Prize Medal, value Ten Guineas, for the best paper to be read during the present Session.

Mr. WALTER M. NEILSON moved that a sum of Two Hundred Pounds should be voted for the purchase of Books, to form the nucleus of an Institution Library.

Mr. R. BRUCE BELL seconded the motion; and after remarks from various members approving of the proposal, it was unanimously agreed to, it being remitted to a Committee, consisting of Messrs. Johnstone, Neilson, Bell, M'Onie, and More, to secure a suitable place for the books, and to report thereon at the next meeting, when a confirmatory vote would be taken.

The PRESIDENT delivered the following Introductory Address:—

GENTLEMEN,—In appearing before you, I think it right to tender you my best thanks for the honourable position you have placed me in, by electing me President of this rising, and what I trust it will yet be, great and useful Institution; and while I do so, I cannot but feel that the important duties attaching to the office would have been more efficiently discharged by some other of its members, although by none who has more at heart the interest of the Institution. I crave, therefore, your indulgence for any deficiencies and shortcomings.

I have not the same cause as my worthy friend who preceded me, to regret, as he did at the opening of his last address, that few papers had been read and discussed before the Institution; as during last Session, there was not only a good number of them, but they were all of a highly interesting character, and at once calculated to advance science, and throw much light on the various subjects treated.

It must indeed be generally admitted that the volume of our Transactions for last Session, just issued to the members, exhibits a decided advance upon the previous reports of our earlier proceedings; and this whether we consider the amount of matter, the importance of the subjects discussed, the value of the information elicited, or the increased willingness of our members to take part in the discussions. As showing the great interest taken in the subjects brought before us last Session, I may remind you that the discussion of some of them was renewed on several different evenings.

The important subject of Air Engines was introduced at the first meeting by our late President; who exhibited in actual operation, a small engine of this kind made by Ericsson, and brought over from New York. The chief merit of this little engine appeared to be its convenience in application, where a very small power was required; but it did not seem to be economical in the use of fuel. The subject was resumed at the third meeting by Mr. Patrick Stirling, who gave us a description of, and the practical results obtained by the earliest air engine ever in operation for any length of time, and which was erected by Mr. James Stirling at Dundee in 1842—the economy in fuel of which has hardly been surpassed during the interval since that date. It is true the particulars given in the paper had been furnished to the Institution of Civil Engineers some years ago; but the Council, in requesting Mr. Stirling to read it, believed that the time had arrived when it was desirable to re-open the discussion of the subject, which could not be done better than by the paper in question. The extremely interesting discussion which followed, fully justified this step. Stirling and Ericsson's engines were compared, and the important differences in their modes of action considered, and the advantages of the former pointed out. It appeared that Stirling's could be made to work satisfactorily up to fifteen or twenty horses power; but that for larger powers, great difficulty was experienced in getting heaters to stand. The subject was again brought up at the last meeting of the Session by Mr. Lawrie's elaborate theoretical paper on the Operation of Air Engines; and in the discussion which followed, a prominent part was taken by Professor Rankine and Mr. Brownlee, who contributed valuable materials towards the elucidation of the subject. It is not, however, by any means, exhausted, and there is reason to expect that we shall have additional papers during the present Session. In some respects, if theoretical promises are realized, the air engine should apparently possess advantages superior to those of the steam engine; and the prosecution of the subject should not be relinquished, until practical difficulties are overcome, or the supposed advantages proved to be imaginary.

At our second meeting we had useful papers read by Professor Rankine on Engineering Field-work, and by Mr. Froude on the Junction and laying out of Railway Curves—another branch of the same subject. The former supplied rules for ranging and measuring the inaccessible parts of straight or curved lines; whilst the latter entered with extreme minuteness into the important questions of the cant that should be given to the outside leg of the curve, and the best modes of uniting two unequal or contrary curves, or a curve with a straight line. The discussion of the subject was again taken up at the fourth meeting, when additional matter was furnished by Mr. Froude, and the particulars of a case of sharp reversal of curvature on the South Devon Railway were given by Mr. Bell

—showing that a careful and pains-taking correction of the line by those in charge, in accordance with the indications of defects produced by passing trains, had gradually brought it to closely approximate to Mr. Froude's curve. A small portion only of our members took an interest in the subject of this paper. In an Institution, however, like our own, designed to comprise and bring together all classes of engineers, something of that kind must occasionally happen; but it should be remembered that the interest of our Transactions is considerably enhanced by the variety in the topics of the papers they contain; and each of us should bear in mind, when listening to a paper of little interest to himself, that other papers of more interest to him may have been of considerably less to other members. It is due, however, to Mr. Froude to award him special praise for the very interesting manner in which he treated the subject, and for the very great care and labour bestowed by him in order to render it as complete as possible. It is a paper which well deserves to be referred to as an example by future contributors to our proceedings. In it and the discussion which followed thereon will be found sufficient *data* to guide and educate the young engineer in this important branch of civil engineering; and there is no other branch that I consider more necessary for an engineer to make himself thoroughly master of than this. It will have the effect of economizing time in the laying out of a railway, and capital in its construction; while it will insure mathematical accuracy in the laying down of the permanent way and works, as well as their maintenance on correct principles.

At our fourth meeting, we had two papers from Mr. Simpson, one describing an improved pump, which was illustrated by a working model. The Institution will, I am sure, be glad to receive from Mr. Simpson an account of the practical application of this pump to mines; its trial on a large scale having been recommended when the paper was read.

Mr. Simpson's second paper was on the Ventilation of Mines. It described a very ingenious apparatus for indicating the dangerous presence of explosive gas; and with respect to it, the Institution also hope to receive an account of practical experiments which were to be undertaken to test the range and accuracy of the indications. If these experiments are satisfactory, the instrument will be a most valuable protection for the miner.

We had during the Session another paper relating to mines, by Mr. James Ferguson. It treated principally of underground mineral transit. It was highly interesting, and will prove to be a valuable paper for reference, on account of its numerous and carefully narrated statistics, and its elaborate comparisons of the different modes of underground conveyance hitherto and at present in use.

The subject which last Session elicited the keenest discussion was that of the Surface Condenser, introduced at the fifth meeting by Mr. Davison's paper, and resumed at the sixth and eighth meetings. It has been remarked that, in this discussion, there was a little too much irrelevant contention between the advocates of rival plans; but it must not be forgotten that, without this element of rivalry, those taking part in the discussion would not have felt themselves impelled, as they were, to supply us with the large amount of information, the numerous facts and practical results, and the various considerations, both in favour of and against each plan, which were actually elicited; and all of which should be known and considered by every one desirous of selecting the best condenser. It is in laboriously endeavouring to devise a condenser (or other useful machine) that shall surpass all others, and thus confer a benefit on the community, that an individual becomes the interested advocate of a particular kind. It is natural to suppose that such a person has studied the subject more than one not specially interested in it, and in consequence of such study he should be more able to supply correct information and advice upon it. It is always the *best* information and advice on any subject brought up which the Institution is desirous of eliciting and placing upon record; and if we except purely theoretical subjects, it is from interested advocates of particular views and plans that we should expect to get it. The reading of papers before institutions like this, even though it be by interested advocates of the plans such papers describe, cannot in any sense be likened to ordinary advertising. In the latter, everything that can be said in praise is fully written up, and much there are no grounds for; whilst all particulars on which the readers can exercise their own judgment are studiously omitted. In the former, the author challenges the criticism of his hearers, exposes his plans to comparison with any others that may be brought forward, and submits his advocacy to searching examination. His paper is thoroughly discussed, and as the result of discussion, his views may be confirmed and advanced, or, it may be, discouraged and negatived. He risks this from a *bonâ fide* belief in the merits of his plans; but whatever the result, the Institution will have elicited the best information on the subject that is obtainable from its members.

At the Fifth Meeting our attention was also directed to the subject of Gas Engineering by Mr. David Laidlaw. It was not Mr. Laidlaw's design to introduce to our notice any special novelties, nor to enter into any very abstruse questions; but he gave us, in an interesting and concise manner, a brief retrospect of past doings, and a general view of modern practice, in that important department of engineering. Mr. Bartholomew contributed considerably to the interest taken in the subject, by presenting us with drawings and description of the large gasholder and tank recently erected from his designs by the Glasgow City and Suburban Gas Company.

At our Ninth Meeting we had Mr. Milne's most valuable paper describing the removal of the Junction Lock at Grangemouth, and its replacement by an enlarged lock, forming an important addition to his contribution of the previous Session, which also related to improvements in the canal works at Grangemouth. These papers are of a class that, I think, the Institution ought to be desirous of encouraging, on account of the value they impart to the Transactions, from their importance as articles of reference. The simple and concise phraseology, and the quantity and minuteness of details, both in the description and drawings—upon which the practical value of such papers mainly depends—entitles them to be taken as standard examples for future authors of similar ones; but they have also the advantage of describing engineering expedients, remarkable not only from the nature of the difficulties to be overcome and from their novelty, but also from the ingenuity displayed in devising them, the skill shown in carrying them out, and, above all, from their small cost compared with the practical advantages derived from them.

We had, finally, Mr. Simpson's paper on Canal Locks, which was illustrated by a working model. Mr. Simpson remarked on the great waste of water involved in the ordinary lock system, and proposed as a substitute a very ingenious plan, exceedingly simple in its action, and which promised to be considerably less costly in construction, working, and maintenance, than mechanical lifts, such as that at Blackhill on the Monkland canal; whilst the expenditure of water would be reduced to a minimum, and in some cases altogether obviated. It appears to me this plan merits careful consideration.

Having gone over the various papers brought before the Institution during the last Session, I shall only shortly refer to some of those subjects which I think ought to continue to engage the attention of the members of the Institution, and to obtain from them valuable papers thereon.

The subject of mining is one of great importance, and there is none more deserving the attention of the engineer, with the view towards an improvement in the mode of conducting underground operations—tending not only to improve the condition of the miner in every respect, but economizing to the proprietor the cost of production. The produce of our mines, whether considered as the great element of industry, or as the mighty agent used for the production of mechanical power alone, is well deserving of the consideration of the members of this Institution. Before the days of Watt and the steam engine, the mining of this country was meagre and insignificant compared to the important position it has since acquired. The steam engine, which gave the miner facility for draining the seams of coal and ironstone, also enabled him to make deeper shafts, obtain larger outputs, and carry them to markets never dreamt of until the days of the steam engine and rail.

The field of labour under this head is wide, and always attractive to the mechanical engineer. It is doubtful if the genius of Watt, when he first took up the steam engine, could have found more congenial employment than in scheming and arranging its details to win and unwater the vast fields of coal which lay deep and inaccessible throughout the country. It is well known that the extensive fields of the north of England gave rise to the first practical development of the idea of locomotives and rails.

From reliable sources we learn, that the annual produce of coal throughout Great Britain has now reached the enormous output of 80,000,000 tons. It would be difficult to arrive, even approximately, at the power of the machinery employed to lift this ponderous weight to the surface, scattered as it is throughout all parts of the country. It is calculated, however, to be not more than a fourth of the total power required to raise it and the drainage; or, in other words, for every ton of coal lifted, there are three tons of water. It has been estimated that nearly one-sixth of the total annual produce of our coal mines is used for the production of mechanical power alone, from which a power equal to 66,000,000 able-bodied men is obtained; and, upon the same calculation, the total annual production of the United Kingdom is equal to the strength of 400,000,000 men, or more than double the number of adult males now upon the globe. The mechanical appliances employed underground are daily increasing; and the engineer who could contrive and arrange a locomotive to suit the peculiarities of underground haulage, would receive and well deserve the lasting gratitude of the coal owners of this country. Though various schemes have been tried to introduce machinery to work coal, I am not aware that any of them have been found effective or practically useful. However, the many ingenious contrivances to be found in our workshops and engineering establishments for reducing manual labour, would induce the general observer to anticipate that even in coal-hewing the time may not be far distant when some mechanical arrangement will be introduced to aid and economize the labour. Though no very alarming question has yet been put regarding the duration of our coal-fields, it is well known that more attention has of late been paid to the economizing of them. Modified and improved systems of mining are being gradually introduced; and these improvements, while they reward the enterprising, keep this country ahead of other countries, from the aid and impetus which a cheap supply of fuel gives to the manufacturer.

Situated, as we are, in the centre of a rich and extensive mineral field, enjoying the advantages of cheap coal and iron, we cannot forget that the hands who produce so much of this country's wealth are subject to many painful casualties; for we have now the means of knowing that, throughout the mines of the United Kingdom, upwards of a thousand persons, from various causes, are sacrificed annually. In this immediate neighbourhood we have lately been startled by one or more of these disastrous occurrences; and while those best informed on these matters seem not to calculate upon more than an amelioration of such calamities, yet, it is clearly the province of this Institution to foster and encourage every aim having for its object the safety and improvement of this useful and invaluable class of men.

During these days of general progression, the locomotive engine has not been stagnant, but has been becoming gradually more matured, and its powers more fully developed. From the great advantages derived from machinery in its construction, and from the superior description of materials now used, engines are manufactured with a precision approaching perfection, thereby largely diminishing the cost of construction, and greatly increasing their powers of endurance. As an instance, I may mention the pretty general introduction of cast-steel tires, which, from their superior quality and hardness, will last twice as long as the best Yorkshire iron, and, from their great toughness and strength, will be much less liable to accident than those presently in use. I think before many years cast-steel will be universally adopted for the tires of both engine and carriage wheels. The chief objection to them at present is their cost—an obstacle which, I have no doubt, will be got over as the demand for them increases.

Perhaps the greatest improvements that have been made on locomotive engines of late, however, have been more immediately connected with the economy of their use. Since the introduction of coal as a substitute for coke, it is gratifying to know that the same work can now be done for one penny per mile which only very lately cost threepence; and, as an illustration of this, I may mention that some passenger trains, having a gross weight of from fifty to sixty tons, are now propelled at a speed of forty miles an hour, at a cost of a fraction over a farthing per mile for fuel. Not long ago, eightpence to tenpence per train mile was considered no extravagant sum to pay for locomotive power; the same work is now done for something less than sixpence. This result has, no doubt, been brought about by the attention that has been paid to the construction and working of the locomotive engine. No doubt much remains yet to be done by skilful and enterprising mechanics; but, I must say, it seems at present difficult to point out by what means much greater economy, in fuel at least, can be obtained.

Giffard's feed injector appears to me destined to play an important part in locomotive economy. From its perfect simplicity in construction, being entirely without parts in motion, there is a complete exemption from the tear and wear consequent on the use of pumps, with their various valves, plungers, and conducting pipes. Unlike the ordinary pump, it is entirely free from liability to damage by frost in severe weather; while the engineman can feed his boiler when the engine is at rest, in a siding or other situation where he could not pump water by the old arrangement—and so getting rid of donkey engines and pumps, and their attendant tear and wear. The ease with which it can be applied to any position that may be wanted, and the readiness with which the method of working it can be picked up by an ordinary fireman in a few minutes, insures its almost universal adoption at no distant date. I am aware of instances where locomotive engines employed in all descriptions of traffic for months past, having no other means of supplying their boilers with water; and in no instance has there been the slightest detention to the trains or want of action on the part of the injectors, and the engine-drivers have the fullest confidence in them. I believe the only conditions to be carefully attended to with them is the using of pure water, and the maintaining of the water to be injected under a temperature of 130°, as above that heat the water does not seem to be capable of condensing quickly enough the steam which is used to force the water into the boiler. It seems to be equally manageable at all pressures of steam; and one of its peculiarities is, that the higher the pressure of the steam, and consequent resistance of the water in the boiler, the greater is the quantity of water it will deliver in a given time.

Allan's pressure gauge is another recent and very successful improvement in the locomotive engine. This gauge indicates the pressure by the compression of a quantity of air, which can be measured and renewed at any time by the turning of a couple of cocks, the engine-driver being thus at all times able to assure himself that it is in accurate working order. I am glad to say that it is beginning now to be pretty generally adopted.

I have noticed what occurs to me to have been the most prominent improvements recently made on the locomotive engine; and, as regards the carrying stock of railways, it appears to me that the most important improvement is their increased capacity, whereby each carriage and waggon is made capable of carrying double the load of the old ones, and that without greatly increasing the weight of the vehicles, while only the same number of wheels and axles is employed: so that the tear and wear has not increased in the same ratio that it would have done had the same original description of plant been perpetuated. And while these improvements have been made in the carrying stock, it is evident that the same amount of tonnage can be shifted with a much less expenditure of locomotive power than formerly.

I may further call attention to the use of malleable-iron girders in the construction of railways and other works, and the adoption of cast-iron cylinders for the under structure of bridges and viaducts, where such required to be carried over rivers and streams of considerable depth. One of these has been constructed by Messrs. Blyth of Edinburgh for carrying the Portpatrick railway over Loch Ken in Kircudbrightshire. It consists of three water arches, with land arches on each side. The two water piers are founded in very deep water, considerably above twenty feet. The cylinders are somewhere about eight feet in diameter. After the cylinders were loaded and sunk to their proper depth, and the stuff excavated from the interior, they were securely built inside with solid ashlar freestone wrought to the circle of the cylinder. The top of the cylinders correspond nearly with the ordinary level of the loch, upon which ashlar piers are raised to the level of the lattice girders for carrying the permanent way. It is altogether a very neat and substantial structure, and reflects great credit upon the designers. I have procured photographic views of it, which are now laid on the table for the members' use. The great advantage such a work has over the old plan of building viaducts in such a situation, is the facility afforded in obtaining a foundation for the piers, without resorting to the expensive, tedious, and uncertain process of coffer dams. This plan is also being adopted for carrying the Charing Cross railway from the Hungerford markets across the Thames to the Surrey side, in the site of the present suspension bridge.

I shall not detain you longer, but will conclude by urging on the members to exert themselves in laying before the Institution, during this present Session, papers on some of the subjects to which I have referred. Having so many members connected with the profession of civil engineering, I have no doubt that valuable information could be obtained on these subjects, whereby the discussions would be more varied, and the promoters of such works, and the community generally, greatly benefited.

With respect to the financial position of the Institution, I am glad to say that it is at present in a flourishing condition; but there can be no doubt that the reduction in the amount of yearly subscriptions from £2 2s. to £1 10s. will tend to reduce the income, unless supplemented by an augmentation of new members; and I would press on you the necessity of recommending as members parties who are suitable for being admitted into the Institution.

The members of the Institution during the various Sessions since its commencement stand as under:—

First Session, 1857–58, . . .	118
Second Session, 1858–59, . . .	132
Third Session, 1859–60, . . .	145
Fourth Session, 1860–61, . . .	149

Many amongst us will now be preparing for the great event of next year—the second of, I trust, a long series of international exhibitions to be held in this country. There is every indication that it will prove even more successful than the first great experiment of 1851. It might reasonably have been feared that the present depressed state of trade would have acted prejudicially. This seems, however, not to be the case, as it has been officially announced that the amount of space applied for from the United Kingdom reaches seven times that which Her Majesty's commissioners have at their disposal; whilst our neighbours, the French, refuse to be satisfied with the very large amount of 132,000 square feet which has been allotted to them. It is gratifying to be able to state that Glasgow will not be behind-hand in contributing to the Exhibition; and that, in the department of the engineering and mechanical arts, at any rate, a much greater amount and variety of articles will be sent than in 1851. As it will doubtless be interesting to you to know what is proposed to be sent from this district, I shall now conclude my remarks with a statement prepared for me by Mr. Hunt, who has acted as Secretary to the Glasgow Committee, Section II.

Her Majesty's commissioners have divided the articles to be exhibited into about seventy classes, and these they have grouped into four sections. Section I. includes classes 1 to 4, with a few sub-classes, and relates to mining, metallurgy, chemical processes, food, and raw materials generally. Section II. includes classes 5 to 17, and numerous sub-classes, and comprises the mechanical arts and engineering. Section III. comprises textile and miscellaneous manufactures; and Section IV. relates to the fine arts. Section II. obviously embraces the objects of chief interest to this Institution, and it is solely to this section that the following particulars relate:—

CLASS 5. Railway plant, including locomotive engines and carriages.

Locomotives, 1 exhibiter, . . .	810 sq. ft.
Castings for permanent way—railway chairs, sleepers, &c., and an iron tramway, 2 ex., 72, 60, ...	132 "

CLASS 6.	Carriages not connected with rail or tram roads.	
	Carriages, 3 ex., 196, 91, 72, . . .	359 sq. ft.
	Private Omnibus, 1 ex., . . .	91 "
	Carriage propelled by manual power, 1 ex., .	24 "
CLASS 7.	Manufacturing machines and tools	
7a.	Spinning and weaving machinery, 2 ex., 360, 160,	520 sq. ft.
	Yarn washing machine, 1 ex., . . .	24 "
7b.	Machines and tools employed in the manufacture of wood, metal, &c., &c.	
	Machine tools and edged tools, 4 exhibiters, 450, 173, 162, 152, ...	937 sq. ft.
	Steam hammers 4 exhibiters, 300, 200, 81, 27,	608 "
	Rivetting machine, 1 ex., . . .	81 "
	Sugar mills with engines, 3 ex., 1764, 1170, 986, } Sugar-evaporating pans, 1 ex., 256, . }	4176 "
	Wood-moulding machine, 1 ex., . .	54 "
	Stationers' machines, 2 ex.—	
	Automaton ruling machine, } Envelope making do. } 115 } Embossing do. }	
	Numbering and paging machine, } Perforating do. } 25 } .	140 "
	Machine for grinding bark, 1 ex., . .	25 "
	Brick machine, 1 ex., 360 wall, 270 floor, .	630 "
	Coffee roaster, automatic, 1 ex., . .	5 "
CLASS 8.	Machinery in general.	
	Marine screw-propeller engines, 2 exhibiters, 80 H.P., 110; 60 H.P., 169, . .	279 sq. ft.
	Models of marine and other engines, 1 ex., .	1 "
	Caloric engine, 1 ex., ...	36 "
	Safety valves, gauges, and instrument for indicating pressure and flow of fluids, 1 ex., .	16 "
	Hydraulic press and pumps, 1 ex., . .	80 "
	Do. pumps, 1 ex., . . .	80 "
	Examples of frictional gearing, 1 ex., . .	396 "
	Cranes and winches, with and without steam, 3 ex., 500, 60, 77, ...	637 "
	Safety mine hoist, 1 ex., . . .	16 "
	Sewing machines, 3 ex., 300, 90, 6, . .	396 "
	Chimney-sweeping apparatus, 1 ex., . .	4 "

CLASS 9. Agricultural and horticultural machines and implements, 3 exhibiters, 500, 288, 208, . . . 996 sq. ft.

CLASS 10. Civil engineering, architectural, and building contrivances.

Models of docks and engineering works on Clyde, 1 exhibiter, ...	84 sq. ft.
Model of new slip-dock, cradle or carriage, &c., 1 exhibiter, ...	45 "
Model of self-acting tide and time gauge, 1 ex., .	24 "
Collection of building materials used in Glasgow —Committee, ...	150 "
Compositions to preserve stone, &c., 2 ex., 64, 16,	80 "
Cast-iron pipes and castings, 3 ex., 360, 168, 150,	678 "
Gas apparatus, tubes, &c., 1 ex., . .	48 "
Iron beams for flooring, roofing, &c., 1 ex., .	150 "
Sash lift and fastener, 1 ex., . . .	4 "
Architectural cast-iron work, 1 exhibiter, 72 floor, 480 wall, ...	552 "
Composite, monumental, and memorial structures, 400 floor, 240 wall, . Model of cemetery arrangements, 100, . Cast-iron fountains, 250, . .	1 ex., 990 "

10*b*. Domestic economy.

Sanitary structures and apparatus, 3 exhibiters, 2700, 375, 84, 100 wall, . . .	3259 sq. ft.
Fire plugs, hydraulic ram, force and lift pump, &c., 1 ex., ...	70 "
Smoke and air ventilators, 1 ex., . .	15 "

CLASS 11. Military engineering, armour and accoutrements, ordnance and small arms.

11*a*. Clothing and accoutrements, no exhibiters.

11*b*. Tents and camp equipages, do.

11*c*. Arms, ordnance, &c.—

Fowling-pieces and rifles, 1 ex., . .	10 sq. ft.
Field gun, and mortar with shells, 1 ex., .	80 "
Miniature targets for position and aiming drill, 1 ex., 2 wall, ...	2 "

CLASS 12. Naval architecture—ships' tackle.

12*a*. Shipbuilding for war and commerce.

Models of vessels, 3 ex., 60, 90, 18, . .	168 sq. ft.
Apparatus for submerging cables, 1 ex., .	6 "

CLASS 12*b*. Boat and barge building, and yachts, no ex.
12*c*. Ships' tackle, rigging, &c.
Preservative composition for ships' bottoms, &c., 1 exhibiter, ... 72 sq. ft.

CLASS 13. Philosophical instruments, and processes depending upon their use.
Electrometers, 1 ex., 27, . . } 43 sq. ft.
Nautical and mathematical insts., 1 ex., 16, }

CLASS 14. Photographic apparatus and photography, 1 ex.

CLASS 15. Horological instruments, 1 ex., 65 floor and 52 wall, 117 "

CLASS 16. Musical instruments, no exhibiters.

CLASS 17. Surgical instruments and appliances, 3 ex., 25, 9, 3, 37 "

Total space applied for from Glasgow, Section II., nearly 17,500 square feet.

On the motion of Mr. W. M. NEILSON, a hearty vote of thanks was passed to the President for the interesting address the members had just listened to.

The following paper was then read:—