

I N D E X

TO THE

R E P O R T

FROM THE

S E L E C T C O M M I T T E E

O N

M I N E S

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2. Hours of Labour.
3. Character of the Employment.
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5. Rate of Wages.

II. *As under increased Restrictions:*

1. Limits proposed as to the Age of Employment and Hours of Labour.
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Estimate of from 2,000 to 3,000 children between ten and twelve years of age, in the mines in the Wigan district, *Pichard* 1598-1601.—Information relative to the proportion of boys and of men employed in the Doe mine at Kearsley, near Bolton, *Achersley* 2435-2445.—Total of from 1,700 to 1,800 boys employed in a certain portion of the South Yorkshire district, there being about 10,000 pitmen, *Normansell* 3023, 3024.—Comparatively few boys under the age of twelve, *ib.* 3025, 3026. 3059, 3060.

Employment in the Ashton-under-Lyne district of about 2,000 boys, there being from 3,000 to 4,000 men, *Booth* 4370-4379.—Practice in Cheshire since the Act of 1860, not to employ boys under twelve years of age, *ib.* 4380-4384.—Very few boys employed in the pit where witness now works, it being a very small one, *ib.* 4425-4433.

Large number of boys employed in Nottinghamshire, there being fifteen or twenty boys under fourteen years of age to every 100 men, *Wilkins* 4659-4664.—Witness is not aware of the employment of any boys under twelve, *ib.* 4662, 4663.—Large proportion of boys in the collieries in Leicestershire, *Hall* 4944-4948.—Improvement since the Act of 1860, as to the age of employment in Leicestershire, *ib.* 4949-4951.

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BOYS—I. As under Existing Regulations—continued.

1. Number and Ages of Boys in Mines in different Districts—continued.

Average of eight or ten boys to every 100 men in the collieries about Tipton, *Millward* 5154-5157—Instances of boys being still employed under the age of twelve, *ib.* 5158-5162—Average of about twenty boys under fourteen years of age, to every 100 men in the district about Sherburn, in Durham, *Parker* 6044-6046—Very few boys under twelve years of age; education certificates being required in such cases, *ib.* 6047-6049.

Considerable number of boys under fourteen years of age, employed in the collieries in witness's neighbourhood in South Wales, *Griffiths* 6362-6364—Employment of many boys under twelve years of age in South Wales; attention lately paid to regulations as to education in the case of these, *ib.* 6365-6369. 6409-6413.

Considerable number of boys in the Scotch mines who are under twelve years of age; instances of education certificates not having been required in these cases, *M' Donald* 6779-6790—Very few boys between the ages of ten and twelve in witness's district of Scotland, it being required in all these cases that they can read and write, *Moore* 7743-7751. 7768-7771—Total of about 1,000 boys under fourteen in witness's district, *ib.* 7789-7791.

Decreasing employment of boys under twelve years of age in the Durham district, the Act being generally complied with as regards the education of these boys, *Atkinson* 8647-8649. 8658-8660—General rule in South Wales and the Midland Counties, since the Act of 1860, not to employ boys under twelve years of age in mines, *Evans* 8974-8983. 8988-8993—Somewhat older age of employment in mines since 1860, *Sandford* 9604—Number of boys employed in the South Hetton and other mines in witness's district, very few being under twelve years of age, *Broadbent* 11069-11071. 11074-11077.

Varying number of boys in proportion to men in different collieries near Barnsley, *Jeffcock* 11751-11755—Very few boys under the age of twelve employed in North or South Staffordshire, since the educational requirements under the Act of 1860, *Mathews* 12197-12202. 12241-12243.

Statement showing that out of ninety of the largest collieries there are fifty-four in which no boys under twelve years of age are employed, and that at the other thirty-six, there are 677 boys under twelve, *Day* 14186-14192.

2. Hours of Labour :

Employment of the children in Northumberland and Durham underground for twelve hours a day irrespective of the time occupied in going to and returning from work, &c., *Burt* 6. 7. 71-94—As a rule the children are necessarily engaged from fourteen to fifteen hours a day, including the time occupied in going to and returning from work, &c., *Burt* 6. 86-94; *Crawford* 451, 452—Information as to the time at which the boys in Northumberland commence their work, and as to the actual nature of their employment, *Burt* 71-81. 118-126. 139-146—Those boys who go to the pits at four in the morning do not leave till four in the evening, *ib.* 71-85. 147-150.

Average from eleven to fourteen hours as the daily employment of the boys in the mines about Wigan, *P. Dickinson* 655-657. 672—The boys in the Wigan mines generally enter the pit from five to six in the morning with the colliers by whom they are employed, *Baxendale* 1305-1307—Particulars relative to the hours of employment of boys in the district near Bolton, and the provision made for their education; great difficulty on account of their having about twelve hours of labour, *Ackersley* 2454 *et seq.*—Practice as to the time allowed for meals, *ib.* 2607-2610—Total of about thirteen hours from the time when a boy leaves home in the morning until he returns at night, *ib.* 2614-2618. 2622.

Average labour of the boys for nine or ten hours daily, the men working only eight hours; that is in South Yorkshire, *Normansell* 3033-3040—Employment of the boys in Cheshire for ten full hours, or about eleven hours altogether, *Booth* 4385-4390. 4409, 4410—Labour of the boys in Nottinghamshire for twelve hours in the pit, some of them being fourteen or fifteen hours away from home, *Wilkins* 4665-4668.

Employment of the boys in Staffordshire for twelve hours a day, some of them working at night, *Owen* 5466-5470—Most of the boys in Shropshire are twelve and a half hours in the mines, *Onions* 5684-5686—Average of more than twelve hours a day, for which the boys work in Durham, except on Saturday, *Parker* 6057-6064. 6079. 6080—Few boys employed in the night; shorter hours of labour of these, *ib.* 6083-6087. 6134-6145—Employment of the boys in the Rhondda Valley for ten or eleven hours daily, and sometimes for as long as fifteen hours, according to the employment of the men, *Griffiths* 6378-9392.

Average labour of boys from eleven to twelve hours when working under their parents in Scotch mines, and for about ten hours when employed by their masters, *M' Donald* 6803. 6813-6815—Inability of the inspector to interfere as to the hours of labour whilst the masters never interfere, *ib.* 6805-6808-6815.

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Boys—I. As under existing Regulations—continued.**2. Hours of Labour—continued.**

Labour of the boys in Lancashire for about ten hours a day on the average, *J. Dickinson* 7385-7389—The boys do not work for anything like twelve hours continually in Northumberland and Durham, *Forster* 10081—Hours of labour of the men and boys respectively in different pits in the Wigan district; these are much shorter than has been represented to the committee, *Hewlett* 11397-11405.

Longer hours of the boys than of the men in the Barnsley district, *Jeffcock* 11730-11732—Employment of boys for eleven or twelve hours in the pits in Staffordshire, *Mathews* 12207, 12208—Several causes owing to which boys, as well as men, are not employed in Staffordshire more than five days a week on an average, *ib.* 12216-12218. 12444, 12445.

3. Character of the Employment.

Irksome character of the employment of boys in keeping the doors; obstacle to their reading while thus employed, *Burt* 139-146. 151-160—Modes of employment of boys in the mines in the Wigan district, *Bazendale* 1208-1221—Employment of many more boys by the colliers than by the owners, *ib.* 1308—Occasional ill-usage of the boys by the men under whom they work, *ib.* 1345-1347. 1362-1367—Physical labour of the boys adverted to in support of the proposition for exceptional legislation as to their education and age of employment, *Pickard* 1636-1644. 1656-1667.

Several modes of employment of the boys in the South Yorkshire District; some of the work being of a laborious character for young boys, *Normansell* 3029-3032—Modes of employment of the boys in Cheshire; the work is sometimes above their strength, *Booth* 4391-4402. 4434-4438—Laborious character of some of the work in Nottinghamshire mines, *Wilkins* 4669-4677—Light work of the boys under fourteen, where witness is now employed, *Owen* 5464. 5472-5474.

Modes of employment of the boys at mines in Shropshire, some of the work being too laborious, *Onions* 5687-5692. 5754-5760—Information relative to the work performed by the boys in the Durham district, *Parker* 6050-6056. 6093-6095—Way in which the boys are employed under their parents or other colliers for whom they work in South Wales, *Griffiths* 6370-6377—Very hard work of the boys in Scotland, in drawing the coals; serious injury thereby to their health, *McDonald* 6791-6802. 6816-6819.

With regard to labour of the boys in Lancashire, the work, though hard, is not excessive, nor injurious to their health, *J. Dickinson* 7385-7389. 7394-7397. 7430-7432—Character of the work performed by the boys under twelve, who are engaged by the owners and by the men respectively in witness's district in Scotland, *Moore* 7752-7765—Conclusion as to ten or twelve hours in the pit not being injurious or too laborious for the boys; character of the work adverted to hereon, *Gilroy* 10638-10673. 10742-10745. 10761-10774.

Modes of employment of the boys in the Barnsley district, no particular skill or apprenticeship being essential, *Jeffcock* 11733-11737. 11756-11759—The boys' work is not oppressive in witness's district, *Chambers* 12112—Very light work performed by the boys in Staffordshire, *Mathews* 12204.

4. State of Health:

Injurious effect upon the health when boys begin work underground at the early age of ten, *Burt* 118. 189-191—Impression as to the injurious effect produced upon the boys' health in the Wigan district; particulars hereon as to the nature of their employment, *P. Dickinson* 735-762—Injurious effect upon the health through over-employment in mines at an early age, *Bazendale* 1324-1327—Very injurious effect upon the health of the boys through their labour in the mines, *Pickard* 1616, 1617. 1622—Injurious effect upon the health of miners through the amount of work in early life, and the bad ventilation, *Acherley* 2641-2643.

Dissent from certain evidence as to the injurious effect of mining labour upon the health, *Moore* 8262-8266—Absence of injury to the physical development of the boys, through their labour in the mines, *Atkinson* 2706-2708.

Conclusion as to those employed in mines being less healthy than those employed in agricultural pursuits, *Sandford* 9741-9746.

Particulars relative to the health and physical condition of the men and boys in various collieries in Northumberland; conclusion as to their employment not being injurious, *Davidson* 10439 *et seq.*—Healthy condition of the colliery boys about Wigan, *Gilroy* 10594. 10638-10645. 10671. 10673. 10686. 10687; *Hewlett* 11259—Good physical condition of the boys in the north of England, *Broadbent* 11072, 11073.

Good health of the boys in the mines in witness's district, *Knowles* 11532—Healthy condition of the boys in Staffordshire, the labour not having any injurious effect upon their physical condition, *Mathews* 12204-12206—Good physical condition of the boys adverted to, in connection with their rate of wages and mode of employment, *ib.* 12250-12252—Absence of injury to the health of boys in the well-ventilated mines; very injurious effect when the ventilation is bad, *Hood* 13330-13333.

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BOYS—I. As under existing Regulations—continued.

5. Rate of Wages :

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Amount of earnings of boys of different ages in the mines at Kearsley ; interest of the men therein, *Ackersley* 2593-2602. 2653-2656—Rule for the parents to receive and to keep the earnings of their boys who may be working with them, *ib.* 2632-2638—The earnings vary from 6d. to 1s. 6d. a day in the Shropshire mines, *Onions* 5696, 5697—Probability of the same wages being expected if boys worked only eight hours instead of twelve, *Parker* 6124, 6125—The wages are little enough already, *ib.* 6125.

Particulars as to the age at which witness's boys have entered the pits, and as to the wages earned ; that is in South Wales, *Griffiths* 6414-6449—Advantage in boys working under their parents, *ib.* 6450-6456—Varying wages of the boys employed by the masters in Scotland, the door boys getting about 1s. a day, *M. Donald* 6855-6864—Earnings of the boys from 10d. to 2s. a day in South Yorkshire, *Jeffcock* 11750.

II. As under Increased Restrictions :

1. Limits proposed as to the Age of Employment and Hours of Labour :

Opinion that it would be better if boys were not allowed to go into the mines before twelve or fourteen years of age ; witness would prefer the latter limit, though parents generally might object, *Burt* 14-16. 35-40. 105-117. 174-177. 187, 188—Equal efficiency at the age of twenty of those who enter the mines at the age of fourteen as of those who begin at the age of ten, *ib.* 163, 164. 209, 210—Suggestion that children might work only on alternate days, or for only eight hours daily, so as to have time for education, and that they should not be allowed to enter the mines until twelve years of age, *Crawford* 458-471. 488, 489. 521-525—Expediency of boys not going into the mines at all until twelve or thirteen years of age, *P. Dickinson* 763-772.

Suggestion that whether a boy had been educated or not before employment at twelve years of age, the hours of labour should be only eight hours daily between twelve and fourteen years of age, and ten hours a week at school should be insisted on, *Bazendale* 1222-1234—Restrictions proposed in order to carry into effect the suggestions of witness in regard to the age of employment and the education of boys ; increased staff of inspectors necessary for the purpose, *ib.* 1255-1260—Witness proposes that between the age of twelve and fourteen boys should be only eight hours in the mine, including the time required for meals, *ib.* 1275-1279—Question as to there being any restriction upon the age of employment of boys in other trades, besides cotton factories and coal mines, *ib.* 1299-1304—Advantage rather than disadvantage to the employers by shortening the hours of the boys in the pit, *ib.* 1319-1323.

Opinion that boys should be prohibited from entering mines until they are twelve years old, even though they could read and write, *Pickard* 1606-1608—Suggestion that between twelve and fourteen years of age the work should be limited to eight hours daily, and that there should be two hours a day at school for five days in the week, *ib.* 1608-1610—Efficient and steady workmen to be formed by boys if they do not enter the mines until they are twelve years old, *ib.* 2236-2239.

Concurrence in the view that boys under twelve should not be allowed to work in the mines at all, *Ackersley* 2512-2515. 2625-2627—From twelve to fifteen years of age the work should be limited to eight hours daily, *ib.* 2571-2573—Suggestion that boys be not allowed to enter the mines at all till they are twelve years old, and that from twelve to fourteen they work for only eight hours a day, *Normansell* 3048-3050—Witness concurs in the opinion that boys should be excluded from mines until they are twelve years old, *Mottershaw* 3743—Between twelve and fourteen they should work for only eight hours a day, *ib.* 3744.

Concurrence in the suggestion that up to fourteen years of age the boys should work only eight hours, *Booth* 4442-4444 ; *Wilkins* 4698 ; *Hall* 4999-5040 ; *Millward* 5184, 5185. 5227-5235—Advantage if boys were entirely excluded from collieries until the age of twelve, *Owen* 5474. 5645-5651—Suggestion that boys should not work till twelve years, and should work for only eight hours a day between twelve and fourteen, in order to make provision for education, *ib.* 5531. 5532—Expediency of boys working only eight hours daily, so as to have facilities for education, *Onions* 5968—Concurrence in the opinion that boys under fourteen should not work for more than eight hours daily ; consideration of sundry objections to this proposal, *Griffiths* 6393 *et seq.*

Boys—II. As under Increased Restrictions—continued.**1. Limits proposed as to the Age, &c.—continued.**

Suggestion that up to the age of fourteen boys should work only eight hours a day, *McDonald* 6825, 6826—They should not be admitted to the mines at all until twelve years old, *ib.* 6827.

Grounds for the opinion that no boys should be employed underground until they are twelve years old, and are able to read and write, *Moore* 7772-7775. 7787. 7792, 7793. 7806-7811. 7815. 7833. 7838-7848—Further statement in favour of excluding boys from mines until twelve years old, as otherwise they labour under peculiar difficulties in obtaining any education, *ib.* 8249-8254.

Evidence to the effect that it is very desirable that boys should not go into the mines under twelve years of age, or for as long as twelve hours daily, but that there are obstacles and objections to legislative restrictions on the subject, *Atkinson* 8661-8711—Advantage of less than twelve hours labour up to the age of eighteen, *ib.* 8703-8705.

Doubt whether boys not commencing work till fourteen years old are any less efficient subsequently as hewers, *Sandford* 9651-9656, 9699, 9700—Suggestions as to the age of employment and the hours of labour, and as to the adoption of a system of half time, or of labour on alternate days, *ib.* 9723 *et seq.*—Uncertainty of the amount of full work in collieries adverted to as not presenting any serious difficulties in the way of half time for the boys, on the score of wages, *ib.* 9764-9778. 9794-9798.

Approval on the whole of a prohibition upon the employment of boys under twelve in mines, in order to facilitate education, *Forster* 9936-9939. 9985-9993. 10004.

2. Views of Working Miners upon the Question of increased Restrictions :

Question considered whether it is not in the power of the men to put a stop to the employment of boys under twelve years of age who cannot read and write, *Barendale* 1235-1258—Expected approval by the more sensible colliers of a prohibition upon the employment of children before the age of twelve, *Pickard* 1609-1615—Question considered whether the men could not enforce the existing provisions of the law in regard to the employment of children, if they were anxious to limit the age and to promote education, *ib.* 1627-1632. 1648-1653—Necessity of strict regulations, or the men will continue to send their children into the mines, to the neglect of their education, *ib.* 1703-1709.

Objection to the boys being twelve hours in the pit, the working colliers, however, raising no such objection on their own account, *Achersley* 2539-2551—Pecuniary motives by which miners are actuated in allowing their children to work before they are twelve years of age; improvement, however, of late years, education being more attended to, *ib.* 2550, 2551. 2559-2564—Obstacles to the men uniting in support of restricting the boys' labour to eight hours daily, though they were successful in obtaining a limitation of their own labour, *ib.* 3141-3148.

General feeling of the men that boys under fourteen years of age should only work for eight hours a day, *Cartlidge* 4068-4070—Feeling in witness's district that boys under fourteen should not work for more than eight hours daily, *Parker* 6065—Expediency of legislation, though it is in the power of the parents to shorten their boys' labour, *Griffiths* 6457-6485.

Constant pressure on the part of miners for the employment of their boys under the age of twelve; unpopularity of the Act in this respect, *J. Dickinson* 7302-7308. 7334-7403—Feeling generally of the Scotch masters in favour of not employing boys under twelve, the men being for the most part favourable to such employment, *Moore* 7793. 7816-7832. 7847-7853—Very rare complaints by the men as to the employment of children contrary to the Act, in Scotland, *ib.* 8226, 8227—Course pursued by witness in the event of the employment of boys in violation of the Act; blame attributable to the men instead of to the masters, on this point, *ib.* 8231-8239.

Feeling of the better class of workmen in Durham in favour of limiting the age and the hours of labour of boys, *Atkinson* 8668-8671. 8679, 8680—Great desire on the part of many of the workmen to take their children into the mines at an earlier age than twelve, *Evans* 8983-8987. 9062—Feeling of the better class of parents in favour of restrictions upon the age of employment, with a view to better education, *Sandford* 9674-9676—The parents would not at all like a prohibition upon employment until the age of twelve, *Forster* 9939.

Objection by the men rather than by the masters to a prohibition upon employment under twelve, *Potter* 10224—Feeling among the Wigan workmen as to the hardship of a prohibition upon the employment of boys under twelve; inexpediency of any such restriction, *Gilroy* 10592-10597—Feeling of owners against the employment of boys under twelve, though involving instances of hardship as regards the parents, *ib.* 10620. 10692-10703.

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BOYS—II. *As under Increased Restrictions*—continued.

2. Views of Working Miners, &c.—continued.

Instance of falsification of a certificate by a miner in order to obtain the employment of his boy at an early age; this matter is now in the inspector's hands, *Hewlett* 11253, 11254, 11274, 11283-11288—Further restrictions would be very unpopular with the men, *ib.*, 11257, 11258—Responsibility of the men and not of the masters for the early age at which the former sometimes take their boys into the mines in Scotland, *Burns* 13631, 13632.

3. Effect of further Restrictions as regards Diversion of Mining Labour :

Probability of some miners' boys being sent into other trades if excluded from the mines till twelve years old, *Burt* 174-177; *Normansell* 3070-3072—Conclusion that exclusion from mines up to the age of twelve would not cause miners' children to be sent into factories, *Ackersley* 2537, 2538, 2563-2570, 2590-2592, 2601-2606, 2628-2631, 2644, 2645—Tendency of the requirement of the education certificate to divert miners' children to other trades, *J. Dickinson* 7401, 7402—Improbability of the proposed educational requirements diverting labour from the mines, *Sandford*, 9748-9750, 9807-6814—Doubt as to the boys being sent into factories in the Wigan district, *Gilroy* 10621-10625.

Objection to a prohibition upon the employment of boys under twelve in mines, as tending to divert labour to other trades, to the detriment of collieries; the case would be different if the same restriction applied to all other trades, *Knowles* 11526-11534, 11549-11553, 11557-11560—Expected diversion of labour from mines, if there are further restrictions as to the age of employment, *Mathews* 12253, 12352-12354—Diversion of miners' children into other trades, if they were excluded from mines until twelve years of age, *Woodhouse* 12806-12809—Effect of the Act of 1860 in diverting the labour of miners' children to other pursuits, *Baker* 14500, 14501.

4. Effect as regards the Price of Coal :

Question considered whether an increase in the price of coal would not result from limiting the labour of the boys to eight hours daily, *Parker* 6126-6133—Decreased produce and increased cost of coal, if boys worked only eight hours a day till the age of fourteen, *Forster* 9940, 9941, 9967-9971.

5. Effect as regards the Hours of Labour of the Men; Question hereon of a System of Relays of Boys :

Necessary curtailment of the hours of the men, if the boys are to be only eight hours in the pit; that is, unless there were relays of boys, *Baxendale* 1280-1284—Character of the work on which the boys are engaged; difficulty hereon as regards the hours of labour of the men, if the boys' hours were shortened, *Ackersley* 2574-2589, 2619-2621, 2646-2652—Statement to the effect that in South Yorkshire no insuperable difficulty would be experienced as regards the labour of the men, if the labour of the boys up to fourteen years of age were restricted to eight hours a day, *Normansell* 3061-3066, 3080-3117, 3149, 3150—Consideration as to the means of preventing interference with the labour of the men, if the boys worked for only eight hours, *Booth* 4445-4486.

Means of shortening the labour of the boys, without interfering with the hours of the men, *Wilkins* 4699-4705—With regard to the recommendation that between the ages of twelve and fourteen, boys should work only eight hours, this need not prevent the men working for longer hours, *Millward* 5184, 5185, 5227-5237—Examination whether difficulty would not be experienced in supplying double the present number of boys in the Durham collieries, if the hours were limited, so that two shifts of boys were required, *Parker* 6096-6110—Means of the men in South Wales for working the same number of hours as at present, if the boys' labour were curtailed, *Griffiths* 6393-6404.

Obstacles to a system of relays of boys; increased danger thereby; *J. Dickinson* 7392, 7393, 7398; *Moore* 7777-7786, 7794-7801, 7804, 7805, 7812-7814—Concurrence in the view as to the difficulty and danger of having relays of boys, if the hours were limited, *Atkinson* 8662-8667, 8687-8692, 8695-8702; *Evans* 9027, 9028, 9034.

Impression that as the hours of labour are shortened, and as pits are improved, the supply of labour will not be any great difficulty, *Sandford* 9657, 9658—Doubt as to the system of relays of boys being impracticable in collieries, *ib.* 9788-9793, 9799-9803, 9806.

Evidence to the effect that the supply of mining labour in Northumberland and Durham would be altogether inadequate, if there were relays of boys, or if boys worked only on alternate days; objections also on other grounds to this proposition, *Forster* 9942-9944, 9947-9955, 9963-9971, 9976-9982, 10011-10015, 10101-10117—Much longer hours of the boys than of the men in Northumberland and Durham, there being two shifts of men daily; obstacles to any limitation of the boys' labour, or to having only one set of men for nine or ten hours, *ib.* 9963-9971, 10025-10055, 10104-10107.

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5. Effect as regards the Hours of Labour, &c.—continued.

Statement as to the great scarcity of boys in witness's district, so that it would be impracticable to have relays of boys in the mines, *Potter* 10257-10265. 10286-10288—Great demand for the labour of boys in the Durham mines, so that their non-employment under the age of twelve, would be a great inconvenience, *Taylor* 10332-10335. 10364-10367—Entire impracticability of relays of boys in Durham, *ib.* 10338, 10339—Danger and inconvenience of a system of relays of boys, *Taylor* 10339; *Daglish* 10413, 10414—Very inadequate supply of boys for the Durham mines, if the hours of labour were shortened, *Daglish* 10409-10412.

Scarcity of boys' labour in the Wigan district, *Gilroy* 10600-10602. 10637. 10656, 10657—Practical difficulties in the way of employing two sets of boys, or of working them on alternate days, *ib.* 10631, 10632—Obstacles to working the mines in Oldham district by relays of boys working half time, or on alternate days, *Booth* 11423-11440. 11468-11472—Impediments to a system of relays of boys, or of half time, *Knowles* 11528-11530. 11546-11548.

Great inconvenience if boys worked for only eight hours up to the age of fourteen; difficulty and danger involved in a system of relays of boys, *Jeffcock* 11713-11722. 11738, 11739. 11747, 11748—Obstacles to a double set of boys in witness's district, or in the mines generally, *Chambers* 12113, 12114—Necessity of the boys in witness's mines working two hours longer than the men, *ib.* 12115-12118. 12122-12133—Impracticability of a system of relays of boys in Staffordshire, *Mathews* 12213-12215—Obstruction to the working of collieries, if boys were entirely excluded from mines until twelve years of age, or if their hours of labour were considerably shortened, *Hood* 13325-13329.

6. Objections generally to the proposed Restrictions :

Disapproval of any extension of the present restrictions as to the age or hours of labour of boys; several grounds for this conclusion, *J. Dickinson* 7310-7334. 7358-7363. 7385-7409. 7433, 7434—Importance of the practical training of the boys under their parents at an early age, *ib.* 7359-7362. 7405-7409—Objection to class legislation or to special restrictions as regards boys in collieries, *ib.* 7399, 7400.

Objection to any interference with the hours of labour of boys, witness being favourable, however, to a prohibition upon employment under the age of twelve, *Moore* 7776. 7787.

Dissent from the proposal of Mr. Moore that boys under twelve should be entirely prohibited from work in mines; great unpopularity of such prohibition, *J. Dickinson* 8360-8362.

Evidence in approval of the operation of the Act of 1860 in South Wales and the Midland Counties as practically preventing the employment of boys under twelve years of age; hardship in some cases of an absolute prohibition below that age, *Evans* 9002 *et seq.*—Obstacles to a limitation of the hours of labour to eight hours daily until the boys are fourteen years old, *Gilroy* 10634-10637. 10724. 10726. 10775-10777—Approval of the law being kept as it is in regard to boys, though witness doubts whether the Act of 1860 has done much good in this respect, *ib.* 10689-10697. 10759. 10760.

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See also *Arley Mine.* *Coneygree Colliery.* *Education.* *Factories and Factory Act.* *Legislation.* *Pony Drivers.* *Roman Catholic Children.* *Shotts Iron and Coal Works.* *Snibston Colliery.* *Stafford Colliery.* *Stanley Colliery.* *Wingerworth Colliery.*

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Brancepeth Colliery (Durham). Liability of the men at this colliery to dismissal, in the event of their making complaint to the inspector, *Parker* 6288—Reference to a strike at Brancepeth Colliery, which resulted in the men being paid by weight instead of by measure, *ib.* 6333, 6334, 6343-6345.

Brattices. Instances of danger in connection with the brattices, though not in the mine where witness is now at work, *P. Dickinson* 857-871, 878-881—Particulars on the subject of brattice-cloths in aid of ventilation in the more advanced or distant workings; danger arising from this practice, *Pickard* 1956-1965, 2004, 2005, 2049-2056, 2061-2064—Frequent insufficiency of air through brattices not being put up on account of the expense, *Normansell* 3444.

Advantage in the miner putting up a brattice, rather than waiting for the firemen to do so, or complaining to the viewer on the subject, *Mottershaw* 3932-3950, 3954—Defect in some mines in Cheshire, in the bratticing being neglected; injury to health from this cause, *Booth* 4505-4518—Deficiency of ventilation in Scotch mines through the bratticing not being properly attended to, *M'Donald* 6960-6965, 7063-7067.

Representations frequently being made by witness as to the brattices, air courses, &c., his recommendations being almost invariably adopted, *J. Dickinson* 7532-7537.

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Breach of Contract. Power respectively of the master and of the men in cases of breach of contract on either side, *Normansell* 3659-3662—Objections to criminal punishment of the men under the Act 4 Geo. 4, and the Act of 1860, for breach of contract, *J. Dickinson* 8322-8349.

Broudbent, Samuel William. (Analysis of his Evidence.)—Has been surgeon to the South Hetton and Murton Collieries for sixteen years; is also medical officer to the Easington Poor Law Union and Workhouse, 11064-11068.—Occurrence of only one fatal accident last year in the above collieries, among 1,200 workpeople, 11069—Number of boys employed in the mines in witness's district, very few being under twelve years of age, 11069-11071, 11074-11077—Good physical condition of the boys, 11072, 11073—Statistics showing the longevity of colliers, 11078, 11079, 11119, 11120.

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Bryn Moss Colliery. Neglect of duty by a fireman which led to an accident in the Bryn Moss Colliery, *Pickard* 1961, 1973-1983—Risk incurred in not resorting to the use of the Davy lamp in the case of the Bryn Moss Mine, *ib.* 1984-1986, 1990-1992—Neglect of certain suggestions made by the Government inspector before the explosion occurred, *ib.* 1986-1989—Deficiency of ventilation in the mine when examined by witness after the explosion, *ib.* 1993-1998.

Burns, William. (Analysis of his Evidence.)—Solicitor at Glasgow; is Secretary to the Mine Owners Association of Scotland, and a member of the executive committee, 13429-13431—Explanatory statement relative to the first case of prosecution against masters under the Mines Inspection Act in Scotland, showing that after considerable litigation it was finally decided that the Procurator Fiscal might sue, but that the criminal form of procedure was not the right form, 13432-13448, 13450—Decision also in the case of the Procurator Fiscal against Pantou, owner, for alleged violation of a certain rule, that the Procurator Fiscal was fully competent to sue for the penalty, on behalf of the workmen, 13448, 13449, 13458, 13459.

Conclusion as to its being a misconception on the part of Mr. M'Donald that the Mines Inspection Act is inoperative in Scotland, the workmen having really a legal right to sue for penalties through the Procurator Fiscal, 13451-13476—Civil offence involved in the infraction of the provisions of the Act by the master, whereas infraction by the workman is a criminal offence, inasmuch as imprisonment may follow, 13451-13459, 13462-13466, 13471, 13472—Inability of a workman in Scotland to sue for penalties unless he can prove he has been personally injured by violation of the law, 13473-13476.

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Expediency of a general rule prescribing obedience in the workmen, if the special rule on the subject be considered to go too far, 13555, 13556—Opportunity of the workmen to object to the special rules before adoption, it not being customary in Scotland directly to consult them on the subject, 13559-13562—Further statement in support of the view that the obligations in special rule No. 3 relative to disobedience, have reference to and are governed by the general law, 13573-13578.

Argument in explanation and support of the restriction in general rule No. 1, as to masters being liable for accidents through defective ventilation "under ordinary circumstances"; several cases cited in order to show the propriety of retaining this rule without alteration, 13579-13614—Inexpediency of masters being held responsible for acts beyond their control; illustrations in support of this view, as applied to mines, *ib.*

Explanation of the practice in Scotland by which inquiries into accidents in mines are conducted by the Lord Advocate or his deputies, there being no coroner's inquest on such occasions, 13615-13620—There is no trial before a jury except in criminal cases, 13620-13622—Means of Scotch miners for instituting proceedings for penalties in the event of the Procurator Fiscal declining to act, 13623-13630.

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Statement showing that out of thirty-three decided cases in the Scotch courts in the last ten years, arising out of pit accidents, the parties injured were blameable in eighteen cases, whilst in only eight cases the masters or agents were found liable for damages, 13639-13655—Selection of the juries in mining cases in the same way as in all other cases, 13656-13659.

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Explanation relative to the law of arrestment in Scotland, as operating in encouraging the establishment of stores, or "truck-shops" so termed, 13676-13682—Error in designating the stores as truck-shops, 13676. 13684—The law of arrestment does not in any way relieve the masters from liability for infringement of the Truck Act, 13681, 13682—Stringency of the provisions of the Truck Act; conclusion that these are not violated by the system of stores, 13682-13716.

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education in connection with mines in Lanark, Ayr, and Renfrew at the time of the Mines Inspection Act; witness will bring this information down to the present time, and submit it to the Committee, 13722-13733.

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Opinion that it would be better if boys were not allowed to go into the mines before twelve or fourteen years of age; witness would prefer the latter limit, though parents generally might object, 14-16. 35-40. 105-117. 174-177. 187, 188.—Wages of the children adverted to with reference to the advantage gained by the parents in sending them to work at the age of ten, 17-23. 96-110.—Belief as to the inoperativeness in witness's district of the regulation relative to children under the age of twelve being allowed to attend school twice a week for three hours a day, 24-34. 41-46. 111-114.

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Butty System. Explanation relative to the practice of working the coals in Staffordshire by contracts between the men and butties, the latter contracting with the masters, *Millward* 5318-5326. 5331-5336. 5353-5358—Particulars relative to the supply of drink to the men by the butties, many of whom keep public-houses; great evil arising from this practice, *ib.* 5338-5352. 5359-5375.

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Wages of about 3 *s.* 3 *d.* or 3 *s.* 6 *d.* a day under the butty system, in Shropshire, *Onions* 5919-5921—Evidence explanatory of the system of butties, or charter masters, and of witness's objections to the operation of butties between the masters and the men, *ib.* 5922 *et seq.* 6022-6031—Witness has no complaint to make in regard to weighing, or in regard to truck, under the butty system, *ib.* 5922-5928—Payment of the men fortnightly by the butties, *ib.* 5929, 5939. 5939-5942—Fixed price by which the men are paid by the butties for getting coal or ironstone; this, however, is liable to variation with the rise or fall in the value of iron or coal, *ib.* 5981-5995. 6019-6021.

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Cages. The cages for raising and lowering the men in the shafts should be made secure by covers overhead, *Achersley* 2744—Suggestion that covers over the cages should be compulsory, *Mottershaw* 4005-4007; *M' Donald* 7031-7034—Advantage if White & Grant's safety cage were adopted in all mines, *M' Donald* 7051-7054—Advantage of the intended use of safety catches in witness's district; objection to their use being enforced generally, *J. Dickinson* 7673-7677. 7684. 7694-7697—Objection to disconnecting hooks attached to the cages, *ib.* 7678-7680—Practice of witness in requiring the cages to be covered, *ib.* 7681, 7682.

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Capital. Action of witness in causing better attention to ventilation in the mines of small capitalists, *Pickard* 2039-2042—Possibility of there being increased need for inspection in collieries held by men of small capital, where the management is not the best; witness is not conversant with any of these, *Mathews* 12396-12399.

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Cartidge, Samuel. (Analysis of his Evidence.)—Has been a working collier for about twenty-six years; is prepared to speak on behalf of the miners in North Derbyshire, but has not worked in that district for more than twelve months, 4029-4042. 5159-4165—Information relative to the number, age, and state of education of the boys in the Wingerworth Colliery, near Clay Cross, where witness has recently been at work, 4043-4055—Employment in this colliery of several boys under twelve years of age, without any certificate being ever asked for, 4047-4050. 4075-4083. 4110-4112.

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Average wages of the men and boys at Wingerworth Colliery, 4092-4095. 4126-4188
—Rate of wages at Clay Cross Colliery, some men working by the day and some by the piece, 4095-4097—Importance of the Act of 1860 being enforced in regard to the opportunity to be given for education, 4112-4116—Way in which in Wingerworth Colliery the work is divided or arranged between the boys and the men, 4117-4123.

Defective ventilation in Wingerworth Colliery and in the North Derbyshire district generally, through the air courses becoming obstructed and not being kept sufficiently large, 4139-4152—Good grounds for the reluctance of the men to complain to the owners or viewers relative to defects in the ventilation or working of the mines, 4153-4158. 4166-4170. 4174. 4175—Satisfactory management generally of Wingerworth Mine, except that the air ways are not properly kept, 4171-4173.

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Insufficiency of the inspection in Derbyshire, it being desirable that every mine should be inspected every two or three months, 4236-4247—Complaint as to the system in regard to weight at the Clay Cross Collieries, and as to the practice in regard to forfeitures for dirt, &c., 4249-4318—Expediency of the check weighman being allowed to interfere with respect to forfeitures for dirt as well as in the matter of weight, 4270-4278. 4285-4288. 4307-4318—Illustration of the expediency of an impartial inspection of the weights and machines, 4280-4284. 4292-4306.

Explanation of the circumstances under which witness recently left the Wingerworth Colliery, 4319-4321—Complaint as to the men being required to pay 1 s. a fortnight to the club fund, which is managed by the owners; profit made by the masters out of this fund, 4322-4356—Opinion that there should be no compulsory payment required of the men in respect of any fund or club; question hereon whether the workmen are not aware of this payment when engaging with the masters, 4325-4343.

Cartlidge, S. Witness explains the circumstances under which Samuel Cartlidge was for a short time in witness's employment; he left without being discharged, *Ward* 12614-12622—Statement as to Cartlidge not having been authorised by the men in the district to give evidence on their behalf, *ib.* 12641-12644. 12723.

Explanation as to the circumstances under which the witness Cartlidge was selected to represent the Derbyshire miners before the Committee, *Normansell* 12792-12795.

Cassop Colliery (Durham). Deficiency in the ventilation of Cassop Colliery in 1864, through the bratticing not having been attended to; improved arrangements since introduced, *Atkinson* 8746, 8747. 8754-8757. 8762-8765.

Chambers, John. (Analysis of his Evidence.)—Is managing partner in the firm of Newton, Chambers & Co., at the Thorncliffe Coal and Iron Works, near Sheffield, employing a large number of workmen, 11920-11926—Adoption of payment by weight at all the pits of witness's firm, 11927—Loss of about 10,000 tons a year when the firm paid by measure, whereas the loss is now reduced to from 2,000 to 3,000 tons; particulars hereon, with reference more especially to the amount of dirt sent up by the men under each system, 11928-11977—Reduction recently from 56 lbs. to 28 lbs. in the quantity of dirt per ton sent up by the men, the check-weighman having made representations to the men on the subject, 11930-11933. 11953-11955. 11973-11977.

Approval of an independent inspection of the weights and machines, 11938-11940—Inexpediency of legislative prohibition upon payment by measure where measure is the custom of the district, 11942-11945—Objection to the check-weighman being appointed by the men except from the mine of the owner in each case, and subject to notice of dismissal by the owner, 11945-11950. 11978-11986—Less liability to loss from dirt by weighing than by measuring, 11951-11972—Several objections to weekly payments as compared with fortnightly payments, more especially in large collieries, 11987-11996. 12050. 12068-12071.

Information relative to the wages of different classes of workmen at witness's collieries; statement that some hewers have been earning as much as 10 s., 12 s., and 14 s. a day of eight hours, 11997-12049—Peculiarly large earnings of a number of witness's men at the time when they were called upon by the unionists' executive in Barnsley to strike for an advance of five per cent., 12008-12015. 12036-12040. 12093-12101—Earnings of some unskilled workmen at the rate of 8 s., 9 s., and 10 s. per day of eight hours, 12015, 12016. 12026-12028—Explanation that the hewers or butties earning up to 14 s. a day, generally employ two or three assistants, who earn only 5 s. a day, or thereabouts, 12031-12035. 12042-12049. 12054-12067. 12072-12079.

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Unobjectionable character of the employment of some women at ironstone pits of witness's firm, 12134-12136—Decided objection to sub-inspectors, 12137, 12138—Carelessness of the men, to which the majority of accidents are owing, 12139. 12145—Dissent from the view that explosions are sometimes owing to want of moral courage in managers to insist upon improvements, 12140, 12141—Interest of owners to carry out all improvements suggested by their managers or viewers, 12142-1244. 12157, 12158.

Practice at witness's collieries in regard to setting and removing the props, and supplying timber to the men, 12145-12156. 12159-12167—Expediency of owners appointing their own officers, irrespectively of a scientific examination, 12168, 12169—Approval of the present constitution of coroners' juries, 12170—Extensive use of the Clanny lamp by witness's firm; it gives an excellent light, 12171-12175.

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Check Weighmen. See *Measuring System.* *Weighing System.*

Children, Employment of. See *Boys.*

Choke-damp. See *Black-damp.*

Cinder Hill Colliery (Notts.). Satisfactory ventilation in the pit at Cinder Hill, where witness works, *Wilkins* 4709-4712. 4771—Distance of nearly two miles from the foot of the shaft of the Cinder Hill Colliery to the furthest portions, there being four shafts altogether, *ib.* 4766-4771—Details relative to the system of weighing at the Cinder Hill Colliery; complaint as to the deductions and forfeitures made on the part of the owners on various grounds, *ib.* 4772 *et seq.*—Desire on the part of the men to be paid weekly; unwillingness of the owner to accede to this request, *ib.* 4926-4930.

Witness worked for a short time recently at Cinder Hill, in Nottinghamshire, but lost his employment there through having joined a union; particulars hereon, *Hall* 4937-4941. 4977-4989—Dispute at Cinder Hill Colliery upon the question of weekly payments, which partly led to the non-employment of witness, *ib.* 4979-4989.

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Doors and Doorkeepers. Suggestion that wherever hurriers pass through a door there should be a doorkeeper, *Normansell* 3635-4639—Instances of collieries well ventilated without the use of doors, *Mottershaw* 3783-3788—Particulars in connection with an accident or explosion at the colliery of Messrs. Pope & Pearson in the Wakefield district in 1860, doors not having been used in this mine, *ib.* 3787-3797. 3815-3820—Expense involved in the system of ventilation by means of doors, *ib.* 3859, 3860—Object of doors to admit of the corves going the nearest way to the shaft, and to propel the air through the workings, *ib.* 3879-3882. 3889—Absence of necessity for doorkeepers where there are proper swing doors, *ib.* 3977-3980.

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Dukinfield Mine Explosion. Lapse of about two years between witness's first visit to the mine at Dukinfield and the date of the late accident there, *Wynne* 14258-14263—Detailed inspection of this pit after the accident; grounds for concluding that had witness made an inspection shortly before the accident his attention would not have been drawn to the accumulation of gas in the disused workings which caused the explosion, *ib.* 14264-14292. 14308-1435—Very good jury in the case of the inquiry in the Dukinfield accident, *ib.* 14411-14415—See also *Astley Pit*.

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E D U C A T I O N :

1. *As to the Requirement of Education Certificates in the Case of Boys under Twelve Years of Age.*
2. *As to the Attendance at School after Employment in the Mines, and as to the Obstacles thereto.*
3. *State of Education of Children in Mines, and of the Mining Population generally.*
4. *Particulars relative to the Provision and Conduct of Schools in Connection with Mines.*
5. *Several Advantages of improved Education in Miners.*
6. *Suggestions for increased Facilities for Education.*

1. *As to the Requirement of Education Certificates in the case of Boys under Twelve Years of Age :*

Instance of only one colliery in witness's district where certificates are required as to the children between ten and twelve knowing how to read and write, *Crawford* 440-444—Inadequacy of the requirement in regard to the standard of education provided for by the certificate, *ib.* 455-484-457—Very general violation of the rule as to the age of employment of children, and the requirement of a certificate, in the Wigan district, *Pickard* 1602-1604—Suggestion, that it be compulsory upon children to obtain a certificate of education before employment, *ib.* 1633-1647—Increased attention now being paid to the requirement of a certificate of education in the case of boys under twelve years of age in the Wigan mines, *ib.* 2225, 2226—Employment of some boys under twelve years of age in the coal and stone mines about Bilston who cannot read or write, *Owen* 5458-5463.

Impulse to education by the provisions in the Act of 1860, relative to certificates when the boys are under twelve years of age; hardship in some of these cases, *Dickinson* 7294-7298—Mode of action of witness when informed that boys under twelve are employed without certificates, *ib.* 7295-7298. 7353-7346—General requirement of certificates in witness's district, *ib.* 7309—Non-requirement by the Act of any further school attendance if a boy at the age of ten has a certificate that he can read and write, *ib.* 7363, 7364—Duty of the owners to ask for the certificate, *ib.* 7365, 7366.

Practice in some cases in Durham for the agents to see that the boys can read and write, without requiring a certificate to that effect, *Atkinson* 8650-8658—Compliance with the educational requirements of the Act of 1860 at Seaton Delaval, and at the collieries generally in Northumberland and Durham, *Forster* 9927-9931. 9945, 9946.

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Objection to any restriction on the requirement of any education certificate at the age of twelve, *Mathews* 12296-12270—Fault of the parents rather than of the managers that the present certificate is often evaded, *ib.* 12270-12272—Probability of the inadequate inspection staff military against the requirement of the Act of 1860 in relation to education certificates, *Woodhouse* 12913-12916—Very little good effected in witness's district by the education requirements of the Act of 1860, *Baker* 14499-14502.

2. *As to the Attendance at School after Employment in the Mines, and as to the Obstacles thereto :*

Extremely deficient education of the children on entering the mines, whilst their long hours of labour preclude their deriving subsequent benefit from the schools, *Burt* 8-13. 24-48. 127-185; *Crawford* 445-454. 480-483—Difficulty as to attendance at night schools on account of the long hours of labour, and the consequent fatigue, *Burt* 12. 47, 48. 127-135—Belief as to the inoperativeness in witness's district of the regulation relative to children under the age of twelve being allowed to attend school twice a week for three hours a day, *ib.* 24-34. 41-46. 111-114.

Physical impossibility of satisfactory attendance at night schools, on account of the long hours of labour, *Crawford* 454. 480-483; *P. Dickinson* 732-734—Witness does not know any mine where the children attend school three hours a day for two days in the week, *Crawford* 456, 457—Unfitness of the boys to attend night schools when employed from an early hour in the morning in a mine, *Barendale* 1338-1344; *Pickard* 1605. 1638-1640. 1671-1675.

Fatigue of the boys under twelve years of age on going to school twice a week after working about six hours on those days, and twelve hours on other days, *Ackersley* 2487-2511—Character of the attendance of the boys at school in the South Yorkshire district,

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2. *As to the Attendance at School after Employment in the Mines, &c.*—cont^d.

district, those above twelve attending very rarely, *Normansell* 3041-3049—Importance of the Act of 1860 being enforced in regard to the opportunity to be given for education, *Cartledge* 4112-4116—Illustration in witness's case of the impediments to education after entering the pits at an early age, *Owen* 5524-5530—Exhausted state of the boys after work, so that they cannot attend night schools, *Onions* 5693-5695.

Improvement, if the boys attended school for two hours three days a week, instead of for three hours two days a week, *J. Dickinson* 7390, 7391, 7437—Great impediment to the education of boys under twelve, on account of their labour in the mines, *Moore* 7766-7772, 7806-7111, 7838-7848—Opportunities of boys for school attendance if they work only nine or ten hours a day, *Evans* 9038-9042.

Attendance chiefly of the more educated class of boys at the night schools, the long hours of labour being a great obstacle, *Sandford* 9659-9663, 9670, 9671—Different effect of the night schools, accordingly as the boys have already received education, *ib.* 9686-9689—Inconvenience of boys attending school three hours a day after working eight hours, *ib.* 9737, 9738.

Approval of the boys being required to attend school for a certain time in the week, *Forster* 10005-10010—Good attendance of the night schools in winter, but not in summer, *Davidson* 10461-10464—Practice in witness's collieries not only to require education certificates in the case of boys between ten and twelve, but to make it a condition that such boys continue to attend school, *Knowles* 11520-11525, 11543, 11544.

Disinclination of boys on leaving work to attend school, though not from fatigue, *Mathews* 12347, 12348—Equal difficulty in enforcing three hours at school twice a week, or two hours three times a week, *ib.* 12349-12351—Unwillingness of the boys to attend school, except the Sunday schools, *Ward* 12633-12635—Grounds for objecting to boys under twelve being obliged to attend school for so many hours a week, *ib.* 12645-12650.

Table showing the per-centage of scholars over ten years of age at several schools in the South Staffordshire Mining District, in 1862-63, and in 1865-66, *App.* 539.

3. *State of Education of Children in Mines, and of the Mining Population generally:*

Deficient education of the children when they commence to work at ten years of age, whilst there is afterwards but little facility or opportunity for education, *Burt* 8-13, 24-48, 127-185; *Crawford* 445-454, 480-483—Neglect generally of the means of education when the age of seventeen or eighteen is arrived at, gambling and drinking being then largely indulged in, *Burt* 165-173, 178-181, 211, 212.

Circumstance of young boys unable to read or write being largely employed by the men in the Wigan district; difficulty as to the latter exercising an effectual check in the interests of education, *P. Dickinson* 692-697, 711-734—The majority of the boys in the mines about Wigan cannot read or write, *ib.* 704, 705—Very little use made of the schools in witness's neighbourhood by the colliery boys, *ib.* 728-734—Improved education on the whole in the Wigan district, the Sunday schools operating very beneficially, *Pickard* 2192-2203, 2272-2274.

Beneficial operation of the Act of 1860, as regards the age and education of boys in the mines at Kearsley near Bolton, *Ackersley* 2446-2453, 2553-2558, 2623, 2624—Great improvement since the Act of 1860 in the state of education of the boys between ten and twelve in South Workshire, *Normansell* 3027, 3028, 3041-3043, 3070—Exceedingly uneducated state of the boys in witness's district, so that facilities for attending school are greatly required, *Wilkins* 4678-4691—Increasing tendency to keep the boys at school up to the age of twelve, *Atkinson* 8680-8685.

Gradual improvement in the education of the mining population for some years past, though the standard is still very low, *Sandford* 9598-9605—Beneficial operation of the prize scheme adopted by the coal and iron masters in Staffordshire and Shropshire, *ib.* 9599-9603—Details in support of the conclusion that, as compared with other children, the children of miners in Staffordshire, Worcestershire, &c., do not largely attend the schools, and are very backward in education, *ib.* 9606-9641—Particular instances of mines where many of the boys engaged could not read or write, *ib.* 9616-9639—Absence of any apparent improvement since 1863 or 1864, *ib.* 9640, 9641.

Educated state of the mining population throughout Northumberland and Durham, *Forster* 10000-10003—Improvement as regards education in the Wigan district since the Act of 1860, further restrictions being however very inexpedient, *Hewlett* 11260-11282.

Satisfactory state of education of the rising generation of colliers in Scotland, whilst very many of those of a more advanced age are quite uneducated, *Robertson* 13294-13298 Reference to a certain document containing information relative to education in connexion with mines in the counties of Lanark, Ayr, and Renfrew, at the time of the Mines Inspection Act; witness will bring this information down to the present time, and submit it to the Committee, *Burns* 13722-13733.

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4. *Particulars relative to the Provision and Conduct of Schools in connection with Mines:*

Sundry details relative to the schools in the district about Morpeth, the rate of subscription or amount of school pence, the character of the instruction, &c., *Crawford* 472-483. 490-520—Numerous schools in the Wigan district, *Pickard* 1676-1680—Statement relative to the mining mechanical school at Wigan, and the non-attendance of colliers' children thereat, *ib.* 1681-1686. 1710-1714.

Complaint as to each workman at schools in Scotland, whether he has children or not, being obliged to pay 2 *d.* a week towards the school teachers, whereas the men have no voice in the appointment of the teachers, and the charge is moreover too great, *M' Donald* 6878-6886. 6896-6918—Approval of a deduction for the building of schools, *ib.* 6887—Further objection to the deduction for schooling, but only on the ground that the men have no voice in the appointment of the teachers, *ib.* 7258.

Reason for some of the colliery schools in Northumberland and Durham not having been brought under Government, *Forster* 10056-10059—Abundant provision of schools in the district about Wigan, *Hewlett* 11246-11252—Degree of interest taken in education by the colliery masters around Oldham, *Booth*, 11475-11479.

Information relative to the provision of schools in the Wigan district, and the active interest taken in education by the colliery masters, *Knowles* 11517-11519. 11545—Facilities and encouragement in Staffordshire as regards the education of miners' children, *Mathews* 12309, 12310—Sufficient facilities for education before the boys enter the mines, *Ward*. 12645-12651—Statement showing the facilities for the education of miners' children in the counties of Nottingham, Derby, and Leicester, *Woodhouse* 12802-12805.

System of deduction of 2 *d.* a week from the wages of each man at witness's works in Scotland on account of attendance at the colliery school, *Robertson* 13204-13219.

5. *Several Advantages of improved Education in Miners:*

More careful character of colliers if they went under ground at a later age, and with more education, *Burt* 192-195—Benefit to the masters as well as to the men if the men were better educated, *Jeffcock* 11740-11746—Improved moral conduct of the more educated miners, *Pickard* 2329. 2341-2343; *Sandford* 9680. 9691-9698—Better conduct in after life of those who do not enter the pits too young, and have first had some education, *Achersley* 2516-2536. 2552—Way in which improved education in mining districts would tend to increase the employment in mines, *Sandford* 9783. 9809-9814.

6. *Suggestions for increased Facilities for Education:*

Opportunity for education if the boys were employed only eight instead of twelve hours; in such case the age for beginning work might be fixed at twelve, *Burt* 182-185. 201-208—Attention paid by witness to education when he became a hewer and his hours of labour were shortened, *ib.* 182-185. 196-200—Growing feeling among the miners as to the expediency of compulsory education for their children, *Pickard* 2227-2235—Witness contemplates that compulsory education of miners' children should be at the expense of the State, *ib.* 2288-2291.

Expediency of further legislation with a view to further educational improvement, *Normansell* 3048—Importance of better education and intelligence in boys before they are subjected to the danger and severity of mining labour, *ib.* 3071-3075—Feeling chiefly among the more educated men in favour of provisions for the better education of their children, *ib.* 3137, 3138.

Opportunities desirable to be given for education between twelve and fourteen, *Mottershaw* 3745, 3746—General feeling of the men that provision should be made for education up to the age of fourteen, *Cartledge* 4071-4074. 4083—Suggested provision for compulsory education between twelve and fourteen, *M' Donald* 6828-6833.

Opinion that some legislation is needed in this country with a view to improved education in the mining districts, *Sandford* 9645. 9648—Desire shown by the more respectable colliers for education and improvement, it being important to legislate rather for those who are heedless about education, *ib.* 9677-9682—Want of some provisions for the education of boys after the age of twelve, the present Act being defective in this respect, *ib.* 9701-9704.

Suggestions as to the age of employment and the hours of labour of boys in mines, and as to the adoption of a system of half time, or of labour on alternate days, with a view to proper facilities for education, *Sandford* 9723 *et seq.*—Between the ages of ten to thirteen boys should either go to school for half days or on alternate days, *ib.* 9735. 9762—Between the ages of thirteen and sixteen the labour should be restricted to nine hours daily, and the boys should attend night schools three hours a week, *ib.* 9735-9737. 9752, 9753. 9762—Suggestions as to the best field for first trying the experiment of half time and compulsory school attendance, *ib.* 9779-9782.

See also *Boys. Factories and Factory Act. Legislation. Prussia.*
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Table, prepared by Mr. Atkinson, showing the number of deaths from explosions of fire-damp in each inspection district in Great Britain in each of the ten years, 1856-65, *App.* 530—Total of 2,019 deaths from explosions in 1856-65, being about one-fifth of the entire number of deaths, *ib.* 532.

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FALLS OF ROOF:

1. *Number of Accidents in Different Districts.*
2. *Regulations and Practice as to the Supply of Props. &c*
3. *Suggestions for Improved Regulations.*

1. *Number of Accidents in different Districts :*

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Table showing the number of deaths from falls of roof and falls of coal in each inspection district in each of the years 1856-65 ; total of 3,953 deaths, being about two-fifths of the entire number, *App.* 530-532.

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Practice in Scotland as to the supply of timber for props, and as to the distance for which the men have to carry the timber ; dissatisfaction on the latter point, *McDonald* 7008-7019 —Rare instances of deficient supplies of timber for propping in Lancashire, *J. Dickinson* 7651 —Satisfactory precautions generally taken in witness's district against falls of roof, while taking out scoops or pillars, *Moore* 8086-8092—Duty of the deputy overmen in Durham to attend to the props ; frequent occurrence of accident through their neglect or carelessness, *Atkinson*, 8783-8796. 8806-8808. 8813-8817—Duty of the deputy overmen in witness's district to see to the props, falls of roof being however often inevitable, *Forster* 10160-10164—Duty of the deputy overmen in Northumberland to attend to the props ; objects had in view in drawing the props, *Potter* 10292-10295.

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Table showing the number of deaths from explosions of fire-damp in each inspection district in each of the years 1856-65; total of 2,019 in the ten years, *App.* 530. 532.

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FIREMEN AND OVERMEN:

1. *Evidence as to the inefficiency generally of Firemen, with suggestions for their Examination.*
2. *Evidence in approval of Firemen as now appointed, with objections to their being examined.*

1. *Evidence as to the inefficiency generally of Firemen, with suggestions for their Examination:*

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Statement as to the unfit persons frequently selected for firemen; they should have some scientific knowledge, and should be better paid, *Pickard* 2021-2027. 2043-2048—Incompetent persons selected to fill the office of firemen; wages and duties of the firemen adverted to hereon, *Woodward* 2844-2875. 2905, 2906—Instances of ignorance or negligence on the part of the firemen, to the danger of the men, *ib.* 2876-2889—Importance of practical knowledge, rather than of educational knowledge, in firemen, *ib.* 2919-2923.

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Insufficiency of the examination by the firemen before the miners begin work, *Booth* 4558-4567—Want of an examination of firemen before appointment; illustration of this, *ib.* 4582-4586—Responsible duty devolving on the firemen, whereas these are frequently very inefficient, *M' Donald* 7068-7082—Suggested examination of firemen before appointment, *ib.* 7087.

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Very few collieries in Lancashire now unprovided with firemen, whilst some years since firemen were very rare, *J. Dickinson* 7618, 7639—Satisfactory class of men generally selected for firemen, *ib.* 7640-7643—Objection to an examination of the firemen by the inspectors, *ib.* 7644-7646—Instances of proceedings by witness in order to compel the appointment of firemen; that is, by going to arbitration for the purpose, *Moore* 8097-8116.

Concurrence in the view that the sub-officers of mines should be appointed by the owners or managers, irrespectively of any scientific examination or certificate of competency, *Moore* 8243-8248, 8256-8258; *Forster* 10168-10176; *Potter* 10291; *Taylor* 10341, 10342; *Daglish* 10421-10423; *Jeffcock* 11885-11893, 11903-11909; *Chambers* 12168, 12169; *Woodhouse* 12851, 12852, 12878; *Robertson* 13271-13292.

Competent men selected generally for the office of firemen in South Wales, Derbyshire, &c., *Evans* 9128-9144, 9176—Doubt as to any advantage from an examination of firemen, *ib.* 9136, 9177-9183—Satisfactory practice in the selection of firemen; the wages are about 28s. a week, *Forster* 10195-10201—Great care evinced in the selection of the sub-officers of mines, it being essential that the managers should have exclusive choice of the firemen, overmen, &c., *Hewlett* 11382-11385—Expediency of its being left to managers to select firemen without examination, *J. Booth* 11505.

Advantage in owners and managers selecting the firemen, overmen, &c. without these being subject to examination and being certificated as a condition of appointment, *Jeffcock* 11798-11803, 11848, 11849—Considerations as to the qualifications required in deputy overmen or firemen; these can be best ascertained by the experience of the owners or managers, whilst any specific examination of overmen would be of little use, *Mathews* 12316-12319, 12346, 12362, 12363, 12368, 12369, 12400-12405—Advantage in overmen being able to read and write, though by no means essential, *ib.* 12340-12346.

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Considerable wages of the men at Seaton Delaval, some of them earning 7s. a-day, and having also a cottage and coals for nothing, 9984—Advantages of weighing over measuring, so that witness would like to see the former system universally adopted, 9994-9999, 10016, 10017—Educated state of the mining population throughout Northumberland and Durham, 10000-10003—Approval of the boys being required to attend school for a certain time in the week, 10005-10010—Advantage in the weights and machines being under an independent inspection, 10018-10020.

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Ince Hall Collieries. Witness was elected in 1862 by the men in the Ince Hall Mine to look after their interest on the pit's bank, *Mullin* 1822-1825—Constant difference of opinion between witness and the head banksman upon the question of the tubs sent up by the colliers containing proper measure; particulars hereon as to the grounds for the representations and remonstrances frequently made by witness, *ib.* 1826 *et seq.*—Necessity at times of the men sending up short measure on account of the roads not being sufficiently high to admit of full tubs; hardship on the men in these tubs being forfeited, *ib.* 1829 *et seq.*

Forfeiture of 6,656 tubs by the men since November 1862; witness does not know the total quantity sent up, *Mullin* 1854, 1855—Value of witness's services to the men in checking the forfeiture of tubs on the bank, *ib.* 1889-1891. 1915—Explanation as to the men not having taken legal steps to protect themselves against unjust forfeiture of tubs, *ib.* 1892-1908.

Further information relative to the number of tubs forfeited in the Ince Hall Company's mine, the number of men employed, &c., *Mullin* 1909-1914. 1918-1931—Witness is paid by the colliers, his wages amounting to 1 l. 8s. 6d. a week, *ib.* 1916, 1917.

Employment of about 2,000 persons in and about the pits of the Ince Hall Company at Ince and Wigan, *Gilroy* 10635—Numerous schools in the neighbourhood of the company's mines; particulars as to the management of these, and as to the facilities for the attendance of the miners' children, *ib.* 10636-18587—Non-employment of boys under the age of twelve at the Ince Hall Company's pits, *ib.* 10589-10591.

Average of ten hours a day for which the pits in charge of witness work, the men professing to work eleven days in the fortnight, but not really doing so, *Gilroy*, 10626-10629—Actual hours of labour of the boys and men respectively in the Ince Hall Company's pits; the former work quite as long or longer than the latter, *ib.* 10718-10720. 10750-10754. 10761-10774—Longer hours, but less laborious work of those boys who are employed by the masters, *ib.* 10721. 10742-10745.

Employment of about eighty women at the collieries under witness; excellent moral character of these, *Gilroy* 10728. 10731-10736. 10746, 10747. 10787-10789.

Details in explanation and approval of the system of payment by measure at the company's collieries, *Gilroy* 10859 *et seq.*

Explanation relative to some evidence of the witness Mullin in regard to forfeitures at the Ince Hall collieries under the system of measure; inaccuracy of portions of this evidence, *Gilroy* 11013-11030.

Report, 1866—continued.

Ince Hall Collieries—continued.

Opinion as to the sufficiency of the present inspection in the case of the collieries under witness; attention paid to the suggestions of the inspector, *Gilroy* 11046-11056—Full power of witness to spare no expense for the safety of the mines, *ib.* 11062.

Table showing the weight and value of each description of mineral taken from the miners of the Patricroft Cannel Mine from November 1862 to March 1866, *App.* 523.

Inclines. Occurrence of accidents on inclines in Durham, but not through the provision of refuges every twenty yards being neglected, *Atkinson* 8818-8823.

See also *Refuges.*

INSPECTION:

1. Evidence as to the Insufficiency of the present Inspection Staff, and the want of more frequent Inspection without previous Notice.
2. Evidence to the effect that the present amount of Inspection is sufficient, and that an increase of Staff is not required.
3. Objections to any increase of Inspection tending to interfere with the Responsibility of the Owners and Managers.
4. Question as to more frequent Inspection preventing Accidents.
5. Practice of the Inspectors as to Visits to the Mines.
6. Practice in case of Accident.
7. Improvements consequent upon the Inspection.
8. Black Damp Mines.
9. Proposition by Mr. Woodhouse for the Establishment of a class of Assistant Inspectors.
10. Evidence opposed to the foregoing Proposition.
11. Suggestions relative to the Appointment of Sub-Inspectors.
12. Objections to a class of Sub-Inspectors.
13. Number, Qualifications, and Salaries of the Inspectors.

1. Evidence as to the Insufficiency of the present Inspection Staff, and the want of more frequent Inspection without previous Notice.

Want of an increased number of inspectors, or of a body of sub-inspectors, in Northumberland, so that the inspection may be more frequent, and of a more practical kind, *Burt* 256-258. 263-266. 274-286. 293-310—Advantage of frequent inspection without previous notice, *ib.* 305-310—In witness's district, that of Northumberland, there is only one man, more than seventy years of age, to inspect more than 130 collieries, *Crawford* 554—Importance of much more frequent inspection irrespectively of complaints by the men to the inspectors, *P. Dickinson* 907-916—Rare visits of the inspectors except when accidents occur, it being very desirable that they should inspect frequently, and without notice, *Pickard* 1967-1972. 2012-2020—Necessity of an increased number of inspectors in order to inspect the mines more frequently, and to see that the ventilation is properly conducted, *Ackersley*, 2695-2700. 2719, 2720—Insufficiency of the inspection in the St. Helen's district; witness has seen the inspector but once in twelve years, *Woodward* 2809, 2810. 2830-2843. 2865. 2890-2899.

Complaint less against the present Inspection Act than the manner in which it is executed, *Normansell* 3390, 3391—Utter inability of one inspector for the 460 collieries in the district under the inspection of Mr. Morton, *ib.* 3391. 3406-3411—Importance of the mines being inspected frequently, and without previous notice, *ib.* 3412-3417—Witness does not suggest that the inspectors should control the management, but only see that the rules of the Act were enforced, *ib.* 3428. 3446, 3482—Frequent instances of complaint by the men to the inspector, these being sometimes attended to, but the inspector not visiting the pits often enough, *ib.* 3429-3433. 3440.

Further statement as to the inspection staff required in South Yorkshire, *Normansell* 3434-3437—Advantage of a frequent inspection of all collieries, though some are so well managed and ventilated as not to need inspection, *ib.* 3453-3456—Inadequacy of the inspection in Derbyshire and Lancashire, as well as in Yorkshire, some of the inspectors being, however, more vigilant than others, *ib.* 3457-3463. 3492-3498—Labour involved if the inspectors had to see to the observance of all the special rules; expediency of their doing so, *ib.* 3472-3478. 3576, 3577.

Advantage if each colliery were inspected every two months, *Normansell* 3479-3482—Power of the inspectors to visit without previous notice, though in Yorkshire it is the practice to give notice, *ib.* 3483-3491—Expediency of the inspector visiting all accessible places, *ib.* 3504, 3505—Accidental manner in which it becomes known to the men that an inspection is about to take place, *ib.* 3534, 3535—Calculation that three more inspectors for the district of South and West Yorkshire would be sufficient; number of collieries and of pits or drawing shafts comprised in this district, *ib.* 3542-3549. 3594-3605.

Unsatisfactory

INSPECTION—continued.

1. Evidence as to the Insufficiency of the present Inspection Staff, &c.—continued.

Unsatisfactory inspection of mines in Yorkshire, three or four inspectors being required, *Mottershaw* 3890-3893, 3903-3905—Expediency of an increased amount of inspection but without any interference with the responsibility of the owners, *ib.* 3906-3918—Improvement if it were compulsory upon the inspectors to visit the mines unawares, *ib.* 3908, 3921-3923—Inadequacy of the inspection in Derbyshire, it being desirable that every mine should be inspected every two or three months, *Cartledge* 4236-4247—Insufficiency of the inspection in Cheshire, *J. Booth* 4525-4533—Views of some masters as to the want of better inspection, *ib.* 4618-4620.

Insufficiency of the inspection in witness's district; witness in fact has never seen an inspector, *Wilkins* 4754-4759—Witness has worked in collieries for more than twenty years without ever seeing an inspector in any pit, *Hall*, 5023-5030, 5060-5066—Witness has never seen the inspector in the pit, but the latter has generally been down when there has been an accident, *Millward* 5284-5286—Some improvement is doubtless required in the inspection, *ib.* 5449.

An improved inspection is the chief point required in connection with accidents in mines, *Onions* 6032—Feeling of the Durham miners that the inspector has too much work on his hands, *Parker* 6172, 6267-6270—Further statement as to the expediency of increased inspection, irrespectively of the question of complaints to the inspectors by the men, *ib.* 6281-6288.

Representation as to the insufficiency of the inspection staff in Scotland, *McDonald* 6774-6778—Recent instance in Scotland of a gross want of inspection; this may be owing to the inspector not having proper time for the laborious duties thrown upon him, *ib.* 6972-6974—Confidence of witness in the inspection, if there were only inspectors enough to exercise it, *ib.* 8412, 8413.

Total inadequacy of the present inspection; in the fiery districts the number of inspectors should be doubled, *Woodhouse* 12821-12826, 12872, 12901-12905—The number should be increased from twelve to eighteen, *ib.* 12825.

2. Evidence to the effect that the present amount of Inspection is sufficient, and that an increase of Staff is not required:

Frequent visits of witness to the mines, so that he is at a loss to understand the evidence that some miners have never seen him at all, *J. Dickinson* 7367-7371, 7404-7471—Witness has plenty of time for the discharge of his duties; he considers that the present inspection staff is sufficient, *ib.* 7370, 7371, 7450, 7476, 7477—It is possible that a mine might not be visited for several years, *ib.* 7468-7471—Probability of danger existing in any mine for some time before witness knows anything about it, or without any chance of his finding it out, *ib.* 7647-7650—An addition to the inspectors may be required in time, but at present witness sees no necessity for an increased staff, *ib.* 7654—Immense time required for a detailed inspection of all the mines in witness's district; he repeats that the present inspection is sufficient, *ib.* 7670-7672.

Practice of witness sometimes to visit the mines without reference to complaints or accidents; sufficiency of his inspection generally as contemplated by the Act, *Moore* 7900-7910, 7925-7930—Misconception of the duties of an inspector if it be supposed that he should know the state of every colliery in his district, *ib.* 8210—Opinion that witness is quite equal to the discharge of his duties, so far as the work of inspection is contemplated by the Act, *Atkinson* 8945—Number of collieries in the Midland district; opinion as to the sufficiency of witness's inspection, *Evans* 9117-9126—Witness's time is fully occupied, but he is not overworked, *ib.* 9399, 9400—Circumstance showing that a good deal may be done by inspectors in visiting mines and taking proceedings without the cognizance of the men, *ib.* 9508.

Opinion as to the sufficiency of the inspection in Northumberland and Durham, *Forster* 10118, 10119, 10123—Conclusion as to the sufficiency of the present inspecting staff of witness's district, the owners, however, having no objection to more frequent inspection, *Hewlett* 11323-11341, 11353, 11354—Approval of the present system and amount of inspection, *Jeffcock* 11769, 11774-11777—Expediency, as a rule, of inspectors visiting only in case of accident, *ib.* 11873-11875.

Further inspection is not necessary in Staffordshire, *Mathews* 12315—Belief that the mines in England are at present sufficiently inspected; dissent hereon from the views of Mr. Woodhouse, *Jones* 13117-13125—Power of the Home Office to increase the inspection staff, whilst the inspectors have every facility of visiting the mines, *Robertson* 13244-13247, 13266, 13267—Full approval by mine owners in Scotland of an increase of inspection, if deemed necessary, *Burns* 13721.

Witness considers that he is equal to the inspection of his district, so far as inspection is contemplated by the Act, *Baker* 14423, 14424—Total of about 540 collieries in witness's district, a considerable number of which he has never visited underground, *ib.* 14432-14435, 14452-14461.

Report, 1866—continued.

INSPECTION—continued.3. *Objections to any Increase of Inspection tending to interfere with the Responsibility of the Owners and Managers:*

Strong objection to any increase in the action or functions of the inspectors, which should in any way interfere with the responsibility of the owners and managers in regard to ventilation, &c., *J. Dickinson* 7446-7454. 7478-7482—Conviction that it would be better to repeal the Inspection Act altogether than to go further in the way of inspection, *ib.* 7448, 7449—Tendency of more frequent inspection to improve the management, it being very inexpedient, however, to make any extension in the inspection which should lessen the responsibility now thrown upon the owners and managers, *Atkinson* 8946. 8957-8963; *Wynne* 14253-14257. 14318-14324.

Concurrence in the objection to increased inspection as tending to decrease the responsibility of the managers, *Moore* 7899. 7903, 7904; *Evans* 9111-9117. 9158-9161. 9170; *Forster* 10130-10143; *Potter* 10228, 10229. 10244-10256. 10318-10322; *Taylor* 10368, 10369. 10391-10394; *Daglish* 10417-10419; *Mathews* 12315. 12337-12339. 12382-12395. 12406-12417; *Baker* 14425-14427—Inability of an inspector to ascertain the actual state of the ventilation except by an examination of the workings in detail, *Chambers* 12051-12053.

4. *Question as to more frequent Inspection preventing Accidents:*

Effect of more frequent inspection in inducing greater care on the part of owners, thereby preventing accidents, *Normansell* 3437-3439—Belief that by proper inspection there would not be anything like the present number of accidents, *ib.* 3434-3446—Importance of more frequent visits by the inspector, as a check upon accidents, *Owen* 5504-5506. 5521-5523. 5535. 5542-5546.

Examination to the effect that a detailed inspection of all the mines under witness would be quite impracticable, and would not, save in exceptional cases, have the effect of preventing accidents, *Evans* 9289-9311. 9322-9326—Possibility of increased inspection leading to the avoidance of some accidents which now occur through proper precautions not being taken, *Jeffcock* 11809-11815. 11876-11884.

Consideration of the question whether in the case of the numerous collieries not visited by witness, an inspection of each such colliery might not lead to improvement in the management and ventilation, *Baker* 14428-14431. 14452-14466.

5. *Practice of the Inspectors as to Visits to the Mines:*

Explanation that it is not witness's practice to visit mines without some complaint or some special reason for doing so, *J. Dickinson* 7438-7448. 7468-7481—Strict enforcement of the Inspection Act by witness, *ib.* 7450-7452. 7551—Practice of witness in attending to complaints by the miners, and in visiting the pits not only when defects are reported but when accidents occur, *ib.* 7455-7463. 7494-7500.

Witness sometimes inspects a colliery without having received any complaint, and without giving previous notice, *Moore* 7900-7910. 7925-7930. 8218-8221—Practice of the inspectors to visit the mines without previous notice, *Forster* 10115-10117. 10124-10126—Opportunities and practice of the inspectors as to visiting, it being desirable that they should visit mines without receiving special complaints or being expressly summoned, *Potter* 10248-10256—Duty of an inspector to continue visiting an ill-managed mine until improvements were introduced, *Hewlett* 11355.

Practice of witness to visit mines on receiving complaints or on the occurrence of accidents; he also visits any mine that may be peculiarly dangerous, or the management of which is unsatisfactory, *Wynne* 14237-14252—Custom of witness to visit all the collieries that he can without any special reasons for each visit, *Baker* 14436. 14469-14471—Inspection by witness of those collieries more especially which he has reason to believe are badly managed, *ib.* 14467-14482—Objection to the inspectors making returns of the number of pits visited by them, *ib.* 14496-14498.

6. *Practice in case of Accidents:*

Comment upon the course pursued in case of accidents, as regards the visits of the inspector; unfair conclusions likely to be arrived at by the inspector and by the coroner's jury, *Owen* 5506. 5514-5517. 5533-5536. 5542. 5557-5559—Importance of an inspection of any place where an accident happens, before any repairs or alterations are made, *Onions* 5831-5833. 5907. 5935, 5936.

Interval between the report of any defect, or the occurrence of any accident, and the visit of witness, *J. Dickinson* 7462, 7463. 7472-7475.

7. *Improvement consequent upon the Inspection:*

Almost invariable adoption of improvements suggested by witness to the managers, *J. Dickinson* 7532-7537—Tendency of the inspection in South Wales to bring up the condition of the worse collieries to that of the better ventilated ones, *Evans* 9285-9288—Approval of inspection as a check upon mismanagement, the question being whether the inspectors visit sufficiently often; advantage of unexpected visits, *Taylor* 10370-10390.

Beneficial

Report, 1866—continued.

INSPECTION—continued.7. *Improvement consequent upon the Inspection*—continued.

Beneficial effect of the inspection in the case of the badly managed collieries; these are chiefly visited, *J. Booth* 11508, 11509—Anxiety of the inspectors to prevent accidents, and to show in their respective districts as favourable a result as possible, *ib.* 11509.

Willingness evinced in South Yorkshire to adopt the suggestions of the inspector for the efficient ventilation of the more fiery mines, *Jeffcock* 11792-11797—Advantage in the inspector making representations direct to the owner, *ib.* 11876-11884.

8. *Black Damp Mines*:

Want of inspection quite as much by choke-damp mines as by fiery mines, *Woodhouse* 12920-12925; *Jones* 13118, 13125.

9. *Proposition by Mr. Woodhouse for the Establishment of a class of Assistant Inspectors*:

Suggestions for the establishment of a class of young men who might be termed assistant inspectors, to be appointed by and responsible to the inspectors, *Woodhouse* 12811 *et seq.*—Information to be given to the inspectors by the assistant inspectors, the latter having no power to interfere, *ib.* 12811-12813, 12827, 12828, 12831, 12837, 12838, 12864, 12872, 12907-12912—Contemplated promotion of the assistant inspectors as vacancies occur among the inspectors; efficient staff to be obtained thereby, *ib.* 12814-12817, 12842, 12843.

Witness does not contemplate the assistant inspectors being paid; they should in fact be in the position of pupils, *Woodhouse* 12818, 12855, 12856, 12871—Improbability of the owners objecting to an assistant inspector or pupil being frequently in their mines, *ib.* 12819, 12820, 12857-12864, 1288b-12895, 12899, 12900—Contemplated examination before appointment as assistant inspector, *ib.* 12833-12836, 12844-12849.

Illustration in the case of the Oaks Colliery at Barnsley of the useful services to be rendered by the proposed assistant inspectors, *Woodhouse* 12838-12840—Valuable character of the practical training of the proposed class of assistant inspectors so that they would be very competent for the office of colliery viewer as well as of inspector, *ib.* 12852-12854, 12865-12874.

Evidence opposed to the view that the knowledge acquired in the mines by the proposed assistant inspectors might subsequently be used to the prejudice or detriment of the owners, *Woodhouse* 12930-12958, 12960-12964—Proposed check in the inspector but not in the mine-owner, as to the visits of the assistant inspectors to any colliery, *ib.* 12965-12967—Contemplated appointment of only one or two assistant inspectors in each district, *ib.* 12646, 12947.

10. *Evidence Opposed to the foregoing Proposition*:

Sundry objections to a class of assistant inspectors, or pupils, visiting the mines and investigating the detailed management for the information of the inspectors, *Jones* 13027-13036—Statement in further disapproval of the proposition for the establishment of a class of assistant inspectors or pupils who should visit the mines without the permission of the owners, *ib.* 13104-13116, 13126-13140—Decided disapproval of Mr. Woodhouse's proposition in regard to assistant inspectors or pupils; expected objection by the owners generally to this proposal, *Robertson* 13235-13238, 13242, 13262-13265.

Disapproval of the proposed appointment of pupil assistants under the inspectors, *Hood* 13334—Valuable training for the office of inspector or viewer by young men being placed under the colliery owners for practical instruction, *ib.* 13334-13339—Strenuous opposition of the owners in Scotland to the proposed class of pupil inspectors, *Burns* 13721—Decided objection by the masters to the proposal of Mr. Woodhouse in regard to sub-inspectors or inspectors' pupils, *Baird* 14169, 14175-14180—Eligible character of mining engineers and their pupils as the class from which to appoint inspectors, *ib.* 14170-14174.

Reference to a provision in the Act of 1855, prohibiting inspectors from certain work, as showing the objection then entertained against any such system of inspectors' pupils as that proposed by Mr. Woodhouse, *Day* 14192-14197.

11. *Suggestions relative to the Appointment of Sub-Inspectors*:

Practical class of men required as sub-inspectors, *Burt* 293-304—Very inadequate inspection in witness's district, it being very desirable to have a body of practical men as sub-inspectors, *Crawford* 549-564—Want of two sub-inspectors and one inspector for the 103 collieries in the Wigan district, *Pickard* 2012-2016.

Want of a staff of sub-inspectors so that the pits should be visited not less than once a month, *Woodward* 2896, 2897—Superior class of persons required for sub-inspectors, firemen or overmen being generally unfitted for the office, *M. Donald* 8414-8418—Suggestions relative to the appointment of sub-inspectors, that is, if it be decided to increase the inspection, *Atkinson* 8947-8956.

INSPECTION—continued.12. *Objections to a class of Sub-Inspectors :*

Disapproval on the whole of a class of sub-inspectors, though some of the men might fill the office very efficiently, *J. Dickinson* 7655-7661—Concurrence of objections to the appointment of a class of sub-inspectors; mischievous results apprehended, *Moore* 8240-8242, 8255; *Evans* 9127, 9171-9175, 9330; *Forster* 10110-10114; *Pötter* 10242, 10243; *Duglish* 10415, 10416; *Booth* 11501, 11502; *Knowles* 11561-11565; *Chambers* 12137, 12138; *Mathews* 12313, 12314, 12366, 12367; *Woodhouse* 12811; *Wynne* 14346, 14347.

Statement showing that a very efficient sub-inspection is already carried out in the Wigan mines by means of the several under officers, *Gilroy* 11004-11012—Inexpediency of a class of sub-inspectors of lower standing than the inspectors, *Hewlett* 11315-11317.

Grounds for apprehending that the appointment of sub-inspectors, as being an inferior class, would lead to insubordination and want of discipline in the mining officers, and would interfere with the responsibility of the managers and owners, *Jeffcock* 11761-11767—Dissent from the proposed appointment of sub-inspectors; question considered hereon as to the sufficiency of two inspectors for the numerous collieries in Scotland, *Robertson* 13234, 13248-13261.

13. *Number, Qualifications, and Salaries of the Inspectors :*

Appointment of four inspectors in 1850, the number having been since increased to twelve; there has been no increase since 1855, *Dickinson* 7279-7287—Large mining experience of witness; practical experience also of the inspectors generally, *ib.* 7541-7546, 7592—Very inadequate salaries of the inspectors; inducement to them to turn viewers or managers of mines, *ib.* 8364, 8365.

Difficulty in securing the services of a sufficient number of first-class inspectors at the present rate of remuneration, *Woodhouse* 12872-12874—Tendency of more frequent inspection to prevent the occurrence of accidents, *ib.* 12917-12919.

See also *Accidents. Act of 1860. Belgium. Complaints by Workmen. Ironstone Mines. Lead and Tin Mines. Limestone Pits. Responsibility, 1. Shallow Mines.*

Intemperance of Colliers. Large expenditure of the Northumberland miners in drink, *Burt* 403, 404, 409-411, 416-419—Considerable proportion of the men in the Wigan district who indulge in drink, *Baxendale* 1348, 1349—The public-houses are too much frequented in the Wigan district, *Pickard* 2215, 2224—Doubt as to there being more intemperance among miners than in other trades, *Ackersley* 2529, 2532, 2533—Intemperate habits of many of the colliers in South Yorkshire, *Jeffcock* 11652, 11654, 11669-11671.

Inundations. Instances of accidents from inundations; importance on this score of proper plans, *Evans* 9426-9435.

Ironstone Mines. Deficiency of ventilation in the ironstone mine where witness works, the air-way not being of proper size, *Owen* 5476-5497, 5547-5556—Statement in favour of the Mines Inspection Act being extended to ironstone mines, *M'Donald* 8393-8396, 8400, 8401—Danger from the large quantity of carbonic acid gas in some ironstone mines, *ib.* 8400.

Harder work of boys in iron works than in collieries, the latter being more dangerous, *Evans* 8994-9001—Statement showing the expediency of its being made clear that all ironstone mines in the coal measures are included in the Inspection Act; legal difficulty at present on this question, *ib.* 9492-9507—Unobjectionable character of the employment of some women at ironstone pits of witness's firm, *Chambers* 12134-12136.

J.

Jeffcock, Thomas William. (Analysis of his Evidence.)—Member of the firm of Brown & Jeffcock, mining engineers, of Sheffield and Barnsley; is concerned in the management of several mines in the South Yorkshire district, 11595-11601, 11841, 11842—Practice of payment by weight at all the collieries with which witness is connected, the workmen having a check weigher, and the system giving every satisfaction, 11602-11611—Approval of an independent inspection of the weight and machines, 11612, 11613—Decided preference for weighing as compared with measuring, it being inexpedient however to compel the abandonment of the latter practice in those districts where it is customary, 11614-11628.

Jeffcock, Thomas William. (Analysis of his Evidence.)—*continued.*

Introduction of weekly payments at witness's collieries on account of pressure on the part of the men, 11629-11637—Grounds for preferring fortnightly to weekly pays, in the interests both of the employer and employed; views of the men, however, as to the advantages of weekly payments, 11638-11671—Intemperate and improvident character of many of the colliers in South Yorkshire; importance of better education in these cases, 11652. 11654. 11669-11677. 11740-11745—Information relative to the sick and accident clubs at Lundhill and other collieries, 11687-11689.

Ample means of education in the Barnsley district, 11691-11696—Number of boys in the Stafford Colliery, near Barnsley, with particulars as to their state of education; there are seven boys above the age of twelve who can neither read nor write 11694-11707. 11723-11729—Less inconvenience in the Barnsley district than in thin seam districts if boys were not allowed to enter the mines till twelve years old, 11078-11712—Great inconvenience if boys worked for only eight hours up to the age of fourteen; difficulty and danger involved in a system of relays of boys, 11713-11722. 11738, 11739. 11747, 11478.

Longer hours of the boys than of the men, 11730-11732—Modes of employment of the boys, no particular skill or apprenticeship being essential, 11733-11737. 11756-11759—Benefit to the masters as well as to the men if the men were better educated, 11740-11746—Varying earnings of the boys from 10*d.* to 2*s.* a day, 11750—Varying number of boys in proportion to men in different collieries, 11751-11755.

Grounds for apprehending that the appointment of sub-inspectors, as being an inferior class, would lead to insubordination and want of discipline in the mining officers, and would interfere with the responsibility of the managers and owners, 11761-1177—Approval of the present system and amount of inspection, 11769. 11774-11777—Satisfactory working of the system of inquiry by the coroner, the jury being more fairly and impartially composed than if there were as a rule six working colliers on it, 11778-11783.

Opinion that some serious explosions occur in exceptional cases from want of moral courage in managers to insist upon the owners taking proper precautions; illustrations on this point, 11784-11791. 11809. 11816-11818. 11835. 11837-11839. 11847. 11850-11854. 11883. 11894-11896—Occurrence of the greater number of accidents through the carelessness of the men, 11784. 11791. 11819-11834. 11855-11857—Willingness evinced in South Yorkshire to adopt the suggestions of the inspector for the efficient ventilation of the more fiery mines, 11792-11797.

Advantage in owners and managers selecting the firemen, overmen, &c., without these being subject to examination, and being certificated as a condition of appointment, 11798-11803. 11848, 11849—Instances of actions against owners for compensation; check thereby upon neglect of precautions, 11804-11808—Possibility of increased inspection leading to the avoidance of some accidents, which now occur through proper precautions not being taken, 11809-11815. 11876-11884—Great importance of owners appointing good managers, and giving them full discretion to adopt precautions, 11816-11818.

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1. *Representations on the part of the Workmen as to the Evils of Payment by Measure.*
2. *Evidence in Defence of the Measuring System, as in force in certain Districts.*
3. *Instances of Complaint by Masters against the System of Measure.*

1. *Representations on the part of the Workmen as to the Evils of Payment by Measure:*

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MERRY & CUNNINGHAM, MESSRS.:

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2. *Spirit Licenses, and Sale of Spirits.*
3. *Schools.*
4. *System of Payment of Wages.*
5. *Magnitude of the Works of the Firm.*

1. *System of Stores, and of Advances in connection therewith.:*

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PAYMENT OF WAGES:

1. *Practice in regard to Weekly or Fortnightly Payments in Different Districts in England; Views of Workmen on the Subject.*
2. *Objections by Masters to Weekly Payments.*
3. *Objection to Legislative Interference in the Matter.*
4. *Practice as to Payment of Wages in Scotland; Demand for Fortnightly Payments.*

1. *Practice in regard to Weekly or Fortnightly Payments in Different Districts in England; Views of Workmen on the Subject:*

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— Numerous schools in the Wigan district, 1676-1680—Statement relative to the mining mechanical school at Wigan, and the non-attendance of colliers' children thereat, 1681-1686. 1710-1714—Mode of action of witness and other agents in the interests of the men; dissatisfaction to the latter through the intervention of witness being sometimes not allowed by the masters, 1687-1699—Small amount earned weekly by boys under the age of twelve, 1700-1702—Necessity of strict regulations, or the men will continue to send their children into the mines, to the neglect of their education, 1703-1709.

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[Second Examination.]—Evidence in support of the statement that in many mines there is not a sufficiency of ventilation to render harmless the noxious gases in which the men work, 1932 *et seq.*—Instances of there being no measurement of the volume of air circulating in mines, by means of the anemometer, 1936-1944—Depth of some mines, and length of the horizontal workings adverted to as showing the inadequacy of one shaft for purposes of ventilation, 1945-1956.

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RESPONSIBILITY:

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2. *As to the Responsibility of the Men and of the Masters under the Special Rules.*

1. *As to the Responsibility respectively of the Inspectors and of the Owners or Managers:*

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Instance, in Durham, of a second pit having been made at some distance from the main pit, and of only one shaft, with a brattice, having been provided, *Parker* 6198-6207. 6216-6223—Witness knows several mines in Scotland which have not complied with the Act in regard to having two shafts; in these cases the shaft is divided by brattices, *M'Donald* 6934-6937.

Suggested alteration of the first general rule, by rendering it compulsory, when shafts have two seams, to have fencing at the working place of the seam as well as at the top of the shaft, *ib.* 7035-7045.

Non-provision in all Scotch mines of a double shaft, as required by the Act; report of such cases to the Lord Advocate, *Moore* 7952, 7953—Advantage of a special rule providing for fencing the opening of mouthings into the shaft, *ib.* 8080-8084.

Compliance with the Shaft Act of 1862 in the Durham district; instances of arbitration on the subject, *Atkinson* 8804, 8805. 8964—Question considered as to the means of preventing accidents by falls from mouthings at horizontal galleries coming into the shafts; suggestion on this subject, *ib.* 8835-8844—Compliance, generally, with the regulation as to having two shafts in South Wales and Derbyshire, *Evans* 9080-9092—Satisfactory fencing of the shafts in the Midland district, whilst in South Wales the older shafts were much neglected in this respect, *ib.* 9350-9355.

As a rule shaft accidents are owing to the neglect of the men, *Jeffcock* 11831. 11855—Compliance in witness's district with the Act of 1862 in regard to the provision of a separate upcast shaft for every colliery, *ib.* 11895. 11897-11899. 17910-11919.

Table, showing the number of deaths from accidents in shafts in each inspection district, in each of the years 1856-65, *App.* 531—Total of 1,710 deaths in the ten years 1856-65, *ib.* 532.

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Shallow Mines. Necessity of increased inspection of shallow mines, they being rarely visited at present, *Onions* 5880-5884—Advantage of a proper opening between the shafts in shallow mines, *ib.* 5884. 5885.

Sharpening of Tools. Absence of complaints in regard to the practice of sharpening the workmen's tools, in the Wigan district, *Pickard* 2132-2136—Deduction, in Scotland, of 3d. a week from each workman for sharpening his tools; belief as to the masters getting a profit from this, *M'Donald* 7259-7265.

Shotts Iron and Coal Works (Lanark). Statement as to three boys having recently worked for three consecutive days and nights under their father, (a man named Shelley), at the Shotts Iron Company's works, and having merely left the mine to get their meals; one of the these boys is said to be under ten years of age, *M'Donald* 6803-6805. 6810-6812. 6870-6877—Statement as to witness having inquired into the case of a man named Shelley, who was said to have worked, with his three boys, for three days and nights continuously, in a pit at Shotts; Shelley had only two boys at the works, both over twelve years of age, and denied that he had worked for three days and nights, or that the younger boy had worked with him at all, *Moore* 8228-8230. 8259-8261.

Further statement relative to the case of a man named Shelley employed at the Shotts works with three of his boys; circumstance of its having been reported to witness that the youngest boy was turned out of the pit by the inspector, *M'Donald* 8366-8368.

Statement in denial of the accuracy of Mr. M'Donald's evidence as to witness having sent one of the boys of the man Shelley out of the Shotts Company's pit; witness saw only two boys, one of whom could read and the other could write, *Moore* 8624-8627. 8631-8639.

Denial of certain evidence of Mr. M'Donald as to the period for which a certain workman, together with his three boys, had worked consecutively in one of the Shotts Company's pits, without leaving it except for meals; gross exaggeration by Mr. M'Donald in this case, *Ormiston* 13875-13879—Inaccuracy of the statement that the inspector had ordered a boy out of one of the company's pits on account of his age, *ib.* 13879.

Information relative to the schools in connection with the company's works, the payments made by the men, the contributions by the company, &c., *Ormiston* 13881-13894—Management of the school fund by a committee of workmen; check thereby upon the company deriving any profit from the school fees, *ib.* 13893-13897.

Statement showing the average attendance at the day and evening schools, the amount of fees, and the sums retained from workmen's wages for educational purposes during

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the years 1863-65, *App.* 537—Return of the total amount of wages paid, the amount of cash advanced, and the value of goods sold in the company's stores during the years 1861-65, *ib.*—See also *Stores.*

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Sick and Accident Clubs. See *Clubs, &c.*

Signals. Suggestion as to the men being warned in certain cases of danger by means of signals or bells, *Normansell* 3563-3565—Statement relative to the non-provision in some cases of signals from the bottom of the shafts to the top, *Onions* 5898-5912, 5917, 5918—Complaint in some mines in Scotland as to the signal wires, *McDonald* 7057.

Compliance generally with the rule as to the provision of signals in the shafts in Lancashire, *J. Dickinson* 7664-7667—Satisfactory adoption of signalling apparatus in the shafts in Durham, *Atkinson* 8849-8855—Attention paid to the rule as to signals in the midland district, *Evans* 9356, 9357.

Silkstone Collieries. See *Newton, Chambers & Co. Wharfedale Silkstone Colliery.*

Small Mines. Much less care in the small mines in Scotland than in the large mines, *McDonald* 7020, 7021, 7030.

Snibston Colliery (Leicester). Labour of the boys in Snibston pit for thirteen or fourteen hours daily, they being paid by the piece, *Hall* 4952-4956—Laborious character of some of the work performed by the boys in Snibston pit; frequent accidents to which liable in pony driving, *ib.* 4956-4970, 5002-5004—Modes of employment of the boys, up to twelve years of age, so that they get but little education, *ib.* 4972-4976—Nature of the opportunities of the boys for getting their dinner, *ib.* 5018-5022.

Rule at the Snibston colliery that any workman belonging to a miner's union or association shall be liable to instant dismissal, *Hall* 5040, 5049, 5050—Doubt as to what becomes of the fines levied upon the men in Snibston mine for neglect in the matter of props, *ib.* 5107-5109—Payment by the men of 3*d.* a week to the sick and accident fund, which is managed by the owners, *ib.* 5110, 5111.

South Hetton and Murton Collieries. Occurrence of only one fatal accident last year in these collieries among 1,200 workpeople, *Broadbent* 11069—Explanation in connection with the workmen's relief fund at the South Hetton and Murton collieries; its prosperous condition, *ib.* 11087-11097—Information relative to the schools attached to the collieries, *ib.* 11098-11107, 11110-11114.

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Satisfaction given generally in witness's district by the special rules required under the Act of 1860, *Burt* 226, 227, 267-269—Complaint as to the men not being consulted before the special rules are framed, and as to their not having proper notice of the rules before they are sent to the Home Office for approval, *Pickard* 2112-2129; *Achersley* 2743-2758—Several of the special rules in which amendments are required; expediency of these rules being properly submitted to the men before they are sanctioned, *Normansell* 3629-3649—Witness hands in the special rules of the South Yorkshire district, the rules being the same in all the collieries in the district; these are duly put up in all the mines, *ib.* 3352-3355, 3624, 3625.

Strong complaint by the men against the special rules in Scotland, as framed in 1855, and still in force, *McDonald* 7182-7196—No special rules have been established since 1855, *ib.* 7185, 7186—Disapproval of the arbitration of Mr. Landale in 1856, by which one of the special rules was slightly altered, *ib.* 7191-7196—Mr. Landale was largely in the interest of the owners, *ib.* 7193.

Conclusion that the special rules may override the general rules, *McDonald* 7197, 7241-7257—Amendments suggested in the mode of framing the special rules, in lieu of their being hung up in the mine, and referred to a mining engineer if objected to by the men, *ib.* 7205-7217, 7235-7238—Expediency of a new set of rules altogether in Scotland; frequent representations by the men to this effect, *ib.* 7212, 7227-7238.

Power of witness to go to arbitration for amending the special rules, so that legislation in this respect is not essential, *Moore* 8093-8096—Statement in explanation of the special rules to which witness objects as inadequate, and of the additional rules proposed in regard to firemen and ventilation; desire of witness to impose increased responsibility upon the owner, *ib.* 8156-8163.

Ample opportunity of the men for objecting to the special rules before they are sanctioned, *J. Dickinson* 8311-8314—Very little interest taken by the men in the framing of the special rules, *Evans* 9436-9443.

Entire fitness of Mr. Landale as the person chosen to arbitrate with reference to the special rules in Scotland, *Burns* 13479, 13484-13486—Witness hands in the award made

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made by Mr. Landale in modification of special Rule No. 3, *Burns* 13479, 13480—Important character of the alteration effected in No. 3 special rule, by the award of Mr. Landale, *ib.* 13481-13483. 13494-13505.

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Necessity, under the Act of 1860, of new collieries having their special rules duly sanctioned before adoption, certain additional rules having been introduced since the Act of 1855, whilst in no case have objections been raised against their sanction, *Burns* 13552-13572—Opportunity of the workmen to object to the special rules before adoption, it not being customary in Scotland directly to consult them on the subject, *ib.* 13559-13562—Further statement in support of the view that the obligations in special Rule No. 3, relative to disobedience, have reference to and are governed by the general law, *ib.* 13573-13578.

Copy of award of Mr. Landale in August 1856 regarding "Special Rule relative to the Colliers" obeying the orders of the underground managers or oversmen in all matters relating to their work and the ventilation and safety of the pit, *App.* 536.

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Springfield Colliery Explosion. It is possible that the accident in the Springfield Colliery might have been prevented by previous inspection, *Evans* 9309-9306.

Stafford Colliery (Barnsley). Number of boys in the Stafford Colliery near Barnsley, with particulars as to their state of education; there are seven boys above the age twelve who can neither read nor write, *Jeffcock* 11694-11707. 11723-11729.

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Stanley Colliery (York). Particulars relative to the hours of labour and mode of employment of the boys in Stanley Colliery; very few boys under twelve years of age, *Mottershaw* 3725-3742. 3752-3757—Employment and payment of boys in Stanley Colliery by the master instead of by the men, *ib.* 3738, 3739. 3747, 3748—Very few doors used at the colliery; these are swing doors, and doorkeepers are not employed, *ib.* 3763-3768.

Staveley Colliery. Penalties recovered by witness in the case of the Staveley Mine, *Evans* 9508-9515.

Stewart, Robert. Information relative to an accident recently on an incline at Mr. Robert Stewart's pit at Ballardie; this was not from want of a refuge, *Moore* 8187-8200. 8213-8217—Occurrence of some accidents recently at the pits of Mr. Robert Stewart, all of which have been duly reported, *ib.* 8268-8270.

Stipendiary Magistrates. Advantage if there were a stipendiary magistrate in Barnsley to exercise jurisdiction in certain cases, *Normansell* 3713.

Stoppage of Mines. Suspension of work in a mine under the Ketley Company through defective ventilation, *Onions* 5810-5817. 5848. 5853-5863—Grounds for concluding that the inspectors have at present sufficient power upon the subject of stopping the working of pits, *J. Dickinson* 8305-8310.—See also *Cockeysmoor Colliery.*

Stoppages or Deductions from Wages. There is no truck system in South Yorkshire, but there are some stoppages which are objected to, *Normansell* 3692-3697—Evidence opposed to any compulsory payment or stoppage from wages in respect of sick or accident clubs, &c., *Carlidge* 4325-4343; *Wilkins* 4916-4925; *Millward* 5376 *et seq.*

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Stoppings or Cross Cuttings. Practice as to filling up the cuttings or close passages; importance of their being all filled up with bricks and mortar, *Pickard* 2065-2075—Importance of the cross cuttings being substantially stopped, this not being always done, *Achersley* 2687-2691—Practice of working by stall and pillar adverted to with reference to the number of stoppings desirable, *ib.* 2721-2742—Improper manner in which the openings are stopped up through the management being insufficiently inspected, *Woodward* 2839-2843. 2900-2904.

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STORES (SCOTLAND):

1. Evidence in condemnation of the Stores attached to Coal and Iron Works in Scotland; Complaint as to the evasion thereby of the Truck Act.
2. Explanatory Statements on the part of the Owners; denial that the system of Truck is practised.
3. Return showing the several Stores in Scotland and the number of Men employed in each case.

1. Evidence in Condemnation of the Stores attached to Coal and Iron Works in Scotland; Complaint as to the evasion thereby of the Truck Act.

Details relative to the operation of the truck system in Scotland, the Truck Act being evaded by the establishment of "stores," so termed, *M^cDonald* 7088 *et seq.*—Particulars as to the stores in connection with the extensive works of Messrs. Merry & Cunningham, and as to the system of advances to the men in order to secure purchases from the stores, *ib.* 7089 *et seq.*—Circumstance of Messrs. Merry & Cunningham having eleven licenses at their different works as spirit dealers; influence exercised by them in preventing other persons getting licenses, *ib.* 7091, 7118, 7125-7127.

Liability of the men to dismissal if they do not have advances, and spend some of the money at the stores, *M^cDonald* 7093 *et seq.*—Limited extent to which the men may spend their money at the ordinary shops, *ib.* 7125-7135—Very injurious effect of the stores in the case of improvident workmen, *ib.* 7131-7139—Facility with which the men may obtain spirits, *ib.* 7136-7138—Higher price of the goods at the truck shops than in Glasgow, *ib.* 7139.

Conformity of the owners to the letter of the Truck Act, *M^cDonald* 7140—Discontent and strikes caused by the truck shops, though the men are powerless to prevent them, *ib.* 7141-7153, 7160, 7161—Nature of the amendment required in the law so as to prevent the present evasion of the Truck Act, *ib.* 7154-7159—Estimate of about 20,000 *l.* a year as the profits from the stores of Messrs. Merry & Cunningham, *ib.* 7155—Demoralising effect of the truck shops in Scotland, *ib.* 8393, 8394.

2. Explanatory Statements on the part of the Owners; denial that the System of Truck is practised:

Statement as to the witness having refused to establish stores as truck shops, though frequently solicited by the men to do so, *Robertson* 13171, 13180-13182—Establishment of a store by one of witness's men; witness makes no objection to this, but would object to an alehouse or public-house being kept by any of his men, *ib.* 13172-13179, 13183-13190—Information relative to the stores established by Messrs. Merry & Cunningham; great convenience thereby to the workmen, *ib.* 13191-13203.

Operation of the law of arrestment as showing the advantage of the establishment of stores, *Burns* 13676-13682; *Ormiston* 13795, 13796, 13815-13821, 13855-13859—Error in designating the stores as truck shops, *Burns* 13676, 13684—Stringency of the provisions of the Truck Act; conclusion that these are not violated by the system of stores, *ib.* 13682-13716—Particular instances of stores being kept without the truck system coming into operation, *ib.* 13684—Denial that truck is practised at the works of Messrs. Merry & Cunningham, *ib.* 13684, 13705—Consideration of the operation of the stores established by the owners as regards the deductions or "off takes" from wages; convenience of the system to the men, *ib.* 13688-13706.

Establishment of four stores in connection with the works of the Shotts Iron Company; denial that these are in the nature of truck shops, *Ormiston* 13739, 13740—Establishment of the stores for the convenience of the workmen and for profit; great inconvenience to the men if the stores were abolished, *ib.* 13741-13745, 13750-13757, 13840-13857—System of credit at the stores in the case of the better class of workmen, it being considered necessary to require ready money from the more improvident men, *ib.* 13745-13749, 13758-13770—Prohibition under the Truck Act against suing for debts incurred at the stores, *ib.* 13748, 13749, 13765-13770.

Explanation relative to the amount of profit made by the Shotts Iron Company from the stores; total of from 1,500 *l.* to 2,000 *l.* a year, *Ormiston* 13771-13778, 13848-13854, 13865-13871, 13880—Particulars relative to the practice of daily advances to the men; denial that there is any condition about purchases being made at the company's stores, *ib.* 13797 *et seq.*—Admission that in making advances a decided preference is given to men who deal at the stores, *ib.* 13804, 13805, 13814-13821, 13835-13839—Statement showing that a large portion of the advances is not spent at the stores at all, *ib.* 13810-13812, 13823-13829.

About 18,000 *l.*, or one-fourth of the total wages is spent at the stores of the Shotts Company in the year, *Ormiston* 13810, 13823, 13872, 13873, 13901—The general public spend 3,000 *l.* or 4,000 *l.* a year at the stores, *ib.* 13810, 13811, 13902, 13903—Various articles sold at the stores; in one case only are spirits sold, *ib.* 13824-13828, 13833—Encouragement given to the men to complain if dissatisfied with the quality or price of the store articles, *ib.* 13834—Dissent from the view that the company have created an artificial

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artificial system of restraint upon the men by the system of advances in connection with the stores, *Ormiston* 3855-13859 — Witness does not advocate the system of stores, but is desirous of exposing the misrepresentations of it, *ib.* 13859-13861.

Expenditure by Messrs. Merry & Cunningham's workmen of about 70,000 *l.* at the stores, their total amount of wages being 243,000 *l.*, *Baird* 14048-14051 — Estimate of 6,600 *l.* a year as the total profit made from the stores, *ib.* 14052, 14053 — Explanation as to there being three works without stores, *ib.* 14054-14058. 14120-14124 — Inquiry made about eight years ago into the working of the system of stores, *ib.* 14055, 14056. 14088-14096.

Details relative to the system of advances in connection with the subsequent expenditure by the men at the stores; preference, as regards advances, to those men who deal at the stores, though there is no obligation upon the men to go to the stores at all, *Baird* 14059-14087. 14097-14107. 14113 — Difficulty in stating the amount paid for spirits, *ib.* 14066-14069. 14114. 14117, 14118 — Convenience and advantage of the stores to the men, *ib.* 14075-14083. 14103. 14124.

Practice as to the granting of licenses to stores and other places in the same localities; denial of the statement of Mr. M'Donald as to undue influence being exercised in this respect, *Baird* 14108-14112. 14115, 14116. 14139-14148 — Inaccuracy of the statement as to there being any special facilities for providing spirits, *ib.* 14132-14135.

Statement of the total amount of wages paid annually by Messrs. Merry and Cunningham, the amount between pays, and the amount of purchases by workmen at stores, *App* 538.

3. *Return showing the several Stores in Scotland, and the number of Men employed in each case:*

List of stores or truck shops held in Scotland by colliery, iron, and mine owners, together with the number of men employed in each case, and the system of payment of wages in each case, *App.* 524, 525.

Strikes. Long strike or lock-out in South Yorkshire in 1859, before the adoption of the system of payment by weight, *Normansell* 3170-3172 — Numerous strikes in Scotland through the unsatisfactory manner in which the weighing is carried out, *M'Donald* 7172. 7175 — Importance attached to the hydraulic coal-cutting machine, as making the masters more independent of strikes, *Potter* 10287 — Peculiarly large earnings of a number of witness's men at the time when they were called upon by the unionists' executive in Barnsley to strike for an advance of 5 per cent., *Chambers* 12008-12015 12036-12040. 12093-12101 — Anomaly of the demand for an advance of 5 per cent. at the colliery already giving the highest wages of any in the kingdom, *ib.* 12101 — Probability of a strike if weekly payments and an advance of 5 per cent. in wages had not been acceded to at the Silkstone and Mount Osborne Collieries in Yorkshire, *Potter* 12441-12447. — See also *Brancepeth Colliery.*

SUB-INSPECTORS:

1. *Evidence favourable to the Appointment of Sub-Inspectors.*
2. *Evidence opposed to such Appointment.*

1. *Evidence favourable to the Appointment of Sub-Inspectors:*

Practical class of men required as sub-inspectors, *Burt* 293-304 — Very inadequate inspection in witness's district, it being very desirable to have a body of practical men as sub-inspectors, *Crawford* 549-564 — Want of two sub-inspectors and one inspector for the 103 collieries in the Wigan district, *Pickard* 2012-2016 — Want of a staff of sub-inspectors, so that the pits should be visited not less than once a month, *Woodward* 2896. 2897.

Superior class of persons required for sub-inspectors, firemen or overmen being generally unfitted for the office, *M'Donald* 8414-8418 — Suggestions relative to the appointment of sub-inspectors; that is, if it be decided to increase the inspection, *Atkinson* 8947-8956.

2. *Evidence opposed to such Appointment:*

Objection on the whole to a class of sub-inspectors, though some of the men might fill the office very efficiently, *J. Dickinson* 7655-7661 — Concurrence in the objection to a class of sub-inspectors; mischievous results anticipated, *Moore* 8240-8242. 8255; *Evans* 9127. 9171-9175. 9330; *Forster* 10110-10114; *Potter* 10242, 10243; *Daglish* 10415, 10416; *Booth* 11501, 11502; *Knowles* 11561-11565; *Chambers* 12137, 12138; *Mathews* 12313, 12314. 12366, 12367; *Woodhouse* 12811; *Wynne* 14346, 14347.

Statement showing that a very efficient sub-inspection is already carried out in the Wigan mines, by means of the several under-officers, *Gilroy* 11004-11012 — Inexpediency of a class of sub-inspectors of lower standing than the inspectors, *Hewlett* 11315-11317.

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Grounds for apprehending that the appointment of sub-inspectors as being an inferior class would lead to insubordination and want of discipline in the mining officers, and would interfere with the responsibility of the managers and owners, *Jeffcock* 11761-11767—Dissent from the proposed appointment of sub-inspectors; question considered hereon as to the sufficiency of two inspectors for the numerous collieries in Scotland, *Robertson* 13234. 13248-13261.

Summary Procedure. See *Legal Proceedings*.

Sunday Schools. Attendance of boys over twelve at Sunday schools, but not generally at day schools, *Booth* 4409-4414—Considerable attendance of collier boys at Sunday schools, these schools however being badly managed, *Sandford* 9672, 9673.

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Taylor, John. (Analysis of his Evidence.)—Is managing partner of the Ryhope Colliery in Durham, and is mining engineer to the collieries of the Duke of Northumberland and other owners, 10323-10326—Large schools at Ryhope Colliery and numerous attendance of children, 10327-10331—Great demand for the labour of boys in the Durham mines, so that their non-employment under the age of twelve would be a great inconvenience, 10332-10335. 10364-10367—Compliance with the regulations as to the education of boys when employed under the age of twelve, 10336, 10337—Entire impracticability of relays of boys in Durham, 10338, 10339.

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Thin Mines. Obstacle to dispensing with the labour of boys in thin seam mines, *J. Booth* 4403-4410. 4421-4424—Less difficulty of ventilation in thin mines than in thick mines, *J. Dickinson* 7730—Difficulty in working the thin mines; they are, however, safer than thick mines, and the men do not appear to suffer in health, *ib.* 7731-7734.—Very few thin seams worked in Durham, *Atkinson* 8831-8832.

Less necessity for boys under twelve in the thick mines of South Wales and the Midland Counties than in thin seam districts, *Evans* 8988, 8989. 9014-9023—With regard to the thin seams in Durham not being worked in connection with the thick seams, there will be no practical obstacle to the working of the former in future years, *Taylor* 10395-10399—Varying character of the seams worked in the Wigan district; efficient manner in which worked, *Gilroy* 10755-10758. 10778-10785.

Great difficulty in working the thin seam mines, if boys under twelve years of age were not allowed to work, *J. Booth* 11420-11422. 11441—Especial demand for boys' labour in the thin seam mines about Wigan, *Knowles* 11557-11560—Less inconvenience in the Barnsley district than in thin seam districts, if boys were not allowed to enter the mines till twelve years old, *Jeffcock* 11708-11712.

Protest against a prohibition upon the employment of boys under twelve, or to a limitation of their labour to eight hours daily, as exceedingly detrimental not only to witness's firm, but to the owners of thin mines generally, *Chambers* 12110-12123—Advantage of having small boys where the seams of coal are very thin, *Mathews* 12203—Difficulty of adults in commencing work in a thin seam mine, *ib.* 12370.

Thornley Colliery (Durham). Reference to an explosion at Thornley Colliery in August 1865, as having been owing partly to neglect; doubt, however, whether the jury should have returned a verdict of manslaughter, as there did not appear to be any violation of rule, *Atkinson* 8860. 8868-8871.

Timber for Props. See *Falls of Roof*.

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Trimdon Colliery (Durham). Particulars in connection with a fatal accident from explosion at Trimdon Colliery in June 1865; concurrence in the verdict of the coroners' jury on this occasion, *Atkinson* 8860-8867. 8872-8874.

Troedrhiw Colliery (South Wales). Sufficiency of the ventilation in the Troedrhiw pit, the men being able to work with naked lights without any explosions having occurred, *Griffiths* 6551. 6560-6571—Sufficient supply of timber in the Troedrhiw mine; very few accidents having occurred from falls of roof, *ib.* 6576-6581—Sufficient width of the tramways in the mine to prevent any one being crushed against the sides, *ib.* 6585-6592—Information relative to the accident club in connection with the colliery, and the amount of relief thereby in cases of accident, *ib.* 6727-6744—Non-employment of a check weighman at the mine, it being apprehended that the owners would object, *ib.* 6745-6749.

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1. *Generally as to the Character and Defects of Furnace Ventilation in the several Districts.*
2. *Improvement required in the Size and Arrangement of the Air Courses.*
3. *Question of Ventilating all Accessible Places or Old Workings.*
4. *Question of Removing the Restriction under the First General Rule.*
5. *Mechanical Ventilation.*
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7. *Suggested Ventilation by Means of Regulators, without the Use of Doors.*
8. *Suggested Increase of Inspection with reference to the Ventilation.*
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1. *Generally as to the Character and Defects of Furnace Ventilation in the several Districts.*

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5. Mechanical Ventilation:

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7. Suggested Ventilation by means of Regulators, without the use of Doors:

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8. *Suggested Measure of Inspection with reference to the Ventilation*—continued. machinery and doors not being properly managed; question as to inspection guarding against this, *Normansell* 3508-3523.

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W.

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Combination among the Scotch colliers by which the output of coal is restricted as a means of raising wages; effect of this restriction in raising the price of coal, *Moore* 7821-7837. 7854-7867; *Hood* 13369-13375; *Burns* 13631-13638; *Baird* 14149-14160—Inducement to colliers to employ boys under them as entitling them to put out daily a larger quantity of coal than is allowed under the restrictions of the trade; extra amount allowed for boys of different ages, *Moore* 7821-7828. 7854-7867.

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Water Gauges. Amendment required on the 13th general rule with reference to steam boilers being provided with water gauges, *Evans* 9414-9425.

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WEIGHING SYSTEM (PAYMENT OF WAGES):

1. *Representations on the part of the Men in favour of Payment by Weight instead of by Measure.*
2. *Representations relative to the Appointment and Powers of Check Weighmen.*
3. *Regulations suggested as to the Conduct of the Weighing.*
4. *Suggested Inspection of the Weights and Machines.*
5. *Explanatory Statements by Owners and Managers, together with objections to Weighing being Compulsory.*
6. *Views expressed by Government Inspectors.*

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1. Representations on the part of the Men in favour of Payment by Weight instead of by Measure :

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Expediency of weight being substituted for measurement in the Wigan district, and of the weights being subject to the supervision of the inspector, *Pickard* 2383-2385, 2398, 2399, 2416-2422—Statement in support of the substitution of weight for measurement, in the payment of miners near Manchester, *Ackersley* 2786-2799—Statement in favour of the system of weighing being substituted for that of measurement in the St. Helen's district, *Woodward* 2809-2829—Instances of refusal by masters in the district to substitute weight for measurement, *ib.* 2815-2820.

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2. Representations relative to the Appointment and Powers of Check Weighmen :

Grounds for the suggestions that, as regards the weighing of the coal, the men should have the privilege of employing whom they please as weighman, *Burt* 269, 270, 313-336, 342-344—Disapproval of the power of the owners to object to weighmen appointed by the men, when such weighmen are not employed in the mine, *Crawford* 575, 576—Practice as to the appointment by the colliers, of the man to watch the weighing or measuring on their behalf: expediency of its being optional to employ any one not connected with the respective collieries, *Baxendale* 1552-1559—Advantage if there were a penalty against owners for obstructing the person appointed by the colliers to attend to their weighing or measuring, *ib.* 1573, 1574, 1583.

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1. *Generally in Disapproval of the Employment of Women on the Pit Bank.*
2. *Evidence in Defence of the Employment of Women.*
3. *Character of the Women's Dress.*
4. *Character of the Labour, and Rate of Wages.*
5. *Education.*
6. *Total Number Employed.*
7. *Several Districts in which not Employed.*
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1. *Generally in Disapproval of the Employment of Women on the Pit Bank:*

Opinion that female employment about the collieries should be prohibited, although widows and others now obtain a livelihood thereby, *P. Dickinson* 706-710. 797-801—Demoralising effect of the employment of women, on the surface, in the Wigan district, so that witness would like to see such employment prohibited altogether, *Bazendale* 1261-1274. 1309-1318. 1328-1337—General feeling in the Wigan district as to the employment of women in the mines, or on the pit's bank, being degrading and immoral; grounds for this conclusion, *Pickard* 1715, 1716. 1732-1742. 1749-1753. 1770-1778. 1801, 1802. 1806-1809—Increased employment of women in the Wigan mines through the cotton famine, *ib.* 1727-1732.

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1. Generally in Disapproval of the Employment of Women, &c.—continued.

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5. *Education:*

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6. *Total Number Employed:*

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