21.9 | 17 0 | 187 | $17 \quad 4$ | 187 | 217 |
| 1917 |  | 243 | 226 | 17 | 192 | $17 \quad 5$ | 190 | 220 |
| 1918 |  | 250 | 237 | 181 | 205 | 178 | 191 | 2210 |
| 1919 |  | 259 | 258 | 198 | 222 | 184 | 22_8 | 24 |

[^11]6. Relative Cost of Food, Groceries, and House Rent in Different Towns, 1919.The index-numbers given in the preceding paragraphs shew changes in the cost of food, groceries, and house rent separately for each capital town during the years 1901 to 1919. The figures given in the table below shew the relative cost of food and groceries, and of house rent in 1919 in the thirty towns for which particulars are now collected. The weighted aggregate expenditure for the six capital towns for the year 1911 has been taken as base and made equal to 1,000 , hence the columns are comparable both horizontally and vertically.
index-numbers, SHEWING RELATIVE COST in THIRTY TOWNS, OF FOOD and groceries and house rent compared with weighted average EXPENDITURE THEREON IN THE SIX CAPITAL TOWNS IN 1911 AS BASE ( $=1,000$ ), YEAR 1919.

| Town. | Groceries and Food. | House Rent. |  |  |  | Groceries, food and Rent, including houses havina- |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Fourroomed Houses only. | Fiveroomed Houses only. | Sixroomed Houses only. | All <br> Houses Weight'd A verage. | Four Rooms. | Five Rooms. | $\begin{gathered} \text { Six } \\ \text { Rooms. } \end{gathered}$ | All <br> Houses Weight'd Average. |
| New South Waies- |  |  |  |  |  |  |  |  |  |
| Sydney | 1,050 | 414 | 499 | 590 | 530 | 1,464 | 1,549 | 1,640 | 1,580 |
| Newcastle | 1,062 | 334 | 440 | 537 | 431 | 1,396 | 1,502 | 1,599 | 1,498 |
| Broken Hill* | 1,119 | 281 | 353 | 438 | 300 | 1,400 | 1,472 | 1,557 | 1,419 |
| Goulburn | 1,049 | 300 | 399 | 552 | 475 | 1,349 | 1,448 | 1,601 | 1,524 |
| Bathurst | 990 | 235 | 299 | 398 | 350 | 1,225 | 1,289 | 1,388 | 1,340 |
| Weighted Average .. | 1,053 | 398 | 484 | 577 | 509 | 1,451 | 1,537 | 1,630 | 1,562 |
| Victoria- |  |  |  |  |  |  |  |  |  |
| Melbourne | 954 | 381 | 485 | 594 | 527 | 1,335 | 1,439 | 1,548 | 1,481 |
| Ballarat | 935 | 147 | 221 | 295 | 263 | 1,082 | 1,156 | 1,230 | 1, 198 |
| Bendigo .. .. | 918 | 195 | 276 | 362 | 297 | 1,113 | 1,194 | 1,280 | 1,215 |
| Geelong .. | 935 | 264 | 380 | 464 | 412 | 1,199 | 1,315 | 1,399 | 1,347 |
| Warrnambool | 945 | 268 | 349 | 423 | 366 | 1,21.3 | 1,294 | 1,368 | 1,311 |
| Weighted Average . . | 950 | 346 | 446 | 550 | 486 | 1,296 | 1,396 | 1,500 | 1,436 |
| Queensland- |  | - |  |  |  |  |  |  |  |
| Brisbane .. | 1,038 | 263 | 337 | 445 | 404 | 1,301 | 1,375 | 1,483 | 1,442 |
| Toowoomba | 1,060 | 205 | 264 | 332 | 342 | 1,265 | 1,324 | 1,392 | 1,402 |
| Rockhampton | 1,076 | 211 | 265 | 357 | 332 | 1,287 | 1,341 | 1,433 | 1,408 |
| Charters Towers | 1,166 | 225 | 301 | 351 | 288 | 1,391 | 1,467 | 1,517 | 1,454 |
| Warwick | 1,064 | 211 | 287 | 355 | 334 | 1,275 | 1,351 | 1,419 | 1,398 |
| Weighted Average | 1,055 | 247 | 318 | 414 | 379 | 1,302 | 1,373 | 1,469 | 1,484 |
| South Australia- |  |  |  |  |  |  |  |  |  |
| Adelaide .. | 1,013 | 338 | 448 | 574 | 455 | 1,351 | 1,461 | 1,587 | 1,468 |
| Moonta, etc. | 1,005 | 237 | 314 | 414 | 325 | 1,242 | 1,319 | 1,419 | 1,330 |
| Port Pirie* | 1,028 | 354 | 421 | 454 | 396 | 1,382 | 1,449 | 1,482 | 1,424 |
| Mt. Gambier | 931 | 207 | 265 | 355 | 291 | 1,138 | 1,196 | 1,286 | 1,222 |
| Peterborough | 1,020 | 264 | 357 | 410 | 349 | 1,284 | 1,377 | 1,430 | 1,369 |
| Weighted Average . . | 1,011 | 328 | 432 | 551 | 438 | 1,339 | 1,443 | 1,561 | 1,449 |
| Westhrn Adstralia- |  |  |  |  |  |  |  |  |  |
| Perth, etc. | 1,044 | 320 | 396 | 479 | 376 | 1,364 | 1,440 | 1,523 | 1,420 |
| Kalgoorlie, etc. | 1,201 | 361 | 434 | 514 | 344 | 1,562 | 1,635 | 1,715 | 1,545 |
| Mid. Junction, etc. | 1,023 | 231 | 307 | 365 | 290 | 1,254 | 1,330 | 1,388 | 1,313 |
| Bunbury .. | 1,090 | 223 | 291 | 310 | 219 | 1,313 | 1,381 | 1,400 | 1,309 |
| Geraldton | 1,037 | 359 | 455 | 554 | 388 | 1,396 | 1,492 | 1,591 | 1,425 |
| Weighted Average | 1,076 | 323 | 398 | 478 | 362 | 1,399 | 1,474 | 1,554 | 1,438 |
| Tasmania- |  |  |  |  |  |  |  |  |  |
| Hobart . | 1,030 | 339 | 440 | 518 | 466 | 1,369 | 1,470 | 1,548 | 1,496 |
| Launceston | 1,006 | 282 | 392 | 459 | 403 | 1,288 | 1,398 | 1,465 | 1,409 |
| Zeehan | 1,093 | 134 | 173 | 215 | 129 | 1,227 | 1,266 | 1,308 | 1,222 |
| Beaconsfield | 1,021 | 67 | 90 | 103 | 84 | 1,087 | 1,110 | 1,123 | 1,105 |
| Queenstown | 1,109 | 266 | 329 | 301 | 248 | 1,375 | 1,438 | 1,470 | 1,357 |
| Weighted Average . . | 1,030 | 296 | 391 | 459 | 401 | 1,326 | 1,421 | 1,489 | 1,431 |
| Commonwealth Weighted Average, 30 Towns | 1,014 | 350 | 440 | 538 | 467 | 1,364 | 1.454 | 1,552 | 1,481 |

- Sce remarks on page 48 of Labour Report No. 10, with reference to house rents.

A table shewing the retail price index-numbers (food and groceries) for each of the thirty towns for various months in the year since July, 1914, appeared in previous issues, but consideration of space precluded its repetition in the present issue. This table is, however, given in Labour Report No. I0, issued by this Bureau.

## § 8. Investigation into Purchasing-Power of Money in 150 Towns in Commonwealth.

1. Introduction.-In the earlier investigations with regard to the variations in the purchasing-power of money, inquiries were restricted to the 30 towns mentioned in the preceding table. To provide a wider field of observation, investigations were extended in November, 1913, to 100 towns, and in November, 1915, to 150 towns. The indexnumbers for these 150 towns are computed from the retail prices ruling in November of each year.
2. Map shewing the relative Purchasing-Power of Money in various Localities.The index-numbers for each of the 150 towns referred to in the preceding paragraph are tabulated on the inset on page. 1073, and are accompanied by a map of Australia. The position of any town may be located on the map by the reference numbers printed on the left-hand margin of the table. The weighted average cost for the 100 towns in 1913 has been taken as the base, and the index-numbers are comparable throughout. Separate index-numbers are given for food, groceries, and rent of five-roomed houses (Column headed " $A$ "), and for food and groceries only (Column headed " B").

## § 9. Wholesale Prices.

1. General.-The results of an investigation into wholesale prices in Melbourne from 1871 to the end of September, 1912, were given in some detail in Report No. 1 of the Labour and Industrial Branch. Summarized results for later years are included in later Reports of the same Branch.

The index-numbers up to the year 1911 are based on the prices of eighty commodities, but since that year the number has been increased to ninety-two.* The methods followed for the computation of the wholesale price index-numbers are the same as those adopted in regard to retail prices. The commodities included, the units of measurement for which the prices are taken, and the mass-units, indicating the relative extent to which each commodity is used or consumed, are shewn in a tabular statement in Report No. 10 (page 67).
2. Index-Numbers and Graphs.-Index-numbers have been computed for each group of commodities, as well as for all groups together. The index-numbers for the several groups, and for all groups together, are shewn in the following table.
(i) Table of Index-numbers. The index-numbers have in each case been computed with the prices in the year 1911 as base. They shew, for each of the years specified, the expenditure necessary, if distributed in purchasing the relative quantities (indicated by the mass-units) of the several commodities concerned, to purchase what would have cost $£ 1,000$ in 1911. Thus, in the last column it may be seen that the cost of the relative quantities of the various commodities was 1,229 in 1871, and 974 in 1901, as compared with 1,000 in 1911, 1,170 in 1912, 1,088 in 1913, 1,149 in 1914, 1,604 in 1915, and 1,934 in 1918. In other words, prices were lower in 1911 than in either 1871, 1914, 1915, or 1918, and the purchasing-power of money in 1911 was, accordingly, greater. Again, prices were lower in 1301 than in 1911 , and the purchasing-power of money in the former year was, therefore, greater.

[^12]
## MELBOURNE WHOLESALE PRICES, INDEX-NUMBERS, 1861 TO 1919, COMPUTED TO YEAR 1911 AS BASE.



Note.-The figures given in this table are comparable in the vertical columns, but are not directly comparable horizontally. The index-numbers are reversible.
(ii) Graphs. The index-numbers are shewn for each group and for all groups combined in the graphs on page 1074. The heavy line, repeated on each graph, represents the index-numbers for the weighted average for all groups, and is shewn so that comparison may be made between the price levels for all commodities and those for the commodities comprised in each group separately. The index-numbers for the individual groups are represented by the light lines. The broken lines at the commencement of each graph shew the index-numbers for the separate years 1861 and 1866 , the continuous records commencing with the year 1871. The actual index-numbers for the whole period were given in Report No. 1.
3. Seasonal Fluctuations and Tables of Prices.-Information as to seasonal fluctuations in wholesale prices was given in Report No. 2 (page 64), and tables of prices of each commodity were given in Appendixes to the Reports of the Labour and Industrial Branch of this Bureau.
4. Fluctuations in Wholesale Prices, July, 1914, to July, 1920.-Since the outbreak of war, prices of many commodities have increased considerably. This is shewn in the following table in which the index-numbers are given for each group for the month of July, 1920, taking July, 1914, the last month before the outbreak of war, as base ( $=1,000$ ) for each group :-

## MELBOURNE WHOLESALE PRICES.—VARIATIONS BETWEEN JULY, 1914, AND JULY, 1920.

| Particulars. | $1 .$ <br> Metals and Coal. | II. <br> Jute, Leather, etc. | III. <br> Agricultural Produce, etc. | IV. <br> Dairy Produce. | V. <br> Groceries. | VI. <br> Meat. | VII. <br> Building Materials. | VIII. <br> Chemicals. | $\xrightarrow[\text { Groups. }]{\text { All }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| July, 1914 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| July, 1920 | 2,109 | 2,518 | 2,438 | 1,884 | 1,928 | 2,609 | 3,069 | 2,834 | 2,671 |

It will be seen that, on the basis of the weighted average for all the groups of commodities included in the computation, prices have risen during the period specified by no less than 167 per cent. The greatest increase, 206.9 per cent., is recorded in Group VII. (Building Materials), and the least, 88.4 per cent., in Group IV. (Dairy Produce).

## § 10. Control of Trade and Prices during the War.

1. General.--Shortly after the outbroak of war, a conference of Federal and State Ministers met to discuss the financial position and other matters, and it was decided that for the purpose of controlling the prices of foodstuffs, each State should introduce uniform legislation, since it was obvious that this was necessary in view of all the circumstances. Particulars of the various Acts passed by the State Governments were given in Labour Bulletin No. 6, September, 1914, pages 132-147. The same publication shews that there was great diversity in regard to the operations of the various authorities created in the different States.

As a further outcome of this conference, in addition to the various State Boards and Commissions, a Federal Royal Commission, consisting of the Hon. Alfred Deakin (chairman), the Hon. Dugald Thomson, formerly Minister for Home Affairs, and Mr. G. H. Knibbs, C.M.G., Commonwealth Statistician, was appointed to collect information and report upon such matters as the supply of foodstuffs and other necessaries required by and available for Australia during the war and cognate matters. This Commission ceased to exercise its functions after the 30th October, 1914.
2. Federal Control of Prices.-In March, 1916, the Federal Government created a Prices Adjustment Board with authority to fix the prices of flour, bread, bran, and pollard. The Board fixed the prices of flour, bran, and pollard in every milling centre in Australia. Prices of bread were fixed in upwards of 1,000 separate towns, after investigations had been made as to the cost of manufacture, distribution, etc. An important judgment of the High Court, as to the powers of Government to fix prices, was obtained as the result of the conviction of a Melbourne suburban baker, by the local magistrate, for selling bread at a higher rate than that fixed by the Prices Adjustment Board. This conviction was appealed against, but the High Court, by a majority decision, affirmed that in matters affecting the safety of Australia the Government, under the War Precautions Act, had plenary powers, and that the decision as to what is necessary rests with the Executive and not with the judicial authority. After this judgment, the scope of the investigations and activities of the Prices Adjustment Board were considerably enlarged, and an exhaustive list of commodities was declared to be "necessary commodities." Later, a Commissioner was appointed_in each State to make investigations, and to make recommendations to the Minister as to the necessity for fixing maximum selling prices of various commodities.

Shortly after the appointment of these Commissioners, the members of the Prices Adjustment Board resigned in a body, and the control. of prices was placed in the hands of a Minister acting upon the recommendations of State Commissioners. The Commissioner for Victoria acted also as Chief Prices Commissioner. Prices were fixed, by regulations under the War Precautions Act, for a large number of commodities. In May, 1919, the Commonwealth Government released from the control of the Prices Commissioners many articles, trade in which had been regulated during the war.

In July, 1919, control ceased of all but a few commodities; the more important of which were butter, checse, and flour. In August, 1920, the Commonwealth organization for the fixing of prices was abolished. Prices, however, of necessary commodities were not permitted to remain uncontrolled except in Tasmania. In New South Wales, Queensland, and South Australia price fixing was resumed under the authority of Acts already in existence, while in Victoria and Western Australia necessary legislation was passed to enable the Governments of these States to deal with the subject.

The following statement shews the Acts which have been passed, and the Bills introduced by the Governments of the various States for the purpose of controlling prices:-

New South Wales.-In New South Wales, control of prices was resumed in July, 1919, under authority of the "Necessary Commodities Control Act, 1914.": In January, 1920, this Act was superseded by the " Necessary Commodities Control Act, 1919."
Fictoria.-In Victoria, an Act entitled the " Necessary Commodities Control Act, 1919," was passed. Under authority of this Act a "Fair Profits Commission," consisting of three members, was appointed for the purpose of regulating prices of necessary commodities in Victoria.
Queensland.-Queensland resumed control of prices in December, 1919, under authority of "The Control of Trade Act, 1914." In March, 1920, this Act was superseded by "The Profiteering Prevention Act, 1920," under which a "Commissioner of Prices" was appointed to control prices in Queensland.
South Australia.-State control was resumed in August, 1919, under authority of the "Prices Regulation Act, 1914." In November, 1919, this Act was superseded by the " Prices Regulation Act, 1919," under which a "Prices Regulation Commission," consisting of three members, was appointed to control prices in South Australia.
Jestern Australia.-In Western Australia, State control of prices was not resumed until December, 1919, when an Act, entitled "The Prices Regulation Act, 1919," was passed. Under this Act three Commissioners were appointed for the control of prices in Western Australia.
Tasmania.-In Tasmania, a "Necessary Commodities Control Bill, 1919," was introduced, but was not passed.
3. Control of House Rents.-No attempt was made by the Commonwealth Government to control rents generally, but War Precautions Regulations afforded special protection to persons connected with the Defence Forces against increases in rent. During the war the Inter-State Commission conducted an investigation into Housing Accommodation and Rents. Fair Rents Courts are in operation in New South Wales, under the "Fair Rents Act, 1915," and in Queensland under "The Fair Rents Act, 1920." So far the remaining States have not attempted to control rents.


[^0]:    Notr.-For years prior to 1919 the figures refer to the end of the year only; similar fivures for each of the four quarters of the years since 1912 will be found in the Labour and Industrial Reports. The quarterly figures shew the number of persons who were out of work for three davs or more during a specified week in each quarter; they do not include persons out of work through strikes or lockouts.

[^1]:    * Weighted average. $\quad+$ Including the value of victualling and accommodation where supplied.

[^2]:    - Weighted average weekly wage in all industrial groups combined. † Weighted average working hours per week, and computed hourly rates of wage for all industrial groups excepting Groups XI. (Shipping, etc.), and XII. (Agricultural, Pastoral, etc.). Working hours have not been generally regulated by industrial tribunals for occupations classified in industrial groups XI. and XII.

    From the foregoing table it may be seen that there has been a diminution in each of the States in the number of working hours constituting a full week's work for male and female occupations. The effect of these changes on the hourly rate of wage as compared with the general increase in the weekly wage is readily seen from the comparative index-numbers given in the following table. In each instance (male and female occupations separately) the basis taken is the weighted average for the Commonwealth at the 30th April, 1914, as base $(=1,000)$.

[^3]:    Note.-The figures in the above table are comparable both horizontally and vertically.

    * Weighted average : see graph on page 1071 hereof. $\dagger$ The decrease in this group is due to a

[^4]:    * As to the effect in abnormal periods, see Labour Report No. 6, pp. 20-2, Section IV., par. 3.

[^5]:    * This expression must not be confused with "standard of living." A change in the standard of living necessarily involves a change in regimen (see Labour Report No. 1), that is, a change in the nature or in the relative quantity of commodities purchased, or both. A change in the "standard of comfort " merely implies a variation in effective wages, which variation may, or may not, result in, or be accompanied by, a change in the " standard of living."

[^6]:    It should be observed that changes brought about by awards and agreements under the Commonwealth Conciliation and Arbitration Act 1904-18 and the Commonwealth Arbitration (Public Service) Act 1911 are necessarily included hereunder as changes in each State to which such awards and agreements apply. The average increase per head per week is computed to the nearest penny.

[^7]:    * Since these forms are issued under the authority of the Census and Statistics Act 1905, it is compulsory upon prescribed persons to furaish the information required.

[^8]:    * In this table an Industrial Award or Agreement under the Commonwealth Conciliation and

[^9]:    * Changes recorded in this column are common to all States, as the particulars relating to the number of workpeople affected and the net amount of increase per week in each State were not ascertainable. $\dagger$ Including four changes which affected $15 \overline{7}$ workpeople in the Federal Capital Territory.

[^10]:    * Any tabulations as to causes, duration, etc., based on disputes which were in existence in any given year, and not on those which commenced in that year, would inevitably result in confusion, seeing that particulars relating to the same dispute would probably occur in two successive years.

[^11]:    - Basis of Table.

[^12]:    - In the compatation of the index-numbers for years prior to 1911, the aggregate expenditure on 80 commodities in 1911 is taken as base $(=1,000)$, while for later years the aggregate expenditure on 92 commodities is talen.

