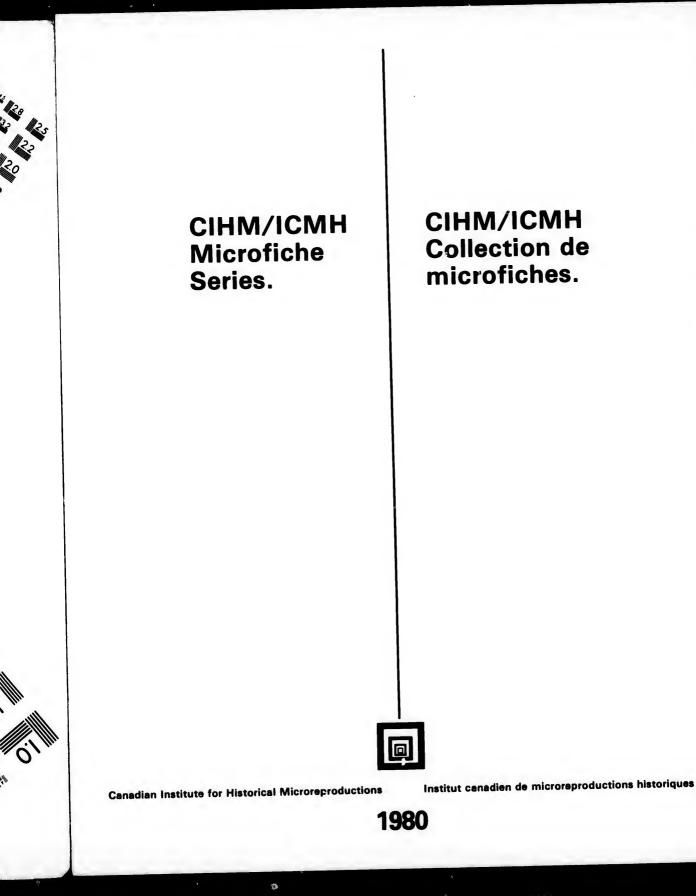


C

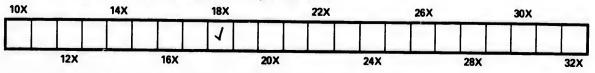


Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below. L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/		Coloured pages/	
Couverture de couleur		Pages de couleur	0
			b
Covers damaged/		Pages damaged/	tł
Couverture endommagée		Pages endommagées	si
			01
Covers restored and/or laminated/		Pages restored and/or laminated/	fi
Couverture restaurée et/ou pelliculée		Pages restaurées et/ou pelliculées	si
			0
Cover title missing/		Pages discoloured, stained or foxed/	
Le titre de couverture manque	\checkmark	Pages décolorées, tachetées ou piquées	
		• • • • • • • • • • • • • • • • • • •	
Coloured maps/		Pages detached/	Т
Cartes géographiques en couleur		Pages détachées	st
			TI
Coloured ink (i.e. other than blue or black)/	<u> </u>	Showthrough/	w
Encre de couleur (i.e. autre que bleue ou noire)		Transparence	
			M
Coloured plates and/or illustrations/		Quality of print varies/	di
Planches et/ou illustrations en couleur		Qualité inégale de l'impression	en
		addine megale de l'impression	be
Bound with other material/		Includes supplementary material/	riç
Relié avec d'autres documents		Comprend du matériel supplémentaire	re
		eenipiena au materier supplementaire	m
Tight binding may cause shadows or distortion	_	Only edition available/	
along interior margin/		Seule édition disponible	
La reliure serrée peut causer de l'ombre ou de la		Serie addion disponible	
distortion le long de la marge intérieure		Development in the second second	
		Pages wholly or partially obscured by errata	
Blank leaves added during restoration may		slips, tissues, etc., have been refilmed to ensure the best possible image/	
appear within the text. Whenever possible, these		Les pages totalement ou partiellement	
have been omitted from filming/		obscurcies par un feuillet d'errata, une pelure,	
Il se peut que certaines pages blanches ajoutées		etc., ont été filmées à nouveau de façon à	
lors d'une restauration apparaissent dans le texte,		obtenir la meilleure image possible.	
mais, lorsque cela était possible, ces pages n'ont			
pas été filmées.			
Additional comments:/			
Commentaires supplémentaires:			

This item is filmed at the reduction ratio checked below/ Ce document est filmé au taux de réduction indiqué ci-dessous.



Ti to

T

p

of

fil

The copy filmed here has been reproduced thanks to the generosity of:

Milis Memorial Library McMaster University

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol \longrightarrow (meaning "CON-TINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:

2

1

L'exemplaire filmé fut reproduit grâce à la générosité de:

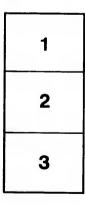
Mills Memorial Library McMaster Univarsity

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'Impression ou d'Illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'Illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole → signifie "A SUIVRE", le symbole ▼ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.



1	2	3
4	5	6

3

e Stails S du Iodifier r une Image

8

rrata :o

pelure, nà



<u>Baillair</u>ge's ste<u>reom</u>

HONORARY MEMBER OF THE SOCIETY FOR THE GENERALIZA

(Patented in Canada, in the United States of

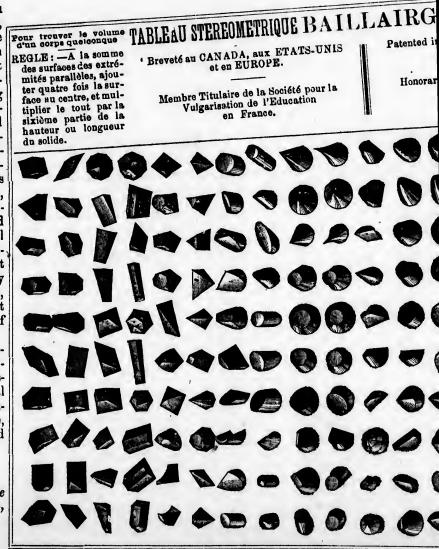
This is a Case 5 feet long, 3 feet wide and 5 inches deep, with a hinged of exhibiting, and affording free access to some 200 well-finished Hardwood M form, each of which being neatly attached to the board, by means of a wire-p Student or Professor.

The use of the Tableau and accompanying Treatise, reduces the whole science and art of Mensuration from the study of a year to that of a day or two, and so simplifies the study and teaching of Solid Geometry, the Nomenclature of Geometrical and other forms, the development of surfaces, geometrical projection and perspective, plane and curved areas and Spherical Geometry, and Trigonometry, and mensuration of surfaces and solids, that the several branches hereinbefore mentioned may now be taught even in the most elementary schools, and in convents, where such study could not even have been dreamed of heretofore.

762

Each Tableau is accompanied by a Treatise explanatory of the mode of measurement by the "Prismoidal Formula, " and an explanation of the solid, its nature, shape, opposite bases, and middlo section.

Agents wanted for the sale of the Tableau in Canada, the United States, &c.



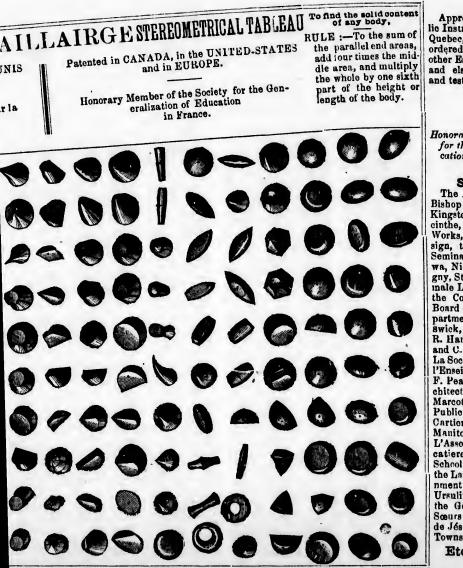
For the use of Architects, Engineers, Surveyors, Students and Apprentice Mathematics, Universities, Colleges, Seminaries, Convents and other Educati Measurers, Gaugers, Ship-builders, Contractors, Artizans and others in Canad

HOMETRICAL TABLEAU ?

HE GENERALIZATION OF EDUCATION IN FRANCE, ETC., ETC.

United States of America, and in Europe.)

with a hinged Glass Cover, under Lock and Key, so as to exclude dust while Hardwood Models of every conceivable Elementary, Geometrical or other cans of a wire-peg or nail, can be removed and replaced at pleasure, by the



Approved by the Council of Public Instruction of the Province of Quebec, and already adopted and ordered by many Educational and other Establishements in Canada and elsewhere. For information and testimonials apply to

> C. BAILLARGÉ, QUEBEC.

> > CANADA.

Honorary Member of the Society for the Generalization of Education in France, etc., etc.

SUBSCRIBERS.

The Archbishop of Quebec, the Bishop of Rimouski, the Bishop of Kingston, the Bishop of St. Hyacinthe, the Dominion Board of Works, the Schools of Arts and Design, the Laval University, the Seminary, Q., the College at Otta-wa, Nicolet, Rimouski, Montma-gny, St. Michel, etc., l'Ecole Normale Laval, les Ecoles des Frères, the Commercial Academy, the Board of Land Surveyors, the Department of Education, New Brunswick, the Corporation of Quebec, R. Hamilton, Esq., F. N. Martin, and C. Roy, Civil Engineers. etc., La Société pour la vulgarisation de l'Enseignement du Peuple, France F. Peachy, J. Lepage, etc., Ar-chitects, N. Piton, T. Maguire, J. Marcotte, builders, the Council of Public Instruction, Q., the Jacques Cartier Normal School, M. Piton Manitoba, the Colleges of Aylmer, L'Assomption. Ste. Anne de la Po-catiere, St. Hyacinthe, the High School, Q., the Morin College, Q., the Lafrance Academy, Q., Gover-nment Boards of Works, Q., the Ursulines Convent, the Convent of the Good Shepherd, Grey Nuns, Sœurs de la Congrégation. Sœurs de Jésus-Marie, Q., and M. S. W. Townsend, Hamilton, &c. &c. Etc., Etc. Etc.,

and Apprentices, Customs and Excise Officers, Professors of Geometry and other Educational Establishments, Schools of Art and Design, Mechanics, others in Canada, and elsewhere.

LECTURE BY MR

(Extract from the "Quebec Daily Men

Mr. Baillarge's lecture, on Wednesday evening last, before the Literary and Historical Society of Quebec, proved once more how very interesting, even in a popular sense, an otherwise dry and abstruse subject, may become, when ably handled.

The lecture showed the relationship of geometry to all the industries of life. He traced its origin from remote antiquity, its gradual developpment up to the present time. He showed how it is the basis of all our public works, and how we are indebted to it for all the constructive arts; its relationship to mechanics, hydraulics, optics, and all the physical sciences. The fairer portion of mankind, said Mr. B., have the keenest, most appreciative perception of its advantages and beauties, as evidenced in the ever-varying combinations so cunningly devised in their designs for needle tracery, laces and embroidery. He showed its relationship to chemistry in crystallization and polarization; to botany and zoology in the laws of morphology; to theology, and so on. In treating of the circle and other conic sections, he drew quite a poetical comparison between the engineer who traces out his curves among the woods and waters of the earth, and the astronomer who sweeps out his mighty circuits amidst the starry forests of the heavens. The parabola was fully illustrated in its application to the throwing of projectiles of war, also as evidenced in jets of water, the speaking trumpet, the mirror and the reflector, which, in light-houses, gathers the rays of light, as it were, into a bundle, and sends them off together on their errand of humanity. In treating of the ellipse, this almost magic curve which is traced out in the heavens by every planet that revolves about the sun, by every satellite about its primary, he alluded to that most beautiful of all ovals--the face of lovely woman. He showed how the re-appearance of a comet may now be predicted even to the very day it heaves in sight, and though it has been absent for a century, and how in former ages, when these phenomena were unpredicted, they burst upon the world in unexpected moments, carrying terror everywhere and giving rise to the utmost anxiety and consternation, as if the end of all things were at hand. In a word, Mr. Baillargé went over the whole field of geometry and mensuration, both plane and sperical; a difficult feat within the limits of a single lecture ; and kept the audience, so to say, entranced with interest for two whole hours, which the president, Dr. Anderson, remarked were to him as but one; and no doubt it must have been so to others, since Mr. Wilkie, in seconding the vote of thanks proposed by Capt. Ashe, alluded to the pleasure with which he had listened to the lecture as if, he said, it were like poetry to him, instead of the unpromising matter foreshadowed in the title. Mr. Baillargé next explained in detail his stereometrical tableau, which we hope to see soon iutroduced into all the schools of this Dominion. He showed how conducive it will be in shortening the time heretofore devoted to the study of solids and even to that of plane and convex superficies, spherical 1 " shorten the processes of calculation of the second sec

trigonometry, geometrical project wing, the development of surfac dows, and the like. Mr. Wilkie. had been afforded him of proy corroborated Mr. B.'s statement immense saving in time, where blems which generally required b can now (if the rule be, as Mr. generally applicable, and, as has many persons in testimonials ov tures,) with the help of the new f be performed in as many minutes the use the models are in impa knowledge of their nomenclature acquaintanceship with their varie He showed how, to the architect onilder and mechanic, the mode the forms and relative proportion domes, piers and quays, cisterns : drons, vats, casks, tubs and other eathworks of all kinds, comprising cuttings and embankments, the sl Roman column, square and wand the camping tent, the square or s door or window, nich or loophole or arched ceiling of a church or the cannon ball, or, on a larger se sun and planets. Mr. Baillargé. received an order for a tableau f Education of New Brunswick, wit ducing it into all the schools of Mr. Vannier, in writing to Mr. Bai on the 10th of January last, to granting of his letters-patent for that Messrs. Humbert & Noé, the tary of the society for the general in France, have intimated their next general meeting, of having s tion conferred on him for the ben tion and discovery are likely to Mr. Giard, in writing to Mr. Baill the Hon. Mr. Chauveau, Minister of say : "Il se fera un devoir d'en p "tion dans toutes les maisons " toutes les écoles. " From the ! University, Mr. Maingui writes plus on approfondit cette for " corps, plus on est enchanté (tl " de sa simplicité, de sa clarté et généralité." Rev. Mr. McQuar delighted to see the old an superseded by a formula so si Newton, of Yale College, United " the tableau a must useful arran " the variety and extent of the " formula." The College l'Asso " Mr. Baillairgé's system as par "instruction." Mr. Wilkie has that "the rule is precise and sim

MR. BAILLAIRGE.

ebec Daily Mercury" of 26th March, 1872.)

, geometrical projection, perspective dravelopment of surfaces, shades and shablike. Mr. Wilkie, so far as opportunity orded him of proving the calculations, Mr. B.'s statement in relation to the ing in time, where many abstruse progenerally required hours or days to solve. ie rule be, as Mr. Baillargé asserts, so licable, and, as has been certified by so s in testimonials over their own signahe help of the new formula and tableau, in as many minutes; to say nothing of models are in imparting at a glance a their nomenclature or names, and an ship with their varied shapes and figures. ow, to the architect and engineer, the nechanic, the models are suggestive of l relative proportions of buildings, roofs, and quays, cisterns and reservoirs, caulasks, tubs and other vessels of capacity, all kinds, comprising railroad and other embankments, the shaft of the Greek and m, square and waney timber, saw-logs, tent, the square or splayed opening of a ow, nich or loophole in a wall, the vault iling of a church or hall, the billiard or all, or, on a larger scale, the moon, earth, nets. Mr. Baillargé, we may add, has rder for a tableau from the Minister of New Brunswick, with the view of introall the schools of that Province; and in writing to Mr. Baillairgé, from France, of January last, to advise him of the is letters-patent for that country, says lumbert & Noé, the President and secreciety for the generalization of education ave intimated their intention, at their meeting, of having some mark of distincon him for the benefit which his invenovery are likely to confer on education. writing to Mr. Baillairgé, on the part of Chauveau, Minister of Public Instruction, fera un devoir d'en recommander l'adopoutes les maisons d'éducation et dans coles." From the Seminary and Laval Ir. Maingui writes : "Plus on étudie, profondit cette formule du cubage des on est enchanté (the more one marvels) cité, de sa clarté et surtont de sa grande

Rev. Mr. McQuarries, B. A. "shall be to see the old and tedious processes by a formula so simple and so exact." de College, United States: "considers a must useful arrangement for showing and extent of the applications of the The College l'Assomption "will adopt gé's system as part of their course of " Mr. Wilkie has written to the author is precise and simple, and will greatly processes of calculation. The tableau," says this competent judge, "comprising as it does a "great variety of elementary models, will serve "admirably to educate the eye, and must greatly " facilitate the study of solid mensuration." "Again," says Mr. Wilkie, "the Goverment would confer a "boon on schools of the middle and higher class by "affording access to so suggestive a collection." There are others who, irrespective of considerations as to the comparative accuracy of the formula, or of its advantages, as applied to mere mensuration, are awake to the fact that the models are so much more suggestive to the pupil and the teacher than their mere representation on a blackbord or on paper, and who, in their written opinions, have alluded especially to this feature of the proposed system. M. Joly President of the Quebec Branch of the Montreal School of Arts and Design, in a letter on the subject to Mr. Weaver, the President of the Board, and after having himself witnessed its advantages on more than one occasion, says, in his expressive style, "the difference is enormous." Professor Toussaint, of the Normal School, Dufresne, of the Montmagny Academy, Boivin, of St. Hyacinthe, and many others, are of the same opinion; among them MM. R. S. M. Bouchette, O'Farrell, Fletcher, St. Aubin, Steckel, Juneau, Venner, Gallagher, Lafrance, and the late Brother Anthony, &c., &c. Neither will it be forgotten that the professors of the Laval University, after reading the enunciation of Mr. B.'s formula, as given in his treatise of 1866, expressed themselves thus : "Un doute involontaire s'empare " d'abord de l'esprit, lorsqu'on lit le No. 1521; mais " un examen attentif des paragraphes suivants, dissipe " bientôt ce doute et l'on reste étonné à la vue d'une " formule, si claire, si aisée à retenir et dont l'appli-"cation est si générale." Mr. Fletcher, of the Crown Lands Department, says: "I have compared, in the "case of several solids, the results obtained by your " mode of computation with those resulting from the "ordinary and more lengthy processes, and congra-" tulate you sincerely on your enunciation of a formula " so brief and simple in its character, and so precise " and satisfactory in its results." Mr. Baillairgé also took occasion during his lecture to allude, in other relations, to his treatise on geometry and mensuration, in which he showed he has introduced many important modifications in the usual mode of treating the subject of plane and spherical geometry and trigonometry. In conclusion, we must add that the Council of Public Instruction, at its last meeting, appointed a Committee, composed of the Lord Bishop of Quebec, and of Bishops Langevin and Larocque, to report to the Council at its next general meeting in June, and who, it may be taken for granted, after the many flattering testimonials in relation to the utility and many advantages of the stereometrical tableau for purposes of education, cannot but recommend and direct its adoption in all the schools of the Dominion.

We learn with pleasure that Mr. Baillargé has been invited to repeat this lecture in Montreal.

