

UNITED STATES DEPARTMENT OF THE INTERIOR

83
3

EDUCATION IN BELGIUM



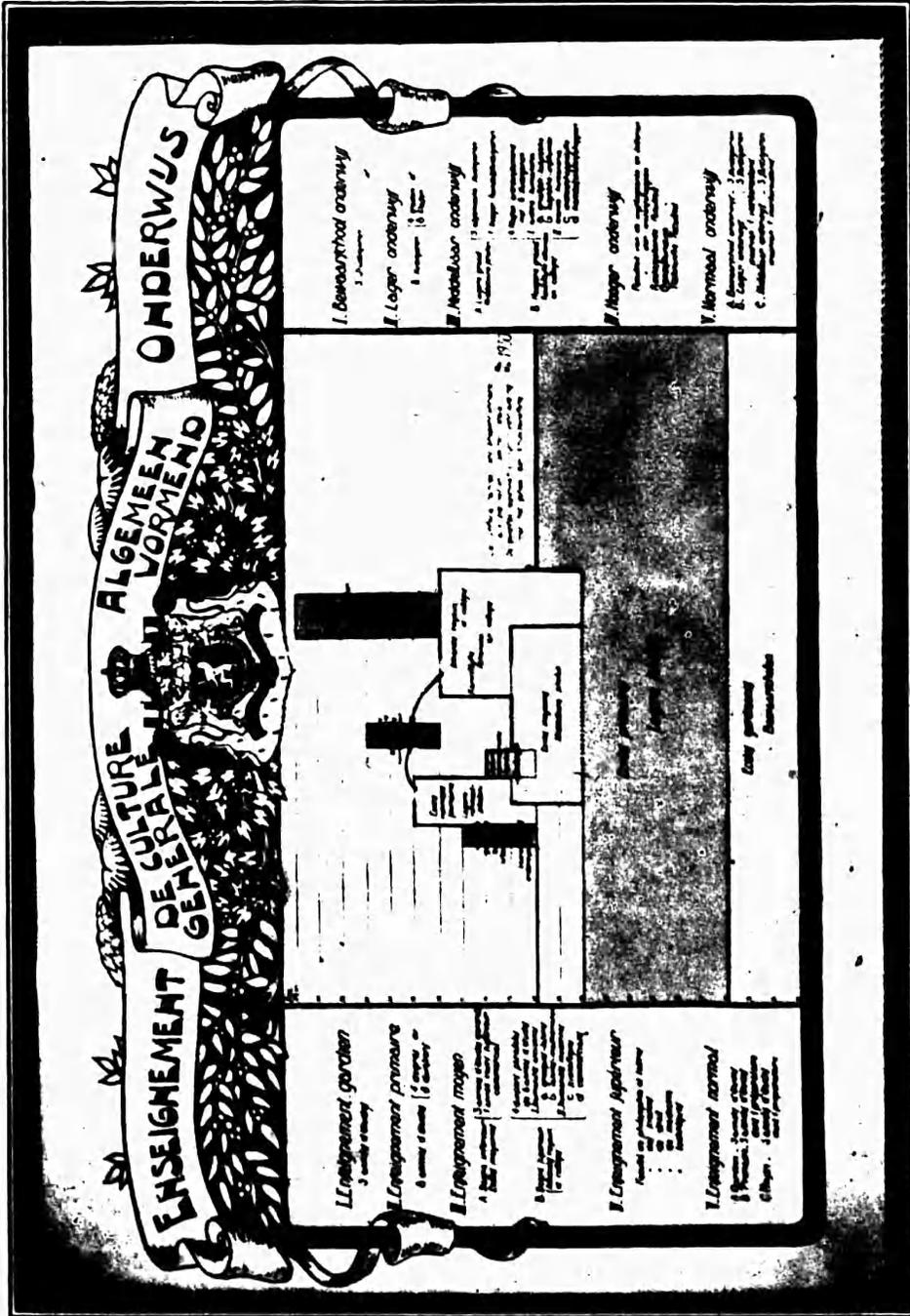
LIBRARY OF THE
UNIVERSITY OF WISCONSIN

OFFICE OF EDUCATION
BULLETIN
1932, No. 5

~~Wis. Historical Library~~

~~AUG 12 1932~~

~~Public Document Dept~~



THE ORGANIZATION OF INSTRUCTION IN BELGIUM, AS SHOWN IN THE NATIONAL SCHOOL MUSEUM, BRUSSELS

UNITED STATES DEPARTMENT OF THE INTERIOR
RAY LYMAN WILBUR, Secretary
OFFICE OF EDUCATION
WILLIAM JOHN COOPER, Commissioner

EDUCATION IN BELGIUM

By

JAMES F. ABEL

Chief, Division of Foreign School Systems
Office of Education



BULLETIN 1932, No. 5

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1932

FOR SALE BY THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON, D. C.

459223
AUG 23 1938

~~1933~~

~~1933~~

1932

5-12

L
111
A6
1932
5-12

CONTENTS

	Page
Letter of transmittal.....	VII
Introduction.....	1
Chapter I. Administration, national expenditures, and organization.....	3
Administration.....	3
National expenditures on education.....	5
Organization of instruction.....	7
Bibliography.....	9
Chapter II. Primary education (Enseignement primaire).....	10
Primary schools.....	10
Compulsory education.....	10
Administration.....	11
Programs of study.....	12
Finance.....	16
Annual expenditures and their distribution.....	17
School inspection.....	18
Statistics of primary schools.....	18
Schools for adults.....	20
Kindergartens.....	22
Medical inspection.....	23
National Office of Infancy.....	24
National Office of War Orphans.....	24
Bibliography.....	25
Chapter III. Secondary education (Enseignement moyen).....	26
Legal bases.....	26
Statistics.....	27
Expenditures.....	28
Inspection.....	29
Local board.....	30
Internal organization.....	30
School year.....	31
Recent changes in programs.....	31
Section I. Secondary education of the lower degree; middle schools.....	32
Curricula.....	32
General instruction.....	32
Ancient humanities.....	33
Modern humanities.....	34
Commercial section.....	35
Outlines of the courses.....	35
Section II. Secondary education of the higher degree; the three upper classes of the athénées and colleges.....	56
Curricula.....	56
Outlines of courses.....	57
A. Ancient humanities—Greek-Latin division.....	57
B. Latin-mathematics division.....	74
C. Modern humanities—scientific division.....	77
D. Commercial division.....	78
Bibliography.....	80

	Page
Chapter IV. The professional staff.....	81
Section I. Teacher training.....	81
Primary-school teachers.....	81
Outlines of the courses.....	85
Graduation.....	85
Kindergarten teachers.....	86
Secondary-school teachers.....	90
Middle-school teachers.....	90
Outlines of courses.....	93
Teachers in athénées and colleges.....	95
University professors.....	97
Other training schools.....	97
Primary-school inspectors.....	98
Expenditures on teacher training.....	99
Section II. Conditions of employment.....	99
Primary schools.....	99
Secondary schools.....	100
Universities.....	100
Normal schools.....	100
Inspectors.....	101
Other perquisites.....	101
Tenure and discipline.....	101
Pensions.....	102
Bibliography.....	103
Chapter V. Some special aspects of the general education system.....	104
Bilingualism.....	104
Equal instruction for equal intelligence.....	109
Neutrality in religion.....	115
Bibliography.....	116
Chapter VI. Technical and agricultural education.....	117
Technical education.....	117
Administration.....	117
Statistical summary.....	120
Agricultural education.....	121
Secondary schools of agriculture and horticulture.....	122
Bibliography.....	124
Chapter VII. Institutions of higher education, research, and culture.....	125
General education.....	125
Universities.....	125
National universities.....	127
Free universities.....	130
Higher education in agriculture.....	135
Higher commercial and technical education.....	137
Colonial institutions.....	140
Schools for national defense.....	142
Other institutions of research and culture.....	142
Bibliography.....	143

CONTENTS

v

TABLES

	Page
The Belgian national expenditures for 1928.....	6
Number of hours of lessons and exercises per week for each degree of the primary school.....	13
Number of lessons and exercises a week for boys.....	14
Number of lessons and exercises a week for girls.....	15
Expenditures for the different kinds of primary education in 1927.....	17
Total expenditures for primary education, 1923 to 1927, inclusive.....	18
Number of primary schools.....	19
Number of teachers in primary schools.....	19
Number of pupils in primary schools.....	20
Number of schools for adults, under national inspection.....	21
Number of pupils in schools for adults.....	21
Number of kindergartens.....	22
Enrollment in kindergartens.....	22
Enrollment in institutions for secondary education of the higher degree.....	28
Enrollment in institutions for secondary education of the lower degree.....	28
Expenditures in francs for secondary education in the years 1925 to 1928, inclusive.....	29
Program of studies for the section of general instruction.....	33
Program of studies in the ancient humanities, Greek-Latin, and Latin-mathematics divisions.....	34
Program of studies in the modern humanities, scientific, and commercial divisions.....	34
The division of time assigned to the different subjects of instruction in the commercial section.....	35
Program of studies in the ancient humanities, Greek-Latin and Latin-mathematics divisions (continued).....	56
Program of studies in the modern humanities, scientific, and commercial divisions (continued).....	57
Program of studies in the primary normal school.....	82
Program of study in the kindergarten normal sections.....	87
Program of study for middle normal instruction.....	91
Program of study for the preparatory year of the middle normal school.....	92
Degrees granted by authorization of the Ministry of Sciences and of Arts.....	96
Expenditures in francs for normal instruction for the years 1926 to 1929.....	99
Salary schedule of inspectors.....	101
Awards from the funds for the better endowed.....	114
Number of students in the faculties of the four universities in 1928-29, and legal degrees granted in 1928.....	134

LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
OFFICE OF EDUCATION,
Washington, D. C., April, 1932.

SIR: Attached hereto is a manuscript which has been prepared by Dr. J. F. Abel. It results in part from his visit to Europe a year ago last fall. To it the National Ministry of Sciences and of Arts of Belgium, and many school administrators and teachers in that country have contributed. To them, for their courtesies extended to Doctor Abel both in information given him and sources of data opened to him, our thanks are due. In the treatment of education in Belgium there seems to be very little authoritative material in English and it is believed that this manuscript will fill a need. Accordingly I recommend that it be published as a bulletin of this office.

Respectfully submitted.

WM. JOHN COOPER,
Commissioner.

The SECRETARY OF THE INTERIOR.

VII

EDUCATION IN BELGIUM

INTRODUCTION

The people of the Kingdom of Belgium (Royaume de Belgique) at the close of the nation's first century of independence, have systems of schools and allied institutions of wide variety designed to guide and aid their citizenry in proper development from earliest infancy to and during the adult years. Living in a territory long inhabited by virile, independent peoples, they hold records of more than 20 centuries of experience on which to base present action and from which to direct their future. Out of that experience and its wealth of cultural tradition they draw the foundations for carefully constructed systems of general education, one official and neutral in religion, the other private and sectarian. Situated as they are at a meeting point of the Dutch, French, English, and German civilizations, they value highly a broad knowledge of all human life and have a fine concept of right international relations. Made up of two nearly equal groups each with its own mother tongue, they carry on their public affairs including education in two and sometimes three language media. Well-placed for trade, they have attained high rank in commerce and industry and maintain and heighten that rank by the training given in many kinds of commercial, technical, and industrial schools. Closely crowded in a small area whose agricultural resources they must use to the utmost, they have arranged a good scheme of agricultural education. Held responsible by other nations for the administration and betterment of a large area in tropical Africa with a native population greater than their own, they prepare men and women to deal wisely with races living on a cultural level and in conditions very different from those in Belgium.

Such schemes of training, worked out and operated by folk on a high plane of attainment and an unusual many-sidedness of interest and contact, can not fail to have in them lessons of great value. For that reason we report in a descriptive and factual way mainly the official, general educational system of Belgium and in less detail the special systems, with the thought that readers in the United States will find much of immediate practical benefit and of inspiration in noting how the Belgians manage their difficult and complicated educational affairs.

CHAPTER I.—ADMINISTRATION, NATIONAL EXPENDITURES, AND ORGANIZATION

ADMINISTRATION

The Belgians handle their schools largely through their central National Government and support them mainly by national¹ moneys. The Government is a constitutional monarchy. The Parliament consists of two houses, the Senate and the Chamber of Representatives. The cabinet is formed of ministers chosen by the King on the advice of the leader of the political party in power; a majority of its members are usually at the same-time in the Parliament. Each of the 10 Provinces has its provincial council elected by popular vote, a permanent deputation of the council which attends to provincial affairs when the council is not in session, and a governor chosen by the King. The unit of local government is the commune. It may be large or small, rich or poor, but in any case its business is entrusted to an elected communal council of 7 to 45 members, depending on its population, presided over by a burgomaster chosen by the King generally from among the councilmen. When the council is not in session, communal matters are managed by its collège made up of the burgomaster and two to six échevins selected by ballot from its own membership.

General education is administered by the National Ministry of Sciences and of Arts (Ministère des Sciences et des Arts), set up by Royal arrêté of May 2, 1907, by which the public instruction division was removed from the Ministry of the Interior and Public Instruction, the fine arts division from the Ministry of Agriculture, and the two divisions combined to form the new ministry.

The ministry² is organized in six large divisions: (1) The minister and his cabinet of five members; (2) the general secretariat which deals with the personnel and general affairs of the ministry, including teachers' pensions, accounting, the regulation of school buildings, and the service of translations; (3) general direction of education and of sciences (on all levels); (4) administration of fine arts, letters, and public libraries; (5) commissions under the jurisdiction of the ministry (two in number, the chests for the widows and orphans of persons employed in public instruction); and (6) superior council of public libraries.³

¹ Throughout this bulletin, the French words "État" and "de l'État" though literally meaning "State" and "of the State," are translated as "nation" and "national" to avoid the confusion arising from the usage common in the United States, of "State" as a division of the Nation.

² Unless otherwise stated, or obvious, the word "ministry" is used for the Ministry of Sciences and of Arts.

³ A more detailed outline is given in Office of Education Bulletin, 1930, No. 12, National Ministries of Education, pp. 129 to 134, inclusive.

The division with which we are most concerned is the general direction of education and of sciences. Its immediate head is the director general who is also the chief of the minister's cabinet (chef de cabinet). It is organized into four directions—one each for primary, normal, and secondary education, and higher education and sciences. Each direction has its directeur-chef de service, director, one or more subdirectors, and the bureau chiefs. Each of the first three has attached to it also a service of inspection that carries on the active field work of the ministry and keeps it in constant contact with the schools. These services are discussed more fully as each level of instruction is described. For primary education, see page 18; secondary and normal, page 29.

Other ministries have charge of certain phases of education. The Ministry of Justice (Ministère de la Justice) includes in its activities the management of institutions for the care of the insane, abnormal, deaf, blind, vagabonds, and mendicants that are by law placed under national charge. It includes also the office for the protection of infancy, and the school of criminology and scientific police. Interior and hygiene (Ministère de l'Intérieur et de l'Hygiène) has within its purview the Royal Academy of Medicine and the National Work for Infancy (Œuvre nationale de l'enfance). The Ministry of Agriculture (Ministère de l'Agriculture) has a diverse series of educational activities assigned to it among which are the National School of Veterinary Medicine, the School for Farriers, agricultural education, including the national institutes of agronomy at Gembloux and Ghent, a number of secondary agriculture schools, certain home-economics activities, the horticultural schools, and the schools for fishing, and for young sailors. To Industry and Labor (Ministère de l'Industrie, du Travail, et de la Prévoyance sociale) is assigned a considerably larger educational task, second only to that of the Ministry of Sciences and of Arts, the management of the system of public technical education which includes many industrial, professional, commercial, and household-economics schools.

The Ministry of the Colonies (Ministère des Colonies) has general oversight of education in the Belgian Congo and directly administers the Colonial University at Antwerp, the Colonial School in Brussels, the School of Tropical Medicine, and the Belgian Congo Museum at Tervueren with its research laboratories. National Defense (Ministère de la Défense Nationale) controls the military schools and the army museum.

Besides its regular administrative divisions with their personnel, the Ministry of Sciences and of Arts makes use of several advisory bodies. There is one each for normal and primary, secondary, and higher education, instruction in the arts of drawing, and instruction in music. The title is the "council for perfecting normal and primary

education" (or any of the other four as the case may be); its purpose is to give advice on the particular branch or level of education with which it deals.

The council for perfecting primary and normal education (*conseil de perfectionnement de l'enseignement normal et primaire*) is made up of 25, or more members named by royal *arrêté* for four years. It meets at the call of the Minister of Sciences and Arts who fixes the order of the day and presides or has his delegate preside at the sessions. Members of the ministerial staff or any other persons may be called upon to be present in an advisory or consultative capacity but are not allowed to vote. The council has four sections—kindergarten, primary, primary normal, and middle normal. It gives its views on any questions submitted to it by the minister and may consider of its own initiative matters broached by any member and advise the minister of its opinions on them. It has two secretaries, a clerk, and a librarian. The minister may require of its members occasional special and temporary duties of inspection.

The other councils named though smaller in membership, function in much the same way. The other ministries use similar advisory bodies.

NATIONAL EXPENDITURES ON EDUCATION

To determine for a country for any one year in the total of national expenditures the amounts that are used for education is not possible. Education generally is extending out of the schoolroom and becoming an integral part of other social services such as public hygiene, child welfare, and the care of defectives; cooperation in agriculture, industry, and commerce; cultural activities in the way of public lectures, missions, libraries, museums, recreation centers, the cinema, the radio and things of like nature that help to maintain a high level of general interest and cultural appreciation. This is peculiarly true of Belgium.

In its national ministries that maintain organized schools besides carrying on other activities, the central officials necessarily give part of their time to the affairs of the schools under their administration. An undetermined fraction of their salaries and some part of the cost of upkeep of the central offices are properly chargeable to education but the amounts can not be segregated. For these reasons and others the educational proportion of the budget can not be given exactly, but by selecting those items that obviously are for education, child welfare, the care of defectives, and similar social services, an approximation can be made that indicates the national will to support education in the forceful and practical way of furnishing money for it.

Column 2 of the following table gives the total amounts voted in the national budget for the year 1928 plus the supplements for 1928

EDUCATION IN BELGIUM

that were voted in 1929. Column 3 gives the amounts (included also in column 2) that were used for educational purposes. The total of the latter is about one-tenth that of the former.

Belgian national expenditures for 1928

A. ORDINARY EXPENDITURES

Item	Expenditures in francs ¹	Of which for education	
		Expenditures in francs ¹	Per cent of expenditures
1	2	3	4
1. Public debt.....	4,384,164,600.27		
2. Dotations.....	31,261,212.00		
3. Justice.....	282,498,716.55	62,067,600.00	21.9
4. Foreign affairs.....	74,502,165.70		
5. Interior and hygiene.....	61,005,494.48	14,496,006.27	23.7
6. Sciences and arts.....	836,050,277.74	836,050,277.74	100
7. Agriculture.....	65,406,799.00	21,746,575.00	33.3
8. Public works.....	173,048,839.00	2,000.00	.001
9. Industry, work, etc.....	547,265,562.00	64,911,075.00	11.9
10. Colonies.....	10,254,737.00	1,557,021.00	15.1
11. National defense.....	796,402,069.00	7,659,775.00	.9
12. Gendarmerie.....	118,304,206.00		
13. Finances.....	309,949,535.00		
14. Nonvaleurs.....	768,446,100.00		
Total ordinary expenditures.....	8,458,560,313.74 (\$235,147,976.72)	1,008,490,332.01 (\$28,036,031.23)	11.9

B. EXTRAORDINARY EXPENDITURES

Justice.....	1,000,000.00	800,000.00	80
Sciences and arts.....	14,264,584.50	14,264,584.50	100
Public works.....	296,374,000.00	800,000.00	0.27
Other ministries.....	96,063,849.20		
Total.....	407,702,433.70 (\$11,334,127.66)	15,864,584.50 (\$441,035.45)	3.8

C. NONPERMANENT EXPENDITURES

	570,086,110.00 (\$15,848,393.86)		
--	-------------------------------------	--	--

D. RAILROADS, MARINE, ETC.

	906,440,326.75 (\$25,199,041.08)	105,000.00 (\$2,919.00)	0.01
General total.....	10,342,789,184.19 (\$287,529,539.32)	1,024,459,916.51 (\$28,479,985.68)	9.9

¹ The Belgian franc at par is \$0.0278 coinage of the United States.

This inclusive table needs some modifications. Item No. 14, *nonvaleurs*, is not so much an expenditure as it is a return to the communes of their part of the proceeds of certain taxes. Item C, *nonpermanent expenditures*, is chargeable to war reparations. Both may be dropped from the total of column 2. Column 3 does not include an item of 64,143,500 francs paid by the National Government to the Catholic, Protestant, Anglican, and Jewish clergy. It

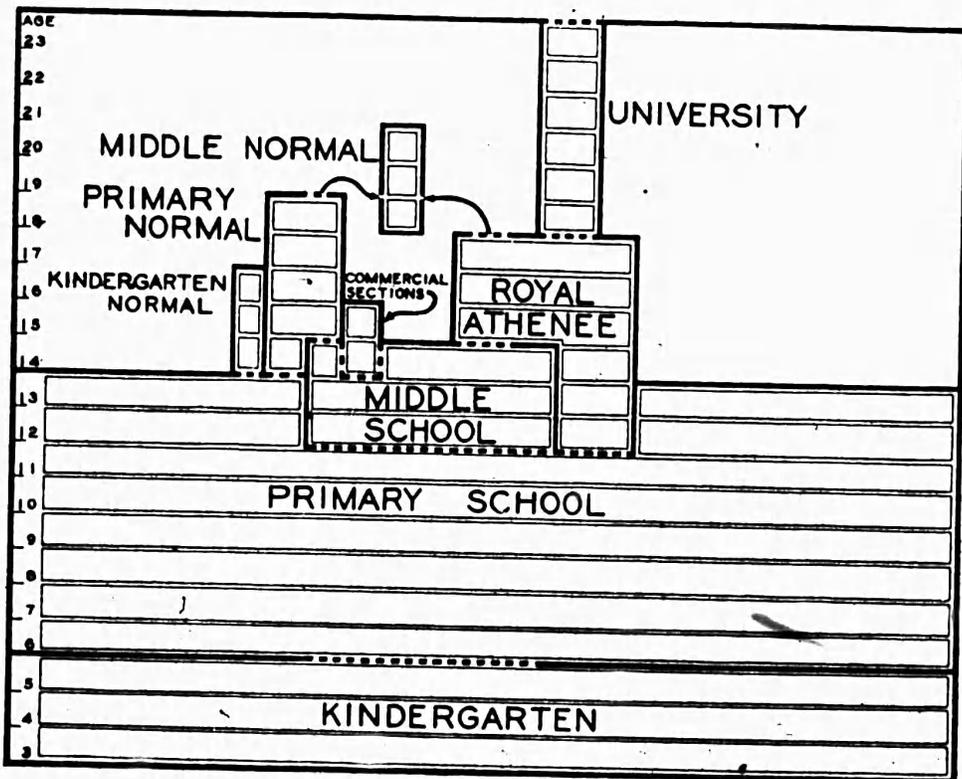
may be added. With these changes the total of column 2 becomes 9,004,256,974.19 francs (\$250,318,342.48); that of column 3 is 1,088,592,416.51 francs (\$30,262,869.18). The latter is 12.08 per cent of the former; or, of the national expenditures of Belgium for 1928, about one-eighth was for educational activities. Of the 15 major items in the budget, public debt is first in amount, the railroads, marine, etc., is second, and the appropriation for the Ministry of Sciences and of Arts is third, exceeding even that for national defense.

ORGANIZATION OF INSTRUCTION

The first step in education in Belgium is the kindergarten (*école gardienne*) which provides for 3 years of training for children between the ages of 3 and 6. This is followed by an 8-year primary school (*école primaire*) divided into 4 degrees (*degrés*) of 2 years each. The degrees are numbered from the lowest to the highest, 1 to 4, and the years or classes in like manner from 1 to 8. At the close of the third degree or sixth year the pupil has a choice of 3 lines of study to which he may next turn. He may continue in the primary school, complete the fourth degree and from that enter a normal school, or go into some one of the many kinds of lower technical or vocational schools that are open to him, or take up his life's work with no further scholastic training. The route through the 8-year primary school is the one followed by a large majority of the children.

The second route, commonly followed by those who are preparing for the university, is through the 6-year course of the standard, strong secondary school of Belgium designated by a name which no other country uses, the *athénée* (*athénée*). It offers four parallel curricula termed divisions: (1) The ancient humanities which may be either (a) Greek-Latin or (b) Latin-mathematics; and (2) the modern humanities in either (c) the sciences or (d) commercial studies. Each year of study in the *athénée* is termed a class; the classes are numbered sixth (*sixième*), fifth (*cinquième*), fourth (*quatrième*), third (*troisième*), second (*seconde*), with the final or highest class as first (*première*) or rhetoric (*rhétorique*). This numbering, a reversal of that used in the primary school, is confusing to one who is beginning to familiarize himself with education in Belgium.

The first three classes of the *athénée* are paralleled by the middle school (*école moyenne*) which has the same four divisions, a section of general instruction in which the curriculum is closely akin to that for the scientific division of the modern humanities, and a commercial section. This last is formed by specializing the third year of the middle school in the direction of commercial studies and adding a fourth commercial year to it as preparation for minor workers in commercial fields. The general instruction section and the commercial offer the third route to the graduate of the sixth year of the primary school.



GRAPH SHOWING PLAN OF ORGANIZATION OF INSTRUCTION IN BELGIUM

Ordinarily pupils that follow either of these sections will not continue through the athénée.

The standard 12 years of training, arranged on a 6-6 or 6-3-3 plan, leads to higher education in the universities or institutions of university rank. The last 6 years is termed middle instruction (enseignement moyenne) and is divided into a lower degree (degré inférieur) which includes the middle school or the first 3 years of the athénée, and a higher degree (degré supérieur) the last 3 years of the athénée. The general scheme of the organization is shown in the graph on page 80. Further explanations of the relations of the schools to each other, as they are delineated on the graph, will be given later as each is described.

BIBLIOGRAPHY

Bauwens, L. Belgium. *In* Educational Yearbook of the International Institute of Teachers College, Columbia University. 1927. New York. Bureau of Publications, Teachers College. 1928.

Damoiseaux, Maurice. *Le gouvernement de la Belgique. Tableau des institutions politiques, judiciaires et administratives de la Belgique contemporaine.* Bruxelles. A. Dewit. 1927.

Ministère de l'Intérieur et de l'Hygiène. *Annuaire statistique de la Belgique et du Congo Belge. Cinquante-cinquième année, 1925-26. Tome LI.* Bruxelles. Imprimerie Lesigne. 1928.

——— 1927-28. Tome LII.

——— 1929-30. Tome LIII.

Ministère des Sciences et des Arts. *Bulletin du Ministère des Sciences et des Arts.* Dison. Imprimerie Disonaise.

The bulletin is published quarterly and contains the record of all the important acts of the Ministry of Sciences and of Arts.

Royaume de Belgique. *Almanach Royal Official publié depuis 1840 en exécution de l'arrêté Royal du Octobre 1839. Année 1930.* Bruxelles. Imprimerie E. Guyot. 1930.

——— *Recueil des budgets pour l'exercice 1928.* Bruxelles. Imprimerie du Moniteur Belge. 1928.

——— *pour l'exercice 1929.*

——— *pour l'exercice 1930.*

CHAPTER II.—PRIMARY EDUCATION (ENSEIGNEMENT PRIMAIRE)

The general term *enseignement primaire* includes (a) the schools properly called primary (*écoles primaires proprement dites*) defined by the ministry to be schools organized and maintained in conformity with the law to give instruction to children from 6 to 14 years of age; (b) schools for adults who wish to keep up or extend the knowledge they acquired in the primary school or who did not complete its classes; (c) kindergartens; and (d) some preparatory classes attached to middle schools or *athénées*. We shall deal first with the schools properly called primary.

PRIMARY SCHOOLS

Compulsory education.—The primary school course covers the period of compulsory instruction that begins after the summer vacation of the year in which the child attains the sixth annum of his age and terminates when he has attended for eight years. The school year is fixed for at least 440 half-days comprising a minimum of 900 hours of 55 minutes each of instruction other than that given in religion and morals. The fulfillment of the compulsory school obligation may, at the request of the parents, be attested by a declaration signed by the school authorities. Certificates of primary studies (*certificats d'études primaires*) are issued to children that have passed the examinations given under national supervision to mark the completion of the third and of the fourth degrees.

Every head of a family is held by law to give the children in his charge a primary education in either a public or private school or at home. This is interpreted to mean that attendance will be regular and purposeful; without legitimate excuse 3 half-days' absence a month are allowed. Modifications of the compulsory education obligation relate to distance from the school, more than 4 kilometers; conscientious objections on the part of the parents; seasonal work of not more than 35 days a year for children of the third and fourth degrees in agricultural communities; and such legitimate excuses as illness or mental deficiency in the child and serious or contagious illness in the family. Enforcement is through the administrative mechanism of a delegate appointed for each school or group of schools by the ministry. The delegate works with the communal and school authorities.

Free primary education (*gratuité scolaire*) is the right of all children that come within the provisions of the compulsory education law.

It does not extend to those 4 or 5 years of age that are not near a kindergarten and wish to attend a primary school. It may be applied to some 15 or 16 years old, especially the abnormal. The freedom may be limited to exemption from tuition fees or, in cases of poor families, may include the books and other equipment that the children need. The law does not, however, on the one hand prohibit any school from being entirely free both as to tuition and equipment for all pupils, nor on the other does it forbid parents from paying tuition if they wish or from sending their children to private schools that exact fees. Some of the communal schools count as a regular part of their revenues, the *minerval*, that is, the money received for tuition. The statistics for pay pupils are on page 20.

Administration.—Primary schools may be either communal (*écoles communales*), adopted (*écoles adoptées*), or adoptable (*écoles adoptables*). As a natural corollary to compulsory education the law requires that ample opportunity for free primary instruction must be offered and places that responsibility in the commune. The commune may meet it by providing one or more communal (public) schools, by entering into contract with, or “adopting” as it is termed, a private school or schools, or by uniting with another commune or other communes to found and keep up a school.

The commune corresponds in some ways to the school district or the school township in the United States. The communal primary schools, corresponding to public elementary schools, are under the direction of the communal council (see p. 3), and here direction has a special meaning. It includes such matters as the creation and suppression of schools and classes, fixing the regulations and programs, selecting the teachers and setting their salaries, applying disciplinary punishments, and voting the budget. The council meets infrequently and is in effect a legislative body. Its administrative corps is the *collège échevinal* (see p. 3), to which is entrusted the oversight (*surveillance*) of the school. The *collège* carries out the decisions of the council, cares for the school property, sees that the programs are followed, and may in its own right name substitute teachers (*intérimaires*). The line between *direction* and *surveillance* is rather strictly drawn by law, neither *collège* nor council may encroach on the other's domain.

A private primary school may be adopted if it is conveniently located, selects its teaching personnel from among certificated Belgians, offers at least the minimum program of studies fixed by law, submits to national inspection, and admits pupils free of charge. Over the adopted school the communal council has no direct authority unless the contract specifies it; otherwise the private management both directs and oversees the school, but the expense of maintaining it is a charge against the commune just as if it were a communal school.

Adoptable schools are private institutions that meet all the conditions necessary for adoption but have not contracted with the commune, and are entirely free except for certain governmental control to which they submit in exchange for national subsidies.

Programs of study.—The law names the subjects that must be taught to be religion and morals; reading; writing; the elements of arithmetic; the legal system of weights and measures; the elements of the French, Flemish, or German language; geography; history of Belgium; drawing; hygiene; singing; and gymnastics. The girls must be taught also needlework, domestic economy, and cooking, and in the rural areas, agriculture and horticulture; the boys in rural communes must study agriculture and horticulture and in other communes, elements of the natural sciences. This applies particularly to the first three degrees. The teaching in the two years of the fourth degree may have a practical bias to suit the needs of the community. This does not mean that the fourth degree is in any sense a vocational school; it is an integral part of the scheme of primary education and carries on the general training of the earlier degrees, but it attempts to give a kind of manual and practical education.

Beyond meeting this legal requirement and the regulations in regard to religious instruction and the mother tongue later discussed, the communal council is free to arrange the programs of study for the primary schools under its direction. The ministry issues a typical minimum program suggestive, but not mandatory, and many of the communes, especially the larger ones, arrange and publish their own courses. The typical program issued by the ministry in 1922 aims, among other things, to set the studies for the first three degrees so that there will be fewer retarded pupils, to provide physical training for every class, to emphasize improving the quality of the instruction especially in regard to the "active" method "which is the antidote for verbalism and the true method of the future," to coordinate the subjects, and to emphasize the teaching of the mother tongue and mathematics. The general advice given in the program expresses the philosophy of primary education in Belgium. We quote:

- (1) The school is for the child, not the child for the school.
- (2) The primary school is its own reason for being; it is not conceived in view of studies that the pupils will follow later or of professions that they may enter; its objective is the same for all the children confided to it—to prepare them as completely as possible to be men and citizens.
- (3) This uniformity of aim does not mean the leveling of individualities. On the contrary, one of the principal qualities of the teacher lies in the ability to reconcile the necessities born of a collective education with the free expansion of the personality of each child.
- (4) Respect for the personality of the pupil implies his liberty and its frequent exercise in all forms—physical, sensorial, intellectual, and moral.
- (5) The typical program and the instructions that accompany it should be held as guides not as chains, for if the spirit vitalizes, the letter destroys. The

teacher should be inspired to keep intact his originality, his initiative, and his mental curiosity.

(6) Teach but little at a time but teach it thoroughly; instruction well conceived should be understood in its depth rather than on the surface.

(7) In the infinite variety of questions that the teacher frames, two should predominate: Why? and How? These give more depth to the teaching and sharpen the essential faculties of intelligence.

(8) Most of the lessons should lead to a real and precise conclusion; the new idea thus brought to light is trusted to the memory and recalled from time to time. When the teacher does not attach sufficient importance to this double task of fixation and conservation of knowledge, he gives the pupils only knowledge inexact, desultory, and fleeting; he spends himself in vain, nullifies his own efforts, and lessens the efficiency of his teaching.

(9) Tasks to be done at home are not always profitable for the children; by way of revenge, they often injure his physical development. After a well-filled day in class, sports in the open air are as indispensable as food to the child.

(10) School life should be carried on in calmness, joy, and beauty.

The table suggesting the number of hours of lessons and exercises for each week is as follows:

TABLE 1.—Number of hours of lessons and exercises per week for each degree of the primary school

Subject	First degree		Second degree		Third degree		Fourth degree	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1	2	3	4	5	6	7	8	9
Religion and morals.....	3	3	3	3	3	3	3	3
Moral education and civics.....	3½	3½	3½	3½	3½	3½	3½	3½
Mother tongue.....	10	10	9	8	8	7	4	4
Arithmetic and metric system, algebra.....	4	4	4	4	3	3	2	2
Geography ¹			1	1	1	1	1	1
History ¹			1	1	1	1	1	1
Geometrical forms and drawing.....								
Drawing.....	2	1	2	1½	2	1½	2	1
Manual work.....	1	1	1	1	1	1	2	1½
Needlework.....			1	2	3		4	
Natural science or agriculture.....								4
Hygiene.....	1		1		2		3	2
Domestic economy.....		1		1	1			2½
Technology ¹						2		
Penmanship ¹				½	1	½		
Commerce.....								
Singing.....	1	1	1	1	1	1	1	1
Gymnastics ¹	2½	2½	2½	2½	2½	2½	2	2
Total.....	24	24	26	26	26	26	26	26
Second language (elective).....					2	2	2	2

¹ For the lower degree, the instruction will be included in the mother tongue.
² Elective courses.
³ Occasional instruction.
⁴ The lessons are one-half hour each.
⁵ The lessons in gymnastics are one-half hour each; they are in addition to the time reserved for recreation.

The schools are in session 6 days in the week. They open usually at 8.30 in the morning, close at 12 for a 2-hour lunch period, open again at 2 in the afternoon, and continue until 4.30, or for some classes, to 5 in the evening.

The chief characteristics of this program are the sharp emphasis placed on the mother tongue and mathematics, the differences in studies for boys and girls, and the marked change at the close of the sixth year or third degree. How one of the stronger communes¹ has enlarged on it and worked out a plan in detail is indicated in the following tables:

TABLE 2.—Number of lessons and exercises a week for boys

[a, 55 minutes; b, 45 minutes; c, 30 minutes. * In addition to the class period]

Subjects	Year of study						Fourth degree— year	
	First	Second	Third	Fourth	Fifth	Sixth	First	Second
1	2	3	4	5	6	7	8	9
Moral education and civics.....	1c	1c	1c	1a	1c	1c	1a	
Penmanship.....			2c	2c	1c	1c	1a	
French language— { Reading..... { Spelling, vocabu- { lary, grammar..... { Elocution..... { Composition.....			5c	5c	2b	2b	1a	1a
	20c	20c	5c	5c	2a	2a	1a	1a
			1c	1c	1b	1b		
			3c	3c	2b	2b	2a	2a
Flemish.....	6c	6c	8c	8c	4b	4b	3a	3a
Counting and metric system.....	8c	8c	8c	8c	4a	4a		
Arithmetic and algebra.....							4a	3a
Mechanics.....								2a
Geometrical forms and drawing.....	2c	2c	2c	2c	2c	2c		
Geometry.....							4a	4a
Drawing.....	3c	3c	2c	2c	3c	3c		
Technical drawing.....							3a	3a
Ornamental drawing.....							2a	2a
History.....			1c	1c	2c	2c	1a	
Geography.....			2c	2c	3c	3c	2a	1a
Commerces.....								1a
Science and hygiene.....	2c	2c	2c	2c	2b	2b		
Chemistry.....							1a	1a
Physics.....							2a	1a
Manual work.....	2c	2c	2c	2c	8c	8c	10a	14a
Theology.....							1a	1a
Singing and music.....	2c	2c	2c	2c	2a	2a	1a	1a
Gymnasium and swimming.....	4c	4c	4c	4c	*1c	*2c		
					2a	2a	1a	1a
Recreation.....			3 hrs. 50 min.		+1b	+1b	2 hrs. 50 min.	

¹ Commune de Saint-Gilles-lez-Bruxelles.

TABLE 3.—Number of lessons and exercises a week for girls

[a, 55 minutes; b, 45 minutes; c, 30 minutes. * In addition to class hours]

Subjects	Year of study						Fourth degree— year	
	First	Second	Third	Fourth	Fifth	Sixth	First	Second
1	2	3	4	5	6	7	8	9
Moral education and civics	1c	1c	1c	1c	1c	1c	1b	1b
Penmanship			2c	2c	1c	1c		
French language			5c	5c	2b	3b	2b	2b
	(Reading, spelling, vocabulary, grammar, diction, composition)	19c	19c	5c	5c	2a	2a	2a
			1c	1c	1b	1b		
Flemish	6c	6c	3c	3c	2b	2b	2a	2a
			6c	6c	3b	3b	2a	2a
Arithmetic and metric system	8c	8c	8c	8c	4a	4a	+1b	+1b
Geometrical forms and drawing	2c	2c	2c	2c	2c	2c	3a	3a
Drawing	2c	2c	2c	2c	3c	3c	1a	1a
History			1c	1c	2c	2c	3b	3b
Geography			2c	2c	3c	3c	1a	1a
							1a	1a
Commerce							+1c	+1c
Science and hygiene							1a	1a
Child care	2c	2c	2c	2c	2b	2b	3a	3a
Nutrition							1b	1b
Manual work	4c	4c	5c	5c	2a	3a	1a	1a
					+1b	*a	6b	6b
Singing and music	2c	2c	2c	2c	a+a	a+	1a	1a
					*+c	*2a	*+a	*+a
Gymnasium and swimming	4c	4c	4c	3c	a+a	b+	1a	1a
				*+c	+b	*2a	*+a	*+a
Household management							3a	3a
Recreation							+2a	+2a
				3 hrs. 50 min.			2 hrs. 50 min.	

1 Demonstration.

Moral and civic education are taught in accord with a pamphlet² issued by the ministry in 1921. In it is quoted a section of the school law to the effect that the teacher must attend with equal care to the education and the instruction of the pupils in his charge, must not overlook any occasion to teach them moral precepts and inspire them with a sense of duty, love of the fatherland, and respect for the national institutions and regard for the constitutional liberties, and that he must not at any time attack the religious convictions of the families from which the children come. The school authorities are asked to give half an hour each week to education—and education is sharply differentiated from instruction—on some theme or idea that is the center of interest for most of the lessons during that week. The themes include such topics as propriety, prudence, health, temperance, respect for all life and for the liberty and property of others, freedom of religion, the national sovereignty, and love of country.

The child that completes the eighth year of the primary school will have thorough training in his mother tongue; indeed, it is the chief subject of the curriculum. He will carry arithmetic to and through

² Royaume de Belgique. Ministère des Sciences et des Arts. Du rôle éducatif de l'école primaire. Bruxelles. Imprimerie Th. Lombaerts, 1921.

square and cube root, proportion, and the metric system, and have with it some knowledge of the elements of algebra. The geography includes in the earlier years training in observing simple geographical phenomena, and in the later ones a study of Europe, of Belgium and the Belgian Congo, of the main facts of cosmography, and the broad principles of physics and chemistry. The history is largely that of Belgium. The drawing is from nature and from memory, decorative composition, and a fairly close study of geometrical forms. The manual work is in wood and iron for the boys, in sewing and fine needlework for the girls. The natural sciences carry further the principles of physics and chemistry taught in geography and include some appreciation of plant and animal life. Training in hygiene extends to first aid, some knowledge of infectious diseases, particularly tuberculosis, and of the public agencies that are combating disease. Agriculture for boys and home economics for girls are largely in the form of practical lessons. Music, mostly singing, is carried on throughout the eight years. The second language (optional) is begun in the fifth year and taught with all the care that is given to the mother tongue.

Finance.—The general principle of the law is that the expense of maintaining a school falls on those who organize and direct it. A communal school is a charge against the commune but the local tax may be much lightened by national and provincial subsidies, the minerval, foundations, gifts and legacies, and the revenue from lotteries, games, etc. In the matter of erecting, enlarging, and repairing school buildings, providing furniture and teaching equipment, the nation generally pays one-third; the Province may help but that is purely optional. The nation pays the teaching personnel in both public and private schools the salaries fixed by law, provided that the classes taught equal but do not surpass the number of pupils fixed by royal arrêté, and the school directions, whether communal or private, observe the law and the regulations. The salaries are paid not through the school direction but to the teachers who are in effect on the same basis as national officials. The nation also bears part of the expense of employing substitute teachers and in some cases that for giving religious instruction. The Province must pay a fixed minimum per pupil to all children in either public or private schools that are entitled to have their school supplies furnished free.

The regulations fixed in the law and set by royal arrêté³ that a school must observe to obtain national subventions relate to the courses offered, the minimum number of free pupils per class, the creation of new classes, the work of the principal (chef d'école), and the selection and proper appointment of legally qualified teachers. The minister has considerable latitude in applying them. Generally

³ Arrêté Royal du décembre 1928, fixant les conditions qui doivent remplir les écoles primaires communales, adoptées et adoptables pour recevoir les subventions de l'État.

the school must offer the first three degrees of studies and the fourth degree if there are pupils ready to follow it. The regulation for the minimum number of pupils to a class—which is defined as a distinct room with the necessary furniture in which the pupils are taught by one teacher—allows 20 for schools of one and two classes, 25 for larger schools without the fourth degree, an average of 15 to 20 in those of the fourth degree and in special groups of pupils retarded at least two years, and 10 for classes of abnormal children. Classes that receive pay pupils are subventioned only if the free pupils equal the numbers given above; moreover the number of pay pupils may not exceed that of the free. If the local authorities refuse to create a new class when it is needed, the school may lose all or part of its subvention. Since the subventions are in the form of salaries paid direct to the teachers, the school authorities are required to give to the proper inspector exact data in detail about each teacher employed, and the duties of a staff member who does not teach—the principal—are explicitly outlined.

Annual expenditures and their distribution.—The expenditures on three of the four kinds of primary education and their distribution as to source of revenue and purpose of expenditure are given in the following table. The data are for 1927, the latest year for which they could be obtained.

TABLE 4.—*Expenditures for the different kinds of primary education in 1927*

Purpose of expenditure	Per cent from communes	Per cent from Provinces	Per cent from nation	Total expenditure in francs ¹	Per cent each item is of total
1	2	3	4	5	6
Direction and inspection.....			100.0	5,317,289	0.9
School buildings.....	82.1	5.0	12.3	71,963,446	11.7
Communal primary schools.....	16.7	1.1	82.2	293,942,500	47.9
Adopted primary schools.....	12.5	1.6	85.9	101,092,858	16.5
Adoptable primary schools.....	0.9	1.2	97.9	61,687,193	10.1
Communal adult schools.....	87.9	5.1	7.0	3,401,099	.52
Adopted adult schools.....	95.0	0.2	4.8	385,310	.06
Adoptable adult schools.....	32.1	2.8	65.1	146,329	.02
Communal kindergartens.....	25.0	1.0	74.0	34,933,982	5.7
Adopted kindergartens.....	7.5	2.3	90.2	13,975,673	2.3
Adoptable kindergartens.....	0.8	2.0	97.2	16,456,870	2.7
Encouragements.....	94.5	2.8	2.7	9,517,461	1.6
Totals.....	23.4	1.8	74.8	612,820,040 (\$17,036,397)	100.0

¹ The Belgian franc is equal to \$0.0278.

Note that the national treasury bore about three-fourths of the cost of primary education in 1927, and that the communes cared for nearly all of the remaining one-fourth. The provincial share was almost negligible. Note also that the adult form of primary education received little more than one-half of 1 per cent of the total expenditure.

In the five years 1923 to 1927, inclusive, the amount spent increased a little more than 75 per cent and the nation assumed a larger part of the financial responsibility. The statistical data are given below

TABLE 5.—Total expenditures for primary education, 1923 to 1927, inclusive

Year	Expenditure in francs	Per cent increase over preceding year	Per cent of total expenditures made by—		
			Communes	Provinces	Nation
1	2	3	4	5	6
1923.....	348, 754, 990 (\$9, 695, 388. 72)	-----	28. 9	2. 9	68. 2
1924.....	404, 743, 101 (\$11, 237, 958. 21)	15. 9	25. 5	2. 5	72. 0
1925.....	448, 038, 872 (\$12, 455, 480. 64)	10. 8	25. 1	2. 4	72. 5
1926.....	492, 496, 182 (\$13, 691, 364. 67)	9. 9	26. 3	3. 3	70. 4
1927.....	612, 820, 040 (\$17, 036, 397. 11)	19. 6	23. 4	1. 8	74. 8

Since the nation bears so large a part of the expense, it will logically set certain standards for the schools and inspect them to determine as far as it can whether the money is spent in such a way that the children profit by it.

School inspection.—Any primary school that receives national, provincial, or communal funds must be inspected by national authorities. This is the professional supervision exercised by the ministry through its corps of 30 principal inspectors placed at its will, and 180 cantonal inspectors each having the direction of a canton whose location and boundaries are fixed by the ministry. In addition there are 32 women inspectors of the special subjects taught to girls and 2 general men inspectors to visit the preparatory classes in the middle schools.

A cantonal inspector must visit the schools in his canton at least twice a year, note in detail their condition, and send a weekly report of his work to the principal inspector. Once each trimester he must hold a teachers' meeting to discuss methods, books, and materials of education. The principal inspector oversees the work of the cantonal inspectors in his section, calls them to conference as a group at least three times a year, transmits those of their reports that he deems necessary to the ministry, makes special inquiries, and holds at least one conference yearly of the teachers. He makes an annual report to the minister. The special inspectors are assigned their work in much the same way as those of the canton; the two general inspectors report direct to the minister and may be given special missions.

Statistics of primary schools.—The Ministry of the Interior and of Hygiene publishes regularly a statistical annual of Belgium and of the

Belgian Congo⁴ in which are included the official figures for education. The latest available for this study are those for the year 1929. They are given here as of December 31 of 1928 and of 1929 for the schools properly called primary (écoles primaires proprement dites). The data include only those schools that are inspected by national authorities.

TABLE 6.—Number of primary schools by year, kind, and sex of students

Year and sex	Communal	Adopted	Adoptable	Total
1	2	3	4	5
1928				
Boys' (schools).....	2,431	446	380	3,257
Girls.....	1,316	1,063	472	2,851
Mixed.....	1,343	506	437	2,286
Total.....	5,090	2,015	1,289	8,394
1929				
Boys' (schools).....	2,430	451	396	3,277
Girls.....	1,318	1,079	481	2,878
Mixed.....	1,355	511	431	2,297
Total.....	5,103	2,041	1,308	8,452

TABLE 7.—Number of teachers in primary schools by year, kind, status, and sex

Year, status, and sex	Communal	Adopted	Adoptable	Total
1	2	3	4	5
1928				
Lay.....	16,545	4,115	3,281	23,941
Religious.....	584	4,496	2,104	7,184
Men.....	9,472	2,188	1,678	13,338
Women.....	7,657	6,423	3,707	17,787
Total.....	17,129	8,611	5,385	31,125
1929				
Lay.....	16,821	4,394	3,534	24,749
Religious.....	583	4,529	2,105	7,217
Men.....	9,618	2,297	1,794	13,709
Women.....	7,786	6,626	3,845	18,257
Total.....	17,404	8,923	5,639	31,966

⁴ Ministère de l'Intérieur et de l'Hygiène. Statistique Générale. Annuaire statistique de la Belgique et du Congo Belge. Année 19—. Tome —. Bruxelles. En vente à la Bibliothèque de la Commission Centrale de Statistique et chez les principaux libraires de Bruxelles.

EDUCATION IN BELGIUM

TABLE 8.—Number of pupils in primary schools by year, kind, and sex

Year and sex	Communal	Adopted	Adoptable	Total
1	2	3	4	5
1928				
Boys.....	268, 083	80, 949	59, 135	408, 167
Girls.....	152, 028	176, 695	79, 919	402, 910
Total.....	420, 109	251, 914	139, 054	811, 077
1929				
Boys.....	274, 060	84, 621	61, 981	420, 662
Girls.....	155, 687	177, 215	81, 783	414, 685
Total.....	429, 747	261, 836	143, 764	835, 347

PAY PUPILS INCLUDED IN THE ABOVE

1928.....	1, 627	835	2, 334	4, 796
1929.....	1, 184	783	2, 243	4, 210

According to these data the prevailing custom in Belgium is for the boys to attend communal boys' schools where they are taught for the most part by laymen teachers, while sentiment favors sending the girls to adopted or adoptable schools to be instructed by religious women teachers. The increase in number of schools and of teachers shown for 1929 over 1928 has continued through the years from 1923 even though the enrollment in 1923 of 855,892 has not been equalled since and in 1925 it was decreased by 60,607 pupils.

The question arises naturally as to how adequate this provision of primary schools is for the needs of the nation. The census of 1930 was being taken in December of that year and figures from it can not yet be had. By that of 1920 the population of Belgium was 7,406,299 of which 14.64 per cent, or 1,085,152, were children between the ages of 6 and 14. Applying that per cent to the 7,995,558⁵ estimated total as of December 31, 1928, there were approximately on that date 1,170,550 children of primary school age. The official schools properly called primary were then enrolling 811,077, or 69.3 per cent.

SCHOOLS FOR ADULTS

The basic principle is that the commune is entirely free in the matter of opening, continuing and managing, or adopting schools or classes for adults. The direct restrictions are that teachers take the oath of office, are subject to disciplinary penalties just as other teachers, and if a class is closed have a right to the salary of expectancy. The cost of the adult school is a charge against its organizers but each year the national budget carries a credit to subvention the schools that accept the conditions set by the Government. These

⁵ Of the increase, 60,213 is due to the accession of Eupen and Malmedy in 1925.

relate to proper housing and equipment, a capable certificated teaching staff, an organized program of study, the acceptance of national inspection, free tuition for pupils of certain ages, and refusal to admit under any pretext children who are attending primary schools. At least 10 pupils must be admitted free, except in communes of fewer than 1,000 population, but in no case will aid be given to any class of fewer than 6 free pupils. Payments are made direct to the commune, or in the case of private schools, to the head of the school or an agent named by its directors. The amounts and sources of financial support are given on page 17.

For the years 1928 and 1929 the data as to number of schools and attendance at them are as follows:

TABLE 9.—Number of schools for adults, under national inspection, by year, kind, and sex of students

Year and sex	Communal	Adopted	Adoptable	Total
1	2	3	4	5
1928				
Boys' (schools).....	1,181	29	55	1,265
Girls.....	156	26	288	470
Mixed.....	38	3	4	45
Total.....	1,375	58	347	1,780
1929				
Boys' (schools).....	1,066	24	41	1,131
Girls.....	145	24	244	413
Mixed.....	39	4	4	47
Total.....	1,250	52	289	1,591

TABLE 10.—Number of pupils in the schools for adults by year, kind, and sex

Year and sex	Communal	Adopted	Adoptable	Total
1	2	3	4	5
1928				
Boys.....	27,936	1,800	2,286	32,022
Girls.....	7,126	1,709	10,860	19,695
Total.....	35,062	3,509	13,146	51,717
1929				
Boys.....	25,035	1,785	1,903	28,723
Girls.....	6,005	1,360	9,270	16,635
Total.....	31,040	3,145	11,173	45,358

The decreases shown in these tables are a continuation of a tendency that has been consistent since 1921 when 3,217 schools enrolled 117,883 pupils. The average annual diminution in 8 years has been 203 schools and 9,067 pupils.

We have dealt here only with adult education as it is conceived in the law to be a part of public primary education. Much fine work

is being done in Belgium in the way of workers' education by various private or semipublic organizations. A good account of it is given in the *International Handbook of Adult Education*, published by the World Association for Adult Education, London, in 1929.

KINDERGARTENS

With respect to kinds of schools, regulations for receiving national subventions, acceptance of national inspection, and guarantee of salaries of teachers, the kindergartens are under essentially the same regulations as the primary schools, with the exceptions that no commune is compelled by law to open or maintain a kindergarten and attendance is, of course, not compulsory. Moreover most of the kindergartens are mixed schools. Children may be admitted from the time they have reached the age of 3 until the date when they become subject to the compulsory education law. To obtain national subvention, in a commune of fewer than 1,000 population, the kindergarten class must have at least 20 pupils; if a commune of more than 1,000 population, at least 30. When the average attendance has reached 40, a second class may be opened; when 75, a third class; and an additional class for each 25 children that attend regularly.

The statistical data for 1928 and 1929 are:

TABLE 11.—*Number of kindergartens by year, kind, and sex of student*

Year and sex	Communal	Adopted	Adoptable	Total
1	2	3	4	5
1928				
Boys' (schools).....	7	4	8	19
Girls.....	3	5	2	10
Mixed.....	1,352	1,161	1,275	3,788
Total.....	1,362	1,170	1,285	3,817
1929				
Boys' (schools).....	7	4	7	18
Girls.....	3	4	3	10
Mixed.....	1,381	1,206	1,257	3,844
Total.....	1,391	1,214	1,267	3,872

TABLE 12.—*Enrollment in kindergartens by year, kind, and sex of students*

Year and sex	Communal	Adopted	Adoptable	Total
1	2	3	4	5
1928				
Boys.....	30,545	46,019	38,140	114,704
Girls.....	37,314	46,965	30,812	115,091
Total.....	76,859	92,984	77,952	247,815
1929				
Boys.....	30,328	47,242	37,021	114,591
Girls.....	37,602	46,418	38,791	122,811
Total.....	76,930	93,660	75,812	246,402

The number of kindergartens has increased by 450 since 1921 and the number of children in them, from 154,032 to 248,399. For a nation of 8,000,000, this enrollment of nearly a quarter of a million is remarkable.

The kindergarten (*école gardienne*) in Belgium is conceived to be a school that watches over the physical development of the child from 3 to 6 years of age and through a beginning in intellectual, moral, and social training, prepares it for primary instruction. The program includes: (1) Physical education through games and exercises suited for developing the child's body; (2) intellectual and sensorial training through exercises in attention and observation, judgment and reasoning, language and vocabulary, memory and recitation, and Froebelian and Montessori exercises; (3) æsthetic education through drawing and singing and accustoming the eye and the ear to the beautiful; (4) social education through appropriate games; (5) moral education through talks and practice; and (6) religious instruction, if the parents wish it.

Medical inspection.—The law is that free school medical inspection must be had in every commune and include an examination of the pupils when they enter the school and at least one school visit a month. The communal council names and contracts with the physician-inspector of the communal school; the *collège échevinal* approves those named by the managers of the adopted and adoptable schools. After each visit the physician-inspector makes a report in triplicate, 1 to the burgomaster, 1 to the school inspector, and 1 to the school direction. This law was first passed in 1914 but because of the war did not become really effective until about 1921. The regulations were then issued by the Ministry of Sciences and of Arts to put it into effect. At present all the communes approximate the minimum requirements; many do much more.

The service, extending to kindergartens as well as primary schools, calls for the admission physical examination, regular semestral inspection of the entire school plant, frequent examination of children that need special care, and rigorous oversight of the school in cases of epidemic. Each school either has, or has access to, an examining room equipped with scales for measuring weight and height, stethoscope, Snellen's optometric scale, yarn or cards of different colors, medical thermometer, alcohol lamp, sterilized sponges, acetic acid and Esbach's reagent, a tape measure, and a first-aid chest.

Each pupil has a health book (*carnet sanitaire*) in which are entered the date and place of his birth, the composition of the family, his general development, the history of any illnesses he may have had, the condition of his sensory, nervous, digestive, and other organs at the time of each examination and the records of his height and weight. The book is kept year by year and goes with the pupil from school to school in case he changes from one to another. Many schools

have a school nurse; the teacher is trained to observe the children's physical condition carefully and to cooperate closely with the physician-inspector. The latter must interest himself in the physical education instruction, select any children that should be excused from the ordinary physical exercises and swimming, and help to plan corrective exercises or treatment for those that need it.

The National Office of Infancy (Œuvre Nationale de l'Enfance), in existence since 1919, is an incorporated public organization, independent in its management, voted funds by the Parliament annually for its work, and designed to "encourage and develop the protection of infancy and especially to favor the diffusion and application of scientific rules and methods of hygiene for infants, either in families or in public or private educational institutions; to encourage or sustain by subsidies or otherwise, activities relative to infant hygiene; and finally to exercise administrative and medical control over the activities under its patronage." Its field is especially expectant and nursing mothers, and children under 3 years of age, though children in guardianship up to the age of 7 come under its care.

The organization consists of a superior council with its active bureau and main office in Brussels, a committee in each Province, and local committees for the communes. Its activities include prenatal consultations, homes for mothers, protection during confinement, consultations for nursing mothers, helping to supply visiting nurses, aiding crèches and homes for infants, carrying on canteens and colonies for weak or undernourished children, doing research work, and issuing circulars of instructions and other publications designed to spread good information about the care of mothers and infants.

The National Office of War Orphans (Œuvre Nationale des Orphelins de la Guerre) is another thoroughly worthy public organization founded also in 1919. It is a part of the Ministry of Justice, is maintained wholly by national funds, and is purposed to see that the war orphans have all their legal rights, to arrange for their placement, oversee their education and especially their technical training, subsidize private organizations that are aiding the orphans, and in general to take any opportune action to help these children. It is managed by a council of administration of 30 members with the main office and staff at Brussels. In 1930 it was looking after about 10,500 children; it has at times had as many as 20,000 in its charge. So far as aiding in an educational way is concerned its funds apply only to attendance at primary and secondary schools; the University Foundation helps those that are fitted for higher studies. The expectation is that by 1939 this office will have accomplished its mission.

BIBLIOGRAPHY

- Bauwens, Léon. Manuel de législation scolaire. I. Loi organique. II. Commentaire. III. Arrêtés d'exécution. 7^e édition. Bruxelles. Librairie Albert Dewit, 53 Rue Royale. 1926.
- Manuel de législation scolaire. Supplément à la 7^e édition. Bruxelles. Albert Dewit. Mars, 1929.
- Code général de l'enseignement primaire et de l'enseignement normal. Bruxelles. Albert Dewit. 1923.
- Collard F. et Collard, F. Notions sur la constitution et les lois organiques ou organisation de l'État, de la province, de la commune et de l'enseignement primaire à l'usage des écoles normales primaires. Seizième édition. Bruxelles. Maison d'Édition A. de Boeck. 1926.
- Commune de Saint-Gilles-les-Bruxelles. Programme de l'enseignement à donner dans les écoles primaires communales et les écoles morichar (4^me degré). Bruxelles. Imprimerie H. & M. Schaumans.
- Ministère des sciences et des arts. Du rôle éducatif de l'école primaire. Bruxelles. Imprimerie Th. Lombaerts, 3 et 5, rue du Persil. 1921.
- Programme type des écoles primaires communales. Bruxelles. Imprimerie J. De Clercq, 594 Chaussée de Jette. 1923.
- I Organisation matérielle de l'enseignement ménager dans les écoles primaires de filles. Bruxelles. Vromant & Co., 3, rue de la Chapelle. 1922.
- II Règlement-type des écoles primaires communales. Vromant & Co., Bruxelles. 1922.
- Règlement concernant l'inspection de l'enseignement primaire. Bruxelles. Imp. Moniteur belge. 1928.
- Règlement-type et programme-type des écoles gardiennes communales. Liège. Imprimerie Georges Thone. 1927.
- Règlement organique du service d'inspection médicale scolaire. Bruxelles. Etablissements Typo-lithographiques A. Gilles, 1921.
- Œuvre nationale des orphelins de la guerre. Statut de l'œuvre. 1. Loi du 15 Juin 1919. 2. Arrête royal organique du 19 Juin 1919. Bruxelles. Imprimerie-lithographie Fred. Tilbury.
- Royaume de Belgique. Œuvre nationale de l'enfance. Règlement. Bruxelles. Imprimerie de l'Œuvre nationale de l'enfance. 1927.
- Œuvre nationale de l'enfance. Loi du 5 septembre 1919. Bruxelles. Imprimerie de l'œuvre nationale de l'enfance.

CHAPTER III.—SECONDARY EDUCATION (ENSEIGNEMENT MOYEN)

In organization of instruction, secondary education in Belgium has almost completed the transition from the type of arrangement that places secondary schooling parallel to and distinctly separate from primary, as in France and Germany, to that which has it subsequent to and an advance from the primary, as in the United States and most of Canada. That phase of education termed "secondary," or more literally "middle" (moyen), in Belgium with its three years in the middle school and six or three classes in the athénée is subsequent to and an advance from the first six years of the primary school, on which it rests; but the first two secondary classes still parallel the primary fourth degree. This unifying of instruction was furthered by a ministerial circular of September 20, 1924, designed to coordinate the primary school with the middle school on the one side and the middle school with the athénée on the other. To that end, preparatory classes annexed to any secondary school are required to follow the programs of the corresponding primary classes, the athénée course is reduced from seven years to six, and the section of general instruction in the middle school and the three lower classes of modern humanities in the athénée have nearly the same programs so that a pupil coming from either can enter class three of the athénée. Moreover in localities distant from an athénée, classes in ancient languages may be organized in the middle schools. In justification of these changes the circular says:

It is needless to insist that this innovation is advantageous from a social point of view. Henceforth parents who aspire to give their children a complete humanitarian instruction will not be obliged until three years later to meet the expense, particularly heavy nowadays, of board and lodging or of removal. One can hope, moreover, that many of the specially endowed pupils of the middle schools will continue on to assure themselves of the benefits of a classical culture which opens to them the way to all liberal careers and gives them the means of raising themselves to the highest stations in society. Experience has proved that specialization of study was too early in the middle school. In the future the pupils will have two or three years of general studies before entering upon the special (commercial, agricultural, industrial, colonial, etc.); the special sections will receive also pupils coming from the fourth degree of the primary school.

LEGAL BASES

The fundamental law of secondary education was enacted June 1, 1850. It still retains much of its original character though it has been modified by laws of June 15, 1881; February 6, 1887; April 10, 1890;

July 3, 1891; and May 21, 1929. The law is brief; its effective provisions cover about 10 printed pages. In summary it provides that institutions of secondary education may be set up by the nation, the Provinces, or the communes; middle schools may be annexed to athénées, and Latin classes as sections of the athénée to middle schools; provincial and middle schools may be established for girls; and no institution for secondary education may be discontinued without the approval of the King. A commune that is the seat of a national athénée or middle school must provide and maintain the buildings and grounds properly furnished and in good condition, and contribute annually to the expenses of the school an amount that without its consent may not exceed one-third the total of the expenses. National oversight and inspection are arranged for in a council for perfecting secondary education, the national inspectors, and the local bureau of administration. Every athénée is required to offer (1) instruction in the humanities and (2) professional instruction, and the courses to be taught in each as well as those for the middle schools are outlined. Religious instruction must be offered. The law includes provision for the training and certification of teachers.

This legal basis, the *chef de cabinet* of the ministry points out, is generally recognized as being machinery somewhat superannuated in its principles as well as in its forms.¹ Its weaknesses lie in that it limits arbitrarily the number of national athénées and colleges to 24, middle schools for boys to 100, and middle schools for girls to 50; does not specifically provide secondary education of the higher degree for girls; and forces the commune in which a national institution for secondary education is located to bear part of the expense, although the school is open to children of other localities and secondary education is of general value to the entire nation.

On this rather scant legal foundation a well-organized system of secondary schools for boys has been built through a series of royal and ministerial *arêtés* in which the law is interpreted liberally in accord with its spirit rather than its letter. The system for the girls is less complete and adequate.

STATISTICS

The number of institutions for secondary education of the higher degree on December 31, 1928, was: Royal athénées, 24; athénée sections annexed to middle schools, 11; communal and provincial colleges, 4; and patronized colleges, 10; total, 49. Those of the lower degree were: Middle schools for boys—National, 91; communal, 7;

¹ Mais quant à la législation proprement dite, on est généralement d'accord pour le reconnaître, elle offre aujourd'hui l'image d'un appareil quelque peu suranné, dans ses principes comme dans ses modalités. Bauwens, M. Léon. Code de l'enseignement moyen et de l'enseignement normal moyen. Bruxelles, 1929.

patronized, 6; total, 104; middle schools for girls—national, 46; communal and provincial, 8; patronized, 2; total, 56; total of middle schools, 160; and of institutions for secondary education, 209.

The enrollment in the institutions of the higher degree for four years was as follows:

TABLE 1.—*Enrollment in institutions for secondary education of the higher degree*

Level of study	Enrollment by year			
	1925	1926	1927	1928
1	2	3	4	5
Preparatory (primary).....	1, 254	1, 053	1, 037	824
Secondary instruction.....	11, 109	11, 073	10, 983	10, 875
Total.....	12, 363	12, 126	12, 020	11, 699

While there was a regular decrease in enrollment for the four years, by far the larger part of it was in the preparatory classes, probably a desirable trend. These institutions permit the attendance of a few girls—something less than 200—very few indeed, considering the number of the schools and their total enrollment. In the 160 middle schools, 56 of which are for girls, the enrollments for the same years were:

TABLE 2.—*Enrollment in institutions for secondary education of the lower degree by year, sex, and level of instruction*

Level of instruction	Enrollment by years							
	1925		1926		1927		1928	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1	2	3	4	5	6	7	8	9
Preparatory (primary).....	13, 525	6, 387	12, 227	6, 215	11, 486	5, 724	11, 406	5, 844
Middle school.....	10, 366	6, 067	10, 204	6, 083	9, 858	6, 226	9, 179	5, 688
Total.....	23, 891	12, 454	22, 431	12, 298	21, 344	11, 950	20, 585	11, 532
Total boys and girls.....	36, 345		34, 729		33, 294		32, 117	

The children, numbering in 1928 a total of 18,074, in the preparatory classes are studying on primary education levels, and are rightfully to be added to the 811,077 that were for that year enrolled in the schools properly called primary (see p. 20). There remained in 1928 actually studying on the levels of secondary education of the lower degree, 14,867 pupils, about 38 per cent of whom were girls, and in the higher degree, 10,875 that were less than 2 per cent girls.

The steady decreases in enrollments in secondary education are due not to any lack of interest on the part of parents and children

or of any less effort on the part of the nation, but probably wholly to the decreased birth rate during and about the period of the war. Indeed the National Government's efforts to better secondary education are unceasing.

EXPENDITURES

The expenditures from national funds for the corresponding years were as follows:

TABLE 3.—Expenditures in francs for secondary education in the years 1925 to 1928, inclusive

Purpose of expenditure	1925	1926	1927	1928
1	2	3	4	5
Council for perfecting.....				
Inspection.....	8, 958	1, 357	736	11, 999
Jury for test in modern languages.....	506, 099	515, 323	603, 944	1, 383, 776
Personnel: General expenses, salaries, indemnities.....	2, 698	5, 565	6, 029	9, 607
Subsidies to communal schools.....	37, 023, 082	36, 372, 305	46, 280, 726	192, 147, 210
Purchase of books; missions: travel scholarships.....	354, 272	259, 997	358, 332	998, 808
Subsidies to the communes for equipment and furniture.....	25, 680	19, 729	25, 824	41, 349
	118, 000	90, 102		199, 814
Total.....	38, 038, 789 (\$1, 057, 478. 33)	37, 364, 378 (\$938, 729. 71)	47, 275, 691 (\$1, 314, 264. 21)	94, 792, 562 (\$2, 635, 233. 22)

¹ The great increase is due to an equalization of salaries and to the fact that advances were made from national funds for some amounts due from the communes.

INSPECTION

The inspection of the secondary and teacher-training schools is to a considerable degree united in a corps of 24 inspectors consisting of an inspector general, 4 secondary education inspectors that give part of their time to the primary normal schools, 6 primary normal school inspectors, 4 of whom give part time to secondary schools, 1 for kindergarten normals, 2 inspectresses of the girls' work, 2 each for modern languages, gymnastics, drawing and manual training, and music, 1 for the accounts of the national schools, and 1 special inspector. These are all members of the ministry and usually reside at Brussels. Their programs of inspection and travel are arranged within the ministry; no previous notice is given to any school of the coming of an inspector.

Each institution must be visited at least once a year by competent inspectors who have authority to inquire very thoroughly into its organization, discipline, strength of teaching corps, methods of instruction, progress, and other things pertaining to its general welfare. The inspector must report on each member of the professional staff. If his report on any member is unfavorable he must state the reasons. Staff appointments, promotions, and changes proposed by the minis-

ter are submitted to the inspector general and the competent inspectors for their opinions. A report on each inspection is made at once to the ministry; a general report is sent in annually. Both the inspector general and any member of his corps may be called upon to help at sessions of the council for perfecting secondary education.

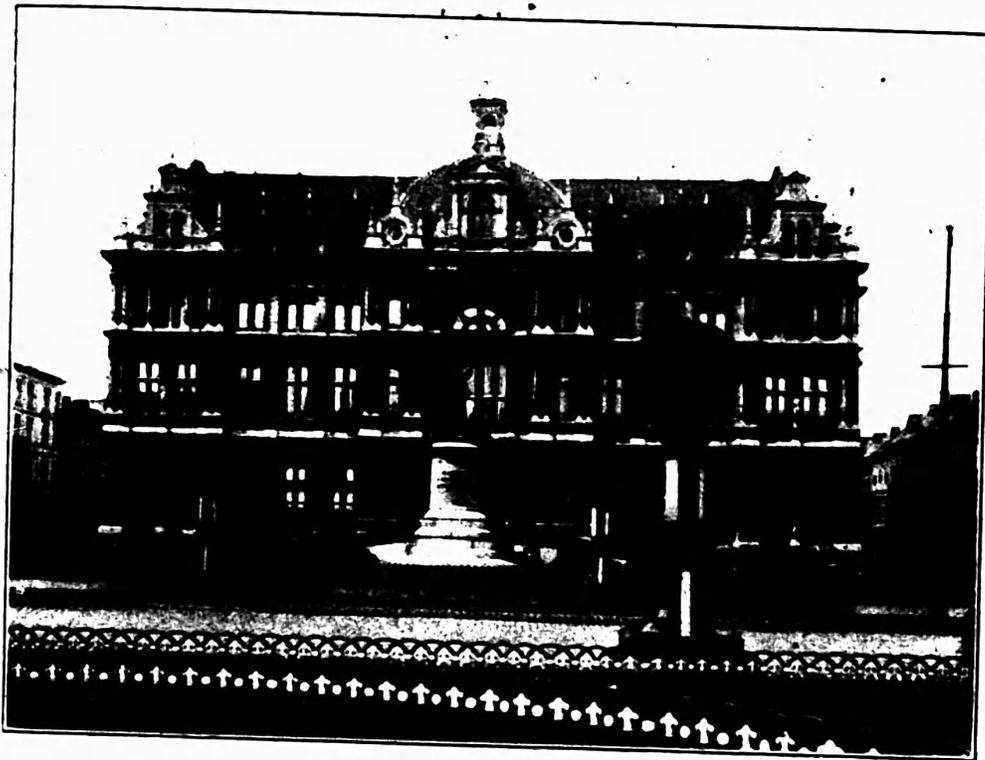
THE LOCAL BOARD

The local surveillance of the athénée is in a bureau of administration (bureau d'administration) composed of six persons chosen by the communal council, and of the collège of the council as ex-officio members. None of the six may be at the same time a member of the collège or the athénée staff. Meetings are held at the call either of the governor of the Province or the burgomaster of the commune. Its principal duties are to approve and transmit the budget, and report annually to the minister on the finances and general condition of the institution. It may at any time present its views on the personnel, programs, books, and progress of education in the athénée. It must present them on any matter pertaining to the school when asked by the government. A member may visit any part of the athénée, question the pupils, assist at examinations, and watch the progress of the work, but it is expected that the principal will accompany the visitor and the principal is the only member of the staff with whom the bureau may correspond.

INTERNAL ORGANIZATION

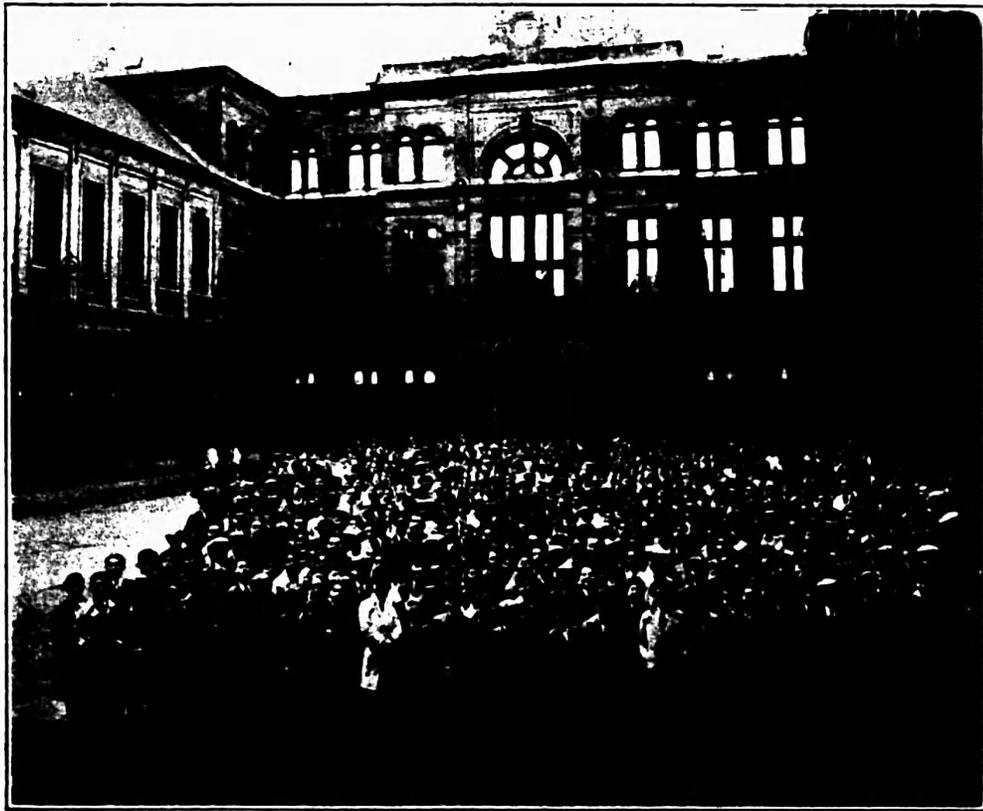
The schools are well organized; responsibility is carefully placed. The regulations for their management, like the programs and the outlines of study, are set in royal arrêtés and modified from time to time as occasion warrants. The administration of the royal athénée is fairly typical of all the institutions of secondary and teacher-training status. Its personnel includes a principal (préfet d'études), one or more professors of religion, professors of general courses, professors of special courses, and study masters (maîtres d'étude).

The principal directs and controls the studies, maintains order and discipline, assigns the duties of each other member of the staff, and represents the school in its contacts with the parents and the different authorities. Yearly he or his delegate works with the directors of the middle schools of the region to recruit pupils for the athénée. He presides at the admission of all new pupils, must be at the disposition of the parents at least three times a week, and may call parents' meetings to discuss matters of common concern relating to the school. He with his staff are held responsible for helping parents choose careers for their children. He is required to keep all of the records commonly used in pupil accounting, the registry of his correspond-



30-1

ROYAL ATHÉNÉE AT ANTWERP



STUDENTS ASSEMBLED IN THE INNER COURT OF THE ROYAL ATHÉNÉE AT ANTWERP

30-2

ence, and the inventory of the school property. The duties of each professor are fixed by the ministry on his proposal.

The study masters are under direct authority of the principal and to them is assigned the work of keeping order and discipline when the pupils are not in the control of some professor, particularly during common study hours and lunch hours for children that come from a distance. Changes in the duties of any of the personnel must be approved by the minister.

In school hours and around the school premises, pupils must be always under the observation of some member of the staff. Any pupil may be held accountable by the school for conduct outside of school hours.

SCHOOL YEAR

The school year begins on the 15th or 16th of September and closes on the 14th or 15th of July. The vacations are: Winter, December 24 to January 3, inclusive; spring, from the Sunday before to the Sunday after Easter; and summer, July 15 to September 15. The other regular holidays are Monday and Tuesday of Pentecost; Ascension day; the 1st to the 3d, inclusive of November; April 8, the anniversary of the King; Armistice day; and November 27, the patronal fête of the King. Classes are in session 6 days in the week with Thursday afternoon off, and Saturday afternoon if the distribution of work permits. When the number of pupils in any class is more than 40 in the lower three years of the athénée or 30 in the higher three years, the class will be divided the following year.

RECENT CHANGES IN PROGRAMS

The ministerial arrêté of April 15, 1929, which sets out the new programs of study for the institutions of secondary education and which carries on reforms and tendencies that have been growing in Belgium for some time, proposes to balance better the hours and programs; to make both flexible to the instructional needs of the pupils; to stop the overburdening resulting from home work, compositions, and over-long school journeys; to strengthen the work of the young people in class and reward their regular application; to teach them simple and rational methods of school effort and through that, intellectual effort in general, and finally to promote a true education and culture.

In the attempt to lessen the school work and give the children more opportunity for recreation and physical development, the number of school hours is limited to 34 a week. The teachers are warned that assigning tasks for home study is generally useless; and that it is habit rather than subject matter that the pupil is to acquire.

It is necessary that by exercises skillfully coordinated and graded, by efforts patiently directed in class, the pupil learns to do his school tasks by the surest, most rapid methods, those that are most appropriate to his age and to his individual aptitudes.¹

SECTION I.—SECONDARY EDUCATION OF THE LOWER DEGREE: MIDDLE SCHOOLS

The middle school is not, like the junior high school in the United States, an exploratory school. Courses in it are seldom elective; curricula are, and the child having once chosen some one of the six that are offered will not as a rule change to another. Its chief purpose is to begin the general training in the languages and the sciences thought necessary for more advanced study and later specialization. In its last year it yields to some extent to vocational demands in commerce and teacher training.

CURRICULA

The six curricula comprise the studies offered in the two divisions each of the ancient and the modern humanities, those of the section of general instruction, and of the commercial section. Each of the first four is planned as the beginning 3-year cycle of a curriculum six years in duration.

General instruction.—The curriculum for the section of general instruction does not differ greatly from the two in modern humanities and may lead into them in the second 3-year cycle. For the girls it is modified by decreasing the hours given to mathematics, increasing the manual work, and adding domestic economy. The official program follows:

¹ Ministère des sciences et des arts. Enseignement moyen du degré inférieur. Horaires et programmes des études dans les écoles moyennes pour garçons et pour jeunes filles (Arrêté ministériel du 15 avril 1929). Liège. Georges Thone, éditeur. 1929.

TABLE 4.—Program of studies for the section of general instruction

Subjects of instruction	Hours per week		
	First year	Second year	Third year
1	2	3	4
Religion and morals, or morals.....	2	2	2
First language.....	7	7 or 5	5
Second language.....	6 or 8	5 or 7	5
Third language ¹		(3)	(3)
Fourth language ¹			(2)
History and geography.....	3	3	3
Mathematics.....	4	4 3*	4 3*
Sciences.....	2	2	2
Commerce.....			3
Drawing.....	2	2	2 1 (2)
Manual work ⁴	1 2*	2	2*
Domestic economy ⁴	1*	2*	1*
Physical education.....	2	2	2
Music.....	1	1	1
Total, including hours of supervised study.....	30 or 32 32* or 34*	33 34*	34
Courtesy: 8 conferences a year in each year.			

NOTE.—The modifications made for girls are shown by the figures marked with an (*).

- ¹ The number of weekly lessons required in the Flemish schools and sections.
- ² In all the middle schools of Belgium no pupils in the general instruction division may take the third and the fourth language who have not made at least 0.5 of the points in composition and daily work in the first and second languages combined; they must take complementary exercises in the first and second languages. Those that are entitled to take the third and fourth languages may select either or both, or replace one or both by complementary exercises in the first and second languages.
- In all the middle schools these complementary exercises, or hours, are:
 - (A) For pupils not studying the third or fourth language (a) in the French schools and sections—3 hours in French and 2 in the second language; (b) in the Flemish schools and sections—3 hours in French and 2 in Flemish.
 - (B) For pupils studying only the third language (a) in all the schools—1 hour in the first and 1 hour in the second language.
 - (C) For pupils studying only the fourth language (a) in the French schools and sections—2 hours in French and 1 in the second language; (b) in the Flemish schools and sections—2 hours in French and 1 in Flemish.
- ³ Girls may replace the fourth language by drawing.
- ⁴ In the Flemish schools and sections, 1 lesson a week in manual work and 2 monthly in the third in domestic economy must be held in French.

Ancient humanities.—In the ancient humanities curricula, manual work, commerce, and the fourth modern language are given no place; the third language is optional; Greek and Latin are both stressed in the Greek-Latin division, and Latin and mathematics in the Latin-mathematics division. Either of these, preferably the former in Belgium, is the beginning of preparation for the study of the professions in a university.

TABLE 5.—Program of studies in the ancient humanities, Greek-Latin, and Latin-mathematics divisions

Subjects of instruction	Hours per week by class		
	Sixth class	Fifth class	Fourth class
1	2	3	4
Religion and morals or morals.....	2	2	2
Latin.....	6	6	6
Greek.....	5	5	5
First language.....	5	4	4
Second language.....	5	4	4
Third language.....			(3) ^a 1(3)
Fourth language.....			
History and geography.....	3	3	3
Mathematics.....	4	3 1 4	3 1 4
Sciences.....	2	2	2
Drawing.....	2	2	(2) ^b 2
Physical education.....	2	2	2
Music.....	1	1	(1) ^b 1
Total, including hours of supervised study.....	32	34	34
Courtesy: 8 conferences each year.....		30	30+1(3)

¹ Greek is omitted entirely from the Latin-mathematics division.

² Relate only to the Latin-mathematics division.

^{a, b} The student may elect either a or b in the Greek-Latin division.

Modern human.....—In the modern-humanities curricula, those for sciences and commerce differ only to the extent that two hours of a fourth language are required in the fourth class of the latter and not in the former. Both are designed to give broad general training.

TABLE 6.—Program of studies in the modern humanities, scientific, and commercial divisions, according to hours per week by class

Subjects of instruction	Hours per week by class		
	Sixth class	Fifth class	Fourth class
1	2	3	4
Religion and morals or morals.....	2	2	2
First language.....	7	7 or 1 5	5
Second language.....	6 or 1 8	5 or 1 7	5
Third language.....		3	3
Fourth language ¹			(2) ²
History and geography.....	3	3	3
Mathematics.....	4	4	4
Sciences.....	2	2	2
Commerce.....			2
Drawing.....	2	2	2
Manual work.....	1	2	2
Physical education.....	2	2	2
Music.....	1	1	1
Total, including hours of study.....	30 or 32	33	32+(2) 34 ³
Courtesy: 8 conferences a year for each year.....			

NOTE.—The modifications for the commercial division are shown by the figures marked with an (*).

¹ The number of hours required in the Flemish schools and sections.

² The fourth language is elective.

Commercial section.—The commercial section must not be confused with the commercial division whose program is the slight modification, just shown, of that for the scientific division. The program of the commercial section calls for two years of study, the first one of which is on a level with the third year of the middle school. It is presumably complete in itself and is strictly specialized. The program is as follows:

TABLE 7.—The division of time assigned to the different subjects of instruction in the commercial section

Subjects of instruction	Number of hours a week	
	First year	Second year
1	2	3
Religion and morals.....		
First language.....	2	2
Second language.....	5	5
Third language.....	5	5
Fourth language ¹	3	4
History.....	2+1	3
Geography.....	2	
Elements of economic history.....	1	
Elements of economic geography.....		1
Mathematics.....		2
Physical and natural sciences.....	4	2
Knowledge of commercial products.....	2	
Commercial sciences.....		2
Physical education.....	3+2	6
Total.....	2	2
Stenography.....	34	34
Courtesy.....	4 half-hours.	4 half-hours.
Elements of political economy.....	8 talks a year.	
Elements of commercial economy.....	10 talks a year.	10 talks a year.
	10 talks a year.	

¹ The first 2 hours are common to the general and commercial sections; the third is for complementary supervised study which serves to make further application of things taught in the common course.

Which of these curricula do the children, or their parents for them, prefer? As between the ancient and the modern humanities: Of 7,904 students reported in 1925, the ancient humanities enrolled 43 per cent, the modern, 57 per cent; in 1926, of 7,748, the percentages were 45 and 55; in 1927, of 7,605, they were 46 and 54; a slight steady gain in three years in favor of the ancient humanities.

OUTLINES OF THE COURSES

The outlines of the courses for the secondary schools are carefully laid out by the ministry, and followed closely in the official schools. Since they are the details of the instruction arranged for children between the ages of 12 and 15, particularly those that expect to go on to the universities, they are reproduced here considerably summarized and condensed. The subjects are given in the order listed in the program of studies for the section of general instruction.

RELIGION AND MORALS

Religion.—The ministers of the different faiths arrange their own courses of study.

Morals.—This course is only for those pupils who do not take the instruction in religion. The method differs from both the simple talks on daily life given in the primary school, and that used in higher education of a survey of the abstract principles of morals as they are conceived in the various schools of philosophy. Here it is intuitive; conclusions that may serve to regulate conduct are drawn by the pupils after examination and discussion of the works they have read. Out of the many books suggested, the teacher groups chapters and pages around certain great moral ideas as centers of interest, and tries to apply them in a practical way to the facts of daily life.

Among the books for reading are: De Amicis, "*Grand cœurs*"; Ch. Wagner, "*Par le sourire*," "*Pour les petits et les grands*," "*A travers les choses et les hommes*," and "*A travers le prisme du temps*"; Plutarch, "*Lives of illustrious men*"; Smiles, "*Self-help*"; and short biographies of great men and women such as Saint Vincent de Paul, P. Damien, Livingstone, Sergeant De Bruyne, Scott, Gabrielle Petit, Amundsen, and others. The teacher is required neither to use all these authors nor to limit himself to them.

LANGUAGES

In the ministerial arrêté much space is necessarily given to the courses in language; either ancient or modern, they take a large part of the student's time and effort. That is in response to an absolute need, and the feeling of necessity for knowing languages leads easily to an ideal of training in them. The modern-language courses are always two, the first and the second; sometimes three, and on occasion, four. The third and the fourth are open only to pupils who have done good work in the first two; otherwise complementary exercises are given in the first and the second. In any case the instruction is carried on along six lines: Phonics, practical grammar and orthography, vocabulary and phraseology, explained readings, elocution, and composition.

Methods.—*Supervised study* is used; the general directions for it are as follows:

Grammar and spelling.—A completed exercise in dictation, including correction and appreciation, is an excellent type of supervised study; also exercises in making up examples of application of the rules, the explanation of continued texts; in addition, in the foreign languages, oral and written themes.

Vocabulary and phraseology.—Exercises in vocabulary by families of words or even in real order; practice with the dictionary; keeping a vocabulary notebook; preparation of texts from the lexicon point of view; practical exercises in phraseology; etc.

Explained readings.—Preparation of texts on a questionnaire made by the teacher; plans or résumés of readings in class or at home; etc.

Composition.—Short tasks at supervised observation and style; searching out ideas; plans of compositions; short descriptions, narrations, letters; development of determined parts of longer compositions; etc.

French—The First Language

The following outline for French, the first language, is a translation from the arrêté. Note the comments and instructions that are emphasized by the ministry; they are the things considered important by people that have had much experience in teaching languages.

First Year

Phonics.—Sounds and letters; tonic accent; length; principle rules for connections. Correction of individual and regional faults. Exercises. *Theory must be kept to the simplest principles.*

Practical grammar and spelling.—Systematic review of the ideas studied in the primary school; complements; short study of the sentence and the phrase; construction; punctuation. Study of morphology and of the elements of syntax. Exercises (a) oral: Analyses and applications; (b) written: Dictation from the text, applications, exercises in invention. Supervised study. Manuals.—A grammar and an exercise book. *Morphology and syntax are to be taught concurrently. The number of spelling exercises (dictated and applied grammar) will be arranged to suit the needs of the class. No method of assuring good spelling should be neglected.*

Vocabulary and phraseology.—Development of an ordinary vocabulary. Families of words; derivation and composition. Homonyms, antonyms, synonyms, analogous groupings, propriety of terms, idiomatic and proverbial expressions. Numerous oral and written exercises. Practice with the dictionary. Supervised study. Manual—A dictionary. *The learning and reciting of lists of words should be avoided as well as insisting on a technical vocabulary.*

Explained reading.—Explanation of easy texts in prose and verse chosen from contemporary authors. Expressive reading and recitation of texts explained thoroughly in class. Supervised study. Manual.—An anthology of excerpts from French and Belgian authors. *The choice of texts will often be determined by the necessities of the course in composition. For recitation preferably easy texts in verse should be chosen.*

Elocution.—Reports made on brief works or even of reviews of literature or of adaptations appropriate to the age of the pupils and read by the teacher. Oral development of very simple subjects indicated by the teacher or freely chosen by the pupils. Collective critique of the exercises. *In many classes, it is advisable to have all the pupils prepare the same exercise in elocution, in order that they may take an active part in the lesson, either in continuing the exercise, or in repeating it.*

Composition.—Simple descriptions and narrations; ordinary letters. Supervised study. At first, especially, the wording will be carefully prepared in class. The teacher will use the principal developments for group work; he will teach the vocabulary and, if necessary, read a model. Composition itself will be used frequently for supervised study. Little by little the teacher will be able to leave a greater part to the initiative of the pupils.

This is the place to teach the ordinary forms of correspondence.

Second Year

Phonics.—Review of preceding year. Special cases of connections and of accents. Exercises.

Practical grammar and orthography.—Study of sentences. Exercises: (a) Oral—grammatical study of the text; exercises in analysis; applications; (b) written—dictations, applications, exercises of invention. Supervised study.

Vocabulary and phraseology.—Review and develop the preceding year's work. The Latin and Greek roots most useful in learning an ordinary vocabulary. Many oral and written exercises. Use of the dictionary.

Explained reading.—Prose and verse texts from contemporary authors. Reading short narratives and dialogues of known authors. Expressive reading and recitation of texts thoroughly explained in class.

Elocution.—Summaries of short pieces or of review articles read by the teacher. Oral development of simple subjects chosen by the teacher or the pupils. Collective critique of exercises.

Composition.—Description and narration. Ordinary letters. Supervised study.

* *Third Year*

Phonics.—Review. Special cases. Mute "e." Pronunciation of most-used foreign words.

Grammar and orthography.—As in the second year, more advanced.

Vocabulary and phraseology.—More advanced work along the same lines.

Explained readings.—Selections mostly from classical authors. Narratives and dialogues. Short biographies of the authors. Elements of versification. Reading and recitation of pieces fully explained in class.

Elocution.—As in the previous class with the addition of accounts of trips, excursions, walks, etc. Descriptions of museums, shops, and other places visited. Analysis of pictures, tableaux, etc.

Composition.—Descriptions, portraits, narratives, letters, requests, development of proverbs and maxims. The subjects should be drawn from direct observation. They should appeal to the interest and imagination of the pupils and always be clearly defined and limited.

French—The Second Language

The outline for French as the second language is very similar to that for it as the first, except for certain special directions. These include insistence on the limited use of the direct method, the explanation of the meanings of many words through the mother tongue, constant comparisons between the two languages, differences in their grammatical processes, avoiding superfluous definitions, confining the study to a general and usable vocabulary, and gradually developing the terminology of literary analysis.

Flemish—The First Language

Throughout the three years the outlines of the course and the methods of teaching are practically the same as for French.

Flemish, the second language, follows the same plan as that for French, the second language.

Flemish, the third language, begins in the second year of the middle school; the two years of study correspond to the first and second years of Flemish as the second language.

German, the second language, follows the same plan as French, the second language.

German, the third language, is begun in the second year of the middle school and follows the plan for the first two years of study of German as the second language.

German, the fourth language, is begun in the third school year and corresponds to first year German as the second language.

English—The Third Language

Second Year

Phonics.—Practical ideas of pronunciation and accent. Collective and individual exercises in articulation and reading.

Grammar and orthography.—The elements of the grammar. (a) Morphology. The noun, gender, formation of the plural, the adjective, degrees of comparison, conjugation of *to be*, *to have* and of the regular verbs in the indicative present, the imperfect, perfect, future, and imperative. Interrogative and negative forms. The progressive form. Primitive tenses of most used strong verbs. The determinants. Names of numbers. Pronouns. Possessive case. (b) Syntax. Construction of the phrase. Placing the adverb. Exercises in application, themes, some dictation.

Vocabulary and phraseology.—The vocabulary used in the class, the home, the street, for clothing, the seasons, etc. Families of words. Exercises principally oral.

Explained reading.—Reading and explanation of simple and interesting excerpts. Reading and memory exercises of explained passages.

Elocution.—Conversation exercises on the texts or wall charts studied in class.

Composition.—Short essays relating to subjects taught.

Third Year

Phonics.—Development and review of the work of the preceding year.

Grammar and orthography.—Review. General theory of adjectives and pronouns, the verb, conjugation completed, passive forms, use of auxiliaries and defectives, use of modes and tenses, the *ing* forms, the adverb, the preposition, the conjunction.

Vocabulary and phraseology.—Study of terms used in daily and in English life. Idioms. Families of words. Exercises mostly oral.

Explained reading.—As for the preceding class.

Elocution.—Ordinary conversation with relation to the study of the vocabulary. Reproducing lessons from the text.

Composition.—Reproducing articles read in class. Easy description and narration. Ordinary letters.

English—The Fourth Language

The same as the second year of study of English as the third language.

HISTORY

Methods.—Children from 12 to 15 years are generally taught history by a process that demands the least effort; usually it is wholly an exercise in word memory. Lessons so learned—need it be said—have no educational value; they do not guarantee a knowledge of history, such as a cultured person should have. The pupils should be taught to memorize only those things that merit being made definite and for the remainder, to use their imaginations, sensibilities, and reasoning powers.

In the course of the three years of study, the teacher will fix in the minds of the pupils the essential events of history. He will characterize each people and each period by their dominant traits, by the great facts that illustrate them, by their fundamental institutions. He will emphasize by some picturesque or touching anecdote the history of the persons that have played a prominent rôle.

Examples of supervised study in history. (1) Study of the lesson by a questionnaire furnished by the teacher. (2) Résumé of a lesson or a series of lessons. (3) Making up synoptic or synchronic tables. (4) Analysis of some document (engraving, pictures of monuments, costumes, armies, or historical scenes) in application of a given lesson. (5) Searching through manuals or other books for points indicated by the teacher. (6) Accounts of historical readings.

* Pp. 40 to 55 and 57 to 80 are summaries of the statements and outlines contained in the official programs of study.

First Year

Antiquity.—The Oriental peoples: The Egyptians, Chaldeo-Assyrians, Phœnicians, Hebrews, and Medes and Persians. Greece, to its dismemberment and the Roman conquest. Rome, to the barbarian world. Middle Ages, to the fall of Constantinople.

Second Year

Modern times.—To the Treaty of Vienna, the Holy Alliance, the politics of Alexander I, and the system of Metternich.

Third Year

Contemporary history.—To the World War; its results. Europe as it is to-day. The League of Nations. *History of Belgium.* From primitive Belgium to its present status, the economic and intellectual points of view.

GEOGRAPHY

Methods.—The methodical observation and explanation of chosen geographic phenomena are the object of the course. The result is that studying geographic nomenclature is never done for itself; the terms, general or special, are learned to suit the needs of the teaching; their use is taught by exercises graded by their nature and importance in grasping geographic facts.

The study of geography begins in observation, at times of photographs or pictures, and regularly of outlines or maps showing the facts about the regions studied. The observations are coordinated in descriptions and the pupil is led to recover them in whole or in part either in accounts of travellers or explorers, or in geographic works. He will show the relationships between these and the geographic facts, and in such case he will represent graphically their evolution in time.

The work applies to regions more or less extended, continents or great natural divisions of the continents. The particular features of the geographic landscape should be shown in place in special excursions. These exercises precede the study of large scale maps or of graphic documents, the complete analysis of which is in general above the level of secondary education of the first cycle.

In the study of a special country or of a more extended geographic unit, the teacher will follow the natural order of the phenomena which permits developing and explaining them gradually. Consequently he studies in succession the astronomical situation of the political or territorial unity under consideration, the climate, the aspect and nature of the soil, the hydrography, the natural regions with their resources (agriculture, commerce, and means of communication), the population from the ethnologic point of view and its functional divisions in the economic state, and finally the political organization of the country in question.

To avoid repetition, the physical geography of the different countries should be attached to a general study of the great natural regions.

Supervised study.—Study of the lesson by a questionnaire furnished by the teacher. Résumé of a lesson or of a series of lessons. Blank maps to be filled in, rough drafts, cross sections, graphs, diagrams, etc. Reading maps, excursions. Preparing from the manual or from other books, lessons on topics chosen by the teacher.

First Year

Some inductive lessons on geographical phenomena due to the action of air and water; rôle of these agents in the formation of soil and the determination of the climate. The constant winds, the ocean currents. Physical geography of Europe, its great natural divisions. Economic and political geography of the nations of Europe.

Group the secondary States according to their great natural regions. Teach the relations of each nation with Belgium.

Second Year

The world, other than Europe, its physical geography and great natural divisions. Economic and political study of one important country on each continent, its relations with Belgium. Special study of the Belgian Congo.

Third Year

Belgium, its physical geography, its natural regions, their character, resources, and activities. Commerce, roads, and means of communication. Political, judicial, and administrative organization of Belgium.

Elementary ideas of cosmography. Brief study of the solar system, the movements of the earth, day and night, the seasons in the different terrestrial zones, and the influence of these phenomena on the geography of the zones, phases of the moon, eclipses, tides.

MATHEMATICS

Methods.—In secondary instruction, mathematics has an aim essentially educational; its great value need not be proved. It is of little importance to pupils that are not going on to special schools or to the study of higher mathematics, to have learned in the classes of humanities a number more or less great, of mathematical truths and to have been able, at a given time, to reproduce a demonstration; but it is necessary in forming their minds, that when it is necessary to solve questions, they have been impregnated with the method of the mathematical sciences. That aim will be attained only if the attention of the pupils is kept constantly on the bonds of logical dependence which bind a new truth to truths already known. That is not achieved if there are presented to the pupils demonstrations and solutions that they understand and remember for some time

perhaps, but whose mechanism has not been grasped by their minds or whose reason for being is not apparent to them.

The way to success is to present each new proposition in a manner to suggest to the pupils a course to follow in order to reach the demonstration or the solution, either by having them discover the known propositions from which they will be able to associate the hypotheses to reach a conclusion, or by having them reach a conclusion drawn from successive propositions whose verity is sufficient for the conclusion, or even by associating in some measure these two methods of research after both have been proved separately.

Applied from the beginning of the reasoned instruction in mathematics, this method leads the pupil to approach every proposition in active reflection so that an exposé does not address itself merely to his passive receptivity and his formal memory, and that by as much more so as the exposé is nearer to perfection. Habituated to approach difficulties by an active effort of the mind, the pupil in the applied work that is asked of him will not be abandoned to the hazards of happy inspiration. But in the presence of a question somewhat related to mathematics he will know how to reduce it either to a solution or to a radical difficulty that he recognizes as beyond his powers and for which it is necessary for him to have the help of a specialist. May not that reasonably be attained in every cultured man?

A proper use of the resources of mathematics supposes that the searcher has an ample provision of known propositions one of which he will apply, after reasoned choice, to the question proposed to him. The memory of statements of previous verities plays an indispensable rôle in his work. But it is well to make a classification of the verities committed to memory. When the teacher has in mind a part of the course making a clearly limited whole, he should select some, generally a very few, of the fundamental propositions; he will point out the dependence of others on these and that work of review and classification will assure retaining the essential and help also in remembering the others, at least in the pupils of ready memory. That done, without doubt it will happen that in the course of a solution the average pupil, of rebellious memory, will go too far and pass over on the way some known proposition, a point of departure for a more rapid solution; but is that a use any the less happy of the mathematical method? On the contrary, in case of active research, similar slownesses are not a loss of time. They rouse languishing memories and each one of them contributes to preparation for future researches more economical.

Supervised study.—Do calculations with clear, full showing of the operations. Find the outline of a demonstration or solution that the pupils have before them. Arrange the scheme of dependent

relations between the parts of one chapter or one theory, and distinguish the essential and the secondary propositions. Find in a theory the applications mediate or immediate of a given proposition. Find the demonstration or the solution of a problem: (a) the point of departure being given by the pupils; (b) the point of departure being sought by the pupils.

A. Middle Schools for Girls (Section of General Instruction)

First Year

Arithmetic. (A) Practical.—Review and application of the work of the fifth and sixth years of the primary school. Usual problems of specific weights of solids and liquids, means, mixtures, and alloys; methods of reducing to a unity; proportional parts, loss and gain, bounties and tares expressed in per cent, simple interest and commercial discount. (B) Theory.—In studying the processes of addition, subtraction, multiplication, and division, the teacher will always begin by showing the truth of the process with individual examples; after that he will give an intuitive demonstration of the theorem, and later go to the abstract demonstration. If the last seems too difficult for pupils of the first year, he will reserve it for the second and third. In work requiring the different operations, he will insist particularly on the proper order of using them. The four fundamental operations with whole numbers; simple letter formulas for each; these operations extended to ordinary fractions and decimal numbers; aliquot parts; simple calculations on concrete numbers such as time, arcs to angles, etc.

Intuitive geometry.—Straight line and plane, segments; circles, arcs, central measure of the angle; use of the rule, divided rule, square, compass, and protractor. Simple and intuitive study of geometrical forms. Areas of the square, rectangle, parallelogram, diamond, trapezium, polygons, and circle. Volumes of the prism, cylinder, pyramid, cone, and sphere.

Second Year

Arithmetic. (A) Theory.—Review of the previous year. Equalities and inequalities; powers; division of two whole numbers; generalized fractions; agreement of two numbers; numerical proportions, direct and inverse proportion. (B) Practical.—Graded problems in the work of the previous year; intuitive algebra leading to the equation of the first degree; solving problems by the proportion method; simple interest and commercial discount to develop the formula (a) to find the expression of the value of one of the factors in the problem; and (b) to find a practical method of calculating interest and discount. Applications.

Geometry.—Elementary notions, axioms; angles; triangles, perpendiculars and obliques, right triangles, equal triangles; definition of the geometric locus, locus of a point equidistant from two points or two right lines; parallels; sum of the angles of a triangle, of a convex polygon. Applications.

Third Year

Arithmetic.—Principal theorems relating to division; quotient of two whole numbers to nearly $1/n$; special case where n is a power of 10; quotient of two decimal numbers to nearly $1/10^n$; the greatest common divisor; factors and prime numbers, the least common multiple; square root of whole, fractional and decimal numbers. Applications.

Algebra.—Reviewing the fundamental operations with their letter formulas; relative or qualified numbers, numerical scales, algebraic fractions; algebraic calculation, monomials, polynomials; the four fundamental operations with algebraic quantities; equalities, identities, equations of the first degree and rules for solution with one unknown quantity.

Geometry.—Review. The plane figures, figures symmetrical with regard to a point or a right line; circles, right line intersections, tangents, arcs, chords, graphic problems, geometric loci.

B. Middle Schools for Boys (Section of General Instruction)

The programs for first and the second year differ little from those for the girls.

Third Year

Arithmetic.—The program for the girls plus varied problems on the least common multiple, insurance, mutualities, Government bonds, obligations and actions of societies, savings banks under national guarantee, compound interest, and annuities with use of tables.

Algebra.—Multiplication and division of polynomials, factoring, divisors and multiples; rational fractions; equations with one unknown; systems of equations of the first degree with two or more unknowns, methods of solution, cases impossible of solution; simple ideas of calculating two radicals.

Geometry.—Circle. Intersection of line and circle, tangents, arcs, chords, measurement of angles, graphic problems; proportionals; similar triangles and polygons; equivalent figures; Stewart's theorem; proportional segments, the inscribed quadrilateral; graphic problems in proportional lines, similar and equivalent figures; geometric loci; surveying, use of instruments, leveling. The work must be made as practical as possible.

PHYSICAL AND NATURAL SCIENCES

Methods.—The aim is to initiate the pupils into methods of observation and of applied experimentation in the matter or phenomena with which they are dealing. The natural sciences' appeal to reflective observation: Inquiry into the characteristics of the things studied, comparison of these characteristics by grouping the resemblances and the differences, from which comes the establishment of classifications. The physiological study of living beings must be kept to those phenomena that can be observed directly. Those requiring a knowledge of physics or chemistry must be taught later. Experimental physics includes the qualitative examination of phenomena and the measurement of those that can be expressed in very simple mathematics. Striking facts, the easiest to reproduce, to observe, and to measure will be presented. In third-year chemistry a certain number of simple and compound substances are studied from a descriptive point of view. The teacher will conduct a few useful experiments, direct the pupils' observation, have them tell what they have seen and later write it in their notebooks.

Supervised study.—Description of a plant or an animal by a questionnaire furnished them. Determination of a vegetable or an animal species. Accounts of experiments made in class or at home. Preparation of a question, from the manual, that will be taken up by the teacher at the next lesson.

First Year

Zoology (two lessons weekly in the first two trimesters).—Human anatomy: the skeleton, muscles, nervous system, and sense organs. Digestive, circulatory, respiratory, and excretory systems. Study of types chosen from among the best known and most widely distributed zoological groups. To the principal types are added some secondary types and resemblances and differences are pointed out in such a way as to show the dominant characteristics of the group to which the different types belong. The principal types are studied as to exterior, salient anatomical and ethnologic characteristics, and as to habits. The rabbit and other gnawing animals; the cat and other carnivora, the mole and other insectivores; an ape, the principal apes; a bat; the horse and the pachyderms; the elephant; the cow and the ruminants; comparison of the principal orders and dominant characteristics of the mammals.

Botany (two lessons weekly for the third trimester).—Analysis from the organographic and ethnologic point of view of flowering plants, chosen according to their seasons of bloom, from among the following: Tulip, fuchsia, anemone, hyacinth, stitchwort, gilliflower, Solomon's seal, marigold, broomrape, cherry, pear, buttercup, cyrtisus, iris, strawberry, eglantine, corn poppy, flax, sweet peas, bullfinch, Clematis, monkshood; lily, potato.

Second Year

Physics (one lesson weekly throughout the year).—The study will deal only with the essential principles. Matter, its properties, the molecule, cohesion, etc.; inertia; force; movements, uniform right line and uniformly varied (without formulas); forces, measurement and composition, work, power, simple machines; weight, as a force; falling bodies, center of gravity; equilibrium; the balance, weights. Hydrostatics; aerostatics; heat, temperature, the thermometer, quantity of heat, the calorie; changes in states of bodies, fusion and solidification, crystallization, boiling, evaporation, the cold of evaporation, condensation of vapors, distillation. Transmission of heat, conduction, convection, radiation, dew, and hoar frost.

Zoology (one lesson a week for the first two trimesters).—The pigeon, the cock and the Gallinaceæ, sparrows; the owl and the rapacious birds; the duck and the web-footed birds; the stork and the stilt-walkers. Comparison of the principal orders and dominant characteristics of the classes of birds. The lizard and the reptiles; the frog and the batrachians; the carp and some fishes. Comparison of the different classes and dominant characteristics of some branches of the vertebrates.

Botany (one lesson weekly during the third trimester).—Analysis from the organographic and ethologic point of view of some flowering plants, chosen according to the season of bloom, among the following: Narcissus, lilac, colt's foot, cowslip, dandelion, nettle, bindweed, pentstemon, delphinium, carrot, snapdragon, digitalis, flax, mallow, bluebell, bluebottle, corn-flower, marigold, great marguerite, and elder. Some elementary principles of classification. Show the essential resemblances in some family types as crucifers, caryophyllaceæ, papilionaceæ, umbelliferæ, labiatæ.

Third Year

Physics (one hour weekly for the year).—Teach only the essential principles. Light; electricity; magnetism. The teacher will augment the illustrative material at his disposal by taking the pupils on visits to shops to show how the natural energy in oil, petrol, the wind, and water is transformed into mechanical energy by steam engines, explosion motors, windmills, and turbines, and changed later into electrical energy by dynamos, transported a distance, and used for light, heat, railroads, and chemical energy. The pupils must be given some ideas of graphs and their uses.

Chemistry (one lesson weekly for the first two trimesters).—(A) Descriptive ideas—Oxygen and hydrogen, water, carbon, carbon dioxide, cleaning gases. Combustion. Chlorine and its compounds; sulphur and its compounds; nitrogen and its compounds; phosphorus. (B) Synthetic ideas.—Chemical phenomena, the use of chemistry,

mixtures and compounds, hypotheses as to the composition of matter, different chemical operations, metals and metalloids, acids and hydroxides, the acid function, the base function, salts, the laws of combinations.

Animal and vegetable physiology (One lesson weekly for the third trimester).—(A) Animal.—Summary of digestion, circulation, respiration, and excretion, with ideas of hygiene relating to each. (B) Vegetable.—Summary of germination, nutrition through roots and leaves.

COMMERCIAL SCIENCES

Methods.—The commercial sciences should be made practical by placing the pupils as nearly as possible in the mental attitude of actual practice and having them apply the rules they learn. Among these conditions are a clear and vital representation of the operations studied, the relations they imply, and of the organization in which these laws and customs are used. The explanations of the different elements will be made with each type of operations during the class or at opportune times. Associate closely the theory and the practice; the first should never be studied for itself but always for the needs of the second. Theoretical ideas of documents always necessitate analyzing actual documents; those that relate to accounting will be taught along with the accounting operations in which they function.

Supervised study.—All the practical work.

Third Year

Commercial arithmetic.—Review of interest and discount, commercial methods of calculating them. Have the pupils learn the rapid methods used in practice. Attach importance to doing computations so they can be proved. If an approximation is needed, have it expressed only in real units.

Organization. Documents.—Notes, bills, receipts, quittances, letters of exchange, orders, credits, bank drafts, checks, postal orders, bank clearances, postal clearances, assignments, letters of credit. Recovering quittances and effects by post. Postal rates. Organization of domestic commerce, its intermediaries, insurance, transportation, shipments. Principal commercial obligations. Show the pupils an abundance of examples of the different kinds of commercial papers.

Accounting.—Assets and liabilities at the beginning of an enterprise. Capital. Inventory. Balance sheet. Modifications of assets and liabilities. Calculating the results of a balance sheet. Amortization. Gains on merchandise. Table of profit and loss. Calculating the net result of an enterprise with the aid of a table. The ordinary accounting books, those prescribed by law, the journal,

the ledger. Theory of double-entry bookkeeping. Classifying accounts. Study of different accounts. Inventory, closing the journal and ledger. For practical exercises the pupils will keep a set of double-entry books. They will follow some commercial transaction from its beginning through all its phases. At the close of the school year the teacher will give some principles of centralization.

DRAWING

Methods.—Drawing has here a general educational aim. Eliminate the fantastic elements. The instruction is not intended to give occasion for the little personal talents of the pupils, nor prepare them for schools of applied art, nor to amuse them without real educational profit. The lessons in geometrical drawing aim: (1) To teach the pupils the practical manipulation of instruments in precise tracings of technical designs, orthogonal projections, etc.; (2) to initiate the pupils in making sketches of ordinary objects and in exercising their reflective, reasoning, and critical faculties. As much as possible the lessons in geometrical drawing should accord with the course in geometry, but they should not be merely an elaboration of the tasks in geometry. The domain of geometrical drawing is large enough so that the teacher may select the applications to the theoretical course. It will rest on its own merits, fulfill its own purpose, and aid the work in mathematics. The technical drawing will be based on methodical instruction, reasoned and intuitive from the principles of orthogonal projections, taught by the teacher at the beginning of the third year of studies. The work should be easy and progressive. It should not be neglected; it has an important place in the curriculum.

The value of rapid sketches made from nature is indisputable. It should be the almost exclusive object of nature drawing. The teacher will use it to develop rapid observation, and the spirit of synthesis, and to give the pupils a habit of summary notation, significant, comprehensive, and decisive. The geometric solids, abandoned for many years under the pretext that they are not attractive to the student, should be brought back to a place of honor, because more than other models, they initiate the pupils into the proportions of a whole and of its parts and help him to realize faulty perspectives. This drawing does not leave anything to improvisation, to the picturesque. It is a rigid master, perhaps, but it teaches surely.

Decorative composition should not be considered a game or a chance or a happy turn of the hand, furnishing some improvised and interesting results. This branch of the program requires, apart from some simple exercises in the application of theory, multiple analyses of the representations of varied objects used in the decorative art. It does not, need it be said, lead to professional schools or schools of decorative art.

History of art in its general form here should be given in talks from some concise notes. The teacher should not try to furnish a list of artists, works, biographies, nor give a scientific course in art and archeology. The time is too short for that. He will speak more as an artist than as a historian. He will see and sense the elements constituting a work; conception, form, technique, and show the elements that have value in marking its character and constituting its beauty.

A. Middle Schools for Girls

First Year

Plastic drawing.—Essential principles of the perspective, practical, and intuitive exercises. Drawing from nature, sketches in black and colors of ordinary objects and simple geometric solids. Memory drawing. Decorative composition. The theory of colors, applications. Elementary ideas of the history of the plastic arts in connection with the program of history in the first year.

Second Year

Geometric drawing.—Very simple constructions with the right line and the circle. Analysis of geometric solids.

Plastic drawing.—Drawing from nature; memory drawing; decorative composition, the elements of fauna and flora, invention, conventionalizing, plane decoration, application of the principles of harmony of colors. Simple ideas of the history of art in connection with the program of history in the second year.

Third Year

Geometric drawing.—Principles and practical applications of accords in technical drawing. Geometric solids, regular pyramids, the right cylinder and the cylinder of revolution used clearly and to scale in working drawings; the use of India ink.

Plastic drawing.—A continuation of and more advanced than that of the second year. History of the plastic arts and principally of art in Belgium, in connection with history in the third year.

B. Middle Schools for Boys

First Year

Geometric drawing.—Simple constructions with the right line and circle; analysis of geometrical solids.

Plastic drawing.—The same as for the girls.

Second Year

Geometric drawing.—As in the third year for the girls.

Plastic drawing.—As in the second year for the girls.

Third Year

Geometric drawing.—Orthogonal projections: The point, the right line, plane, polygons, circle, the prisms in simple positions. All used clearly in working drawings.

Plastic drawing.—As for the girls.

MANUAL WORK AND DOMESTIC SCIENCE

Middle Schools for Girls

Methods.—The course for girls is to prepare them for the many duties of the housewife; sewing, knitting, mending, cleaning, cooking, etc. The primary school has taught the pupils different kind of handwork. The teacher should assure herself that the habits and processes acquired are good and that the attitudes have in them nothing of defection. The review exercises will vary according to the pupils; they should be such as will prepare for the work of the program. The tasks will offer opportunity to apply the motifs of ornamentation developed in drawing. From the first year the pupils will be taught the use of the sewing machine. Each should have a loose-leaf notebook and a colored envelope in which to care for the patterns cut. The course should help in the development of the æsthetic sense. The domestic-science teachers will work with the drawing teachers so that the latter may furnish the necessary indications for making embroidery, dress trimmings, etc., which will change with the fashions. In the domestic economy course, the teacher will emphasize its importance from the point of view of the well-being and even the happiness of the home, and the necessity for the girl to know it thoroughly. She will teach the girls methodical and persistent application. The practical exercises will be always done with the indispensable explanations. In time the pupils will be called upon to do things on their own responsibility.

Manual Work

First Year

Crocheting a child's garment; knitting a pair of slippers, mending; making a dress; the cross-stitch, quilting, chains, braid, the plume; embroidery in simple forms.

Second and Third Years

More advanced work along the same lines.

Domestic Economy

First Year

Theory.—Class talks on ventilation, choice of materials, choice and purchase of furnishings for the kitchen, diningroom, bedroom; heating and lighting, care and use of the different apparatus for each; care of linen; simple data on tea, coffee, and cocoa.

Practice.—Opening and closing doors and windows, handling class objects in silence, cleaning the house, cleaning the kitchen and its utensils, laying the table, serving, making beds, caring for the heat and lighting equipment, caring for linen and clothing. Preparing beverages.

Second Year

Theory.—Cleaning and repairing clothing. The clothing for a young woman, its maintenance and care.

Common ways of preserving eggs, butter, the legumes, and fruits. Simple ideas about milk and its derivatives, eggs, butter, fruit; composition, qualities, nutritive value, digestibility. Ways of serving and of associating them.

Practice.—Washing and repairing household linen and articles of clothing of graded difficulty. Culinary preparations of graded difficulty.

Third Year

Theory.—Importance of good cooking; qualities of the housewife. Simple ideas on the common foods. Ways of serving. Arranging menus. Ceremonial meals. Ideas of household accounting.

Practice.—Preparing different kinds of foods, calculating the price of each preparation, keeping an expense account.

Manual Work

Middle Schools for Boys

Methods.—Hand work in secondary education has a twofold objective. It is a means of developing manual aptitudes; but the fact should not be lost sight of that, well understood, hand work is a factor in intellectual education that no other can replace in the special function it fills. The course will include a coordinated series of projects each one of which will proceed as follows: Under the direction of the teacher the pupil will determine the total of the qualities and attributes that the thing to be made should have, its form, dimensions, materials, parts, and how they are united. The object must be expressed first in a working drawing which shows, if necessary, the

geometrical aspects; later it will be realized by methods suited to the material chosen. The work will bring in materials and tools of which the teacher must explain the uses and the conditions in which they may be used. He must be careful to teach correct attitudes and economy of effort in the use of the tools. Most of the pupils have done some manual work in the primary school; the teacher will find out what, and will eliminate from the program any that will be mere repetition without educational value. The class in manual work can include several groups of pupils differently occupied. A certain coordination between the course in manual work on the one hand, and those in drawing, geometry, and the physical and natural sciences on the other, should be arranged. The courses in sciences should often furnish the pupils ideas of things to be made.

First Year

Elementary technology: Paper, cardboard, tools; their qualities, uses, and care of tools. Paper work, construction of geometrical figures; bristol board, construction of geometrical solids; cardboard, arranging pictures on cardboard, making diagrams, etc. Modeling, qualities, preparation, and care of plastic earth. Exercises in modeling from natural objects.

Second Year

(A) In schools without shops. Continuation of the work in cardboard and in clay modeling from natural objects. Exercises in cutting, heating, bending, and handling glass and glass tubes in connection with the course in physics and chemistry.

(B) In schools with shops. Woodwork, the kinds of wood, tools, making small pieces of equipment to be used in the school laboratories, making different kinds of joints. Iron work, uses of the tools, making simple objects.

PHYSICAL EDUCATION

Gymnastics, Swimming, Games

Preliminary remarks.—The teachers should not neglect any occasion to teach the pupils, *always in the form of practical advice*, the rules of hygiene. Proper ventilation of the building should be assured at all seasons of the year. The teachers should always require of the pupils a bearing suited to the needs of their proper development. To avoid bad postures in class each pupil will be seated at a desk appropriate for his height and have a place chosen to suit his visual and auditive acuity. Observing these regulations has a fine influence on the bearing, health, and discipline of the pupils. The teacher in preparing his lessons will follow the typical program for gymnastics. He will take special account of the physiological phenomena of the prepuberty and puberty periods. He will even-

tually introduce into the program corrective, relieving, respiratory, and quieting exercises and will combine the lessons in such a way as to avoid loss of time, notably by using as much as possible simultaneous work. He will not omit frequently calling the attention of the pupils to the purpose of the exercises and the aim of the course.

First Year

Educational gymnastics. Games.—It is notorious that from the point of view of physical education, the first year is always lacking in homogeneity. That is why, in view of our present organization of instruction, in default of the physiological grouping of the pupils, it is useful in this class to make a systematic review of the program of the three primary degrees. During that repetition the teacher of physical education should particularly attempt to obtain from all the pupils a rigorously correct, precise execution of the attitudes, positions, and elementary exercises that are the basis of the later education.

Swimming.—Precautions to be taken before, during, and after the lesson. Preliminary exercises to familiarize the beginners with the water, entering the water, little games. Placing the head under water, breathing, opening the eyes. Lying on the back (with help), breathing. Lying on the back; movement of the limbs (with help), breathing. The same without help. Arm movements, swimming on the back, watching the breathing. Coordination of arm movements. In this class the teacher should have two groups—the beginners and the swimmers. The latter should never be left to themselves. The teacher will help to perfect their movements; he will finally appeal for their cooperation in mutual instruction.

Second Year

Educational gymnastics. Games.—Graded exercises in the different phases of educational gymnastics, and games suited to the psychophysical development of the pupils.

Swimming.—Review the program of the first year. Group exercises. Entering the water with a leap, with and without the spring. Diving.

Third Year

Educational gymnastics. Games.—The same as for the second year.

Swimming.—Program of the first and second years. Teaching the "back crawl" and the crawl, diving with a spring.

MUSIC

Methods.—The course in music in the secondary schools has a purely educational aim—through the exercise of the singing voice to train the ear in musical perception and to develop musical taste. The course should differ radically from those in the conservatories

and schools of music that prepare musicians and virtuosos. The theory of music plays a purely secondary part in the secondary school. Every lesson should include the singing of one or more songs already known, or the study of a new song; theory will be taught only so far as it is necessary to make the execution possible.

The teacher will combine for the three classes a repertoire of graded songs chosen for their æsthetic qualities in a popular song book or from the works of composers. On the basis of this knowledge, small but effective, brought to the pupils in the first year of studies, he will carefully search out the new ideas necessary in the execution of each selection; he will arrange the classes in the order of increasing difficulty; and the course will be graded so that passing from one selection to another requires the application of only a very small number of new difficulties. The tone and scale exercises and the musical dictation prepare or control the development of the ear and the voice more and more refined for good execution of songs more and more complicated.

First Year

Singing well-known songs, study of new songs selected for increasing difficulty. Review of the work in the third degree of the primary school. Graded musical principles preparing for the study of new songs. Exercises in intonation and rhythm. Dictation.

Second and Third Year

Singing common songs. Study of new songs of graded difficulty. Principles leading to preparation for new songs. Exercises in notation and rhythm. Dictation.

COURTESY

(Eight conferences a year for each class in the three years)

Instructions.—These conferences are held in the maternal language of the pupils at intervals as regular as possible, preferably by the head of the school, or failing that, by the teachers better qualified because of their age or their control over the classes. On the part of the pupils each conference includes a résumé which takes the place of a composition in the first language. The résumés are examined and graded like other lessons. Attendance at the conferences is obligatory. The programs are the same for the three classes, being more or less extended according to the age of the pupils and even according to the milieu and circumstances. The fundamental principles should be repeated each year.

Program.—Courtesy and personal dignity. Propriety, clothing, bearing, language. Courtesy in one's relation to others. The family, school, society, street, common means of transportation and trips in general. The salutation, presentations. Manners at table, visits, important affairs of life, rejoicings, and mournings. Correspondence. True and false politeness.

GREEK AND LATIN

On pages 58 to 62, Greek and Latin for the entire six years of secondary education, are outlined.

SECTION II. SECONDARY EDUCATION OF THE HIGHER DEGREE: THE THREE UPPER CLASSES OF THE ATHÉNÉES AND COLLEGES

Instruction in the secondary schools of Belgium has much similarity to a plan formerly used in some sections of the United States and known as the "spiral method." It consists in continuing a subject over a number of years and treating each phase of it two or more times but intensifying and broadening the student's knowledge of the different phases with each successive repetition. Short intensive courses are not favored. Election of curricula rather than of subjects and reliance on long-time courses rather than on brief, intensive ones are two of the fundamental differences between the work of the secondary school in Belgium and those in the United States.

Curricula.—The athénées and colleges offer four curricula or divisions, two each in the ancient and the modern humanities. In the three upper classes they are the continuations or extensions of the subjects given in those four divisions in the three lower classes of the athénée or the three years of the middle school.

The programs of study for the four divisions follow.

TABLE 8.—*Program of studies in the ancient humanities—Greek-Latin, and Latin-mathematics divisions*

[a, b, c, d, e. In the royal athénées where it can be arranged, the pupils may choose among the courses a, b, c, d, and e, so as not to have more than 34 or less than 33 hours a week. The choice between the third language and the fourth language on the one hand, and the complements of physics on the other hand, should always be possible. The choice is made at the beginning of the fourth class; at the request of the head of the family it may be changed at the beginning of the third class]

Subjects of instruction	Hours per week by class		
	Third class	Second class	Rhetoric
1	2	3	4
Religion and morals or morals.....	2	2	2
Latin.....	6	6	6
Greek ¹	4	4	4
First language.....	4	4	4
Second language.....	4	4	4
Third language.....	(2)a (2)*	(2)a (2)*	(2)a (2)*
Fourth language.....	(2)a (2)*	(2)b (2)*	(2)b (2)*
History and geography.....	3	3	3
Mathematics.....	3 7*	3 7*	3 7*
Physical and natural sciences.....	2	2	2
Complements of physics.....	(1)c 1*	(1)c 1*	(1)c 1*
Drawing.....	(2)d 2*	(2)d 2*	(2)d 2*
Physical education.....	2	2	2
Music.....	(1)e	(1)e	(1)e
Total including hours of supervised study.....	{ 33 or 34 33+(2)*	{ 33 or 34 33+(2)*	{ 33 or 34 33+(2)*

NOTE.—Figures marked with an (*) relate only to the Latin-mathematics division. Not more than 34 hours a week are allowed in the Greek-Latin division; not more than 35, in the Latin-mathematics.

¹ Greek is omitted entirely from the Latin-mathematics division.

TABLE 9.—Program of studies in the modern humanities—scientific, and commercial divisions

Subjects of instruction	Hours per week by class		
	Third class	Second class	First class
1	2	3	4
Religion and morals, or morals.....	2	2	2
First language.....	5	5	5
Second language.....	4	4	4
Third language.....	3	3	3
Fourth language ¹	(3) 3*	(3) 3*	(3) 3*
History and geography.....	3	3	3
Mathematics.....	7	7	7
Physical and natural sciences.....	2	2	2
Complements of physics.....	1 (1)*	1 (1)*	1 (1)*
Commercial sciences.....	5	5	5
Drawing.....	2 (2)*	2 (2)*	2 (2)*
Manual work.....			
Physical education.....			
Music.....	2	2	2
Stenography.....	(1)*	(1)*	(1)*
	(2)*	(2)*	(2)*
Total, including hours of supervised study.....	31+(3) 33*	31 (3) 33*	31 (3) 33*

¹The fourth language is elective in the scientific division.
 Note.—Figures marked with an (*) relate only to the commercial division.
 * In the commercial division the pupils may or may not elect either the course in the complements of physics or that in music; they must elect either drawing or stenography.

OUTLINES OF THE COURSES

A. Ancient Humanities Greek-Latin Division

RELIGION AND MORALS

Religion.—The course is arranged by the minister who gives it.
Morals.—In the lower classes the teaching should be wholly practical morals; in these upper classes questions of moral theory may be approached, as far as these questions are within the reach of the pupils. The program of the upper classes includes both ancient and modern readings. Teachers are advised to give both a place in the course in each class (year) in such a way that at graduation the pupils will have a good idea of how the ancient and the modern philosophies envisage great moral questions. Without abandoning the centers of interest (see p. 36) they should to a certain extent take account of the chronological order in studying the texts of moralists, without making the course a history of philosophy. More than in the other classes the teacher should decide very clearly, by himself or with his colleagues, the general plan of the course and choose for the reading and comments, texts appropriate to the degree of culture of the pupils. He will constantly appeal to their reflection, evoke memories, posit questions, and use for the most part the active method. He will frequently synthesize the ideas presented so as to assure logic and unity in the instruction. He will give to the teaching an objectivity and impartiality that will shelter it from all reproach. He



will refrain not only from discussing his own principles of morals, but will avoid offending the religious opinions of the pupils or developing ideas that may be considered as political propaganda. More than anywhere else, the teacher will here use tact, moderation, and tolerance.

Among the books recommended are:

*Third Class*⁴

Dugard—*La culture morale*; Thamin and Lapie—*Lectures morales*; Xenophon—*Mémorables de Socrate* (excerpts); La Bruyère—*Les Caractères* (excerpts); some biographies suited to the age of the pupils.

Second

Dugard, Thamin and Lapie, and La Bruyère as above, plus Cicero—*De l'Amitié*; and Seneca—*Œuvres morales* (selected pages).

First

Thamin—*Extraits des moralistes*; Plato—*Apologie, Criton, Phédon, République* (excerpts); Aristotle—*Morale à Nicomaque*; Epictitus—*Manuel*; Marcus Aurelius—*Pensées*; Cicero—*Les Devoirs*; Seneca—*Œuvres morales*; and Pascal—*Pensées*.

LANGUAGES

Methods.—Space does not permit reproducing in full the instructions, issued by the ministry, in methods of teaching the ancient languages, Latin and Greek.⁵ They are strong, forceful, and a keen defense of the educational value of careful study of both. The conception is that the principles of the grammar and the vocabularies needed are now fairly well established in detail. In the middle school years these are to be learned thoroughly; by constant repetition, the keeping of notebooks, having exercises in oral and written themes, and other helpful devices, and patient work every day, the matériel part of the languages is to be reduced to a state of automatism. For the three higher classes, the ministry says:

From the third class, when the young people are 15 or 16 years of age, purely linguistic questions without entirely disappearing should give place to moral, intellectual, and æsthetic considerations. This is the time when the mind needs most substantial nourishment; it is things themselves that interest it; it begins to judge thoughts, sentiments, style, the art of a writer, to sense the awakening of the taste for great ideas and for literary forms, strong and clear. These new aspirations must be satisfied. They are retarded when difficulties of morphology, syntax, and lexicon spoil for them the joy and the profit in the study of letters.

Still more. At this age pupils often take one or another definite direction. Doubtless the school ought not alone determine the personality of the young

⁴ Hereafter the word "class" will be omitted.

⁵ Ministère des sciences et des arts. Enseignement moyen du degré supérieur. Langues anciennes, instructions méthodologiques. Liège. Georges Thone. 1929.

people. But if at this critical age they can approach with some ease the reading of the great thinkers and the great writers—who seem to have written and thought for them—if a cultured teacher serves as a guide in that reading they will be armed with a refinement of critical sense and taste against the low and vulgar in art, literature, fancy, and action. In truth the literature which does not exercise that moral influence, which does not prepare for life, is merely vain learning, the pastime of the amateur, and for the youth of our classes a punishment sometimes dreadful. All this applies closely in these studies. If the preliminary training is not given in its time, the final and essential aim of the humanities is not attained.

LATIN

Sixth

Grammar and vocabulary.—Systematic study of the regular morphology and occasional study of the first elements of the syntax; study of the vocabulary based on the texts read in class, the words being ranked in grammatical order, then in the form of repetition in the etymological order. Oral and written themes of reproduction, conversation exercises on the text. Supervised study.

Translation and explanation.—Graded texts from Lhomond—*Epitome historiae sacrae, De viris illustribus, and l'Epitome historiae graecae* or a chrestomathy. Reading and expressive recitation. In all the classes the explanation will follow the expressive reading of the Latin text as a whole.

Fifth

Grammar and vocabulary.—Review of the regular morphology and systematic study of the irregular morphology; occasional study of syntax, especially in the agreements and the use of cases. In other respects as in class 6 above.

Translation.—Texts from Lhomond, Caesar—*De bello Gallico*, Phèdre—*Quelques fables*.

Fourth

Grammar and vocabulary.—Review of regular and irregular morphology; systematic study of syntax of agreements and the use of cases; occasional study of tenses and modes. In other respects as in class 5 above.

Prosody and versification.—Practical ideas in connection with translation; exercises in scansion.

Translation.—Caesar—*De bello Gallico*, preferably those chapters relating to Belgium. Ovid—*Métamorphoses*, selections by literary merit and from the point of view of Greek-Roman mythology. Exercises in expressive reading and recitation. Supervised and home study.

Third

Grammar and vocabulary.—Review of the syntax of cases; careful study of the rules of modes and tenses. In other respects as in the fourth.

Translation.—Livy—one book or preferably selections relating to the principal phases of Roman history. Virgil—*Bucoliques*, especially the first and fifth; *Géorgiques*, some episodes such as the eulogy on Italy, the springtime and rural life, pastoral life among the Scythians, etc. Cæsar—*De bello Gallico*, free translation. Supervised study and home work.

Second

Grammar and style.—Summary review of the rules of syntax; the essentials of style; oral and written themes; supervised study.

Prosody.—Ideas in connection with reading, scansion.

Translation.—Cicero—*Pro lege Manilia*, *Pro Archia*; *une Catalinaire*; Sallust—*Catalina*; Virgil—*Enéide*, passages chosen from Books I, II, and VI. Horace—*Odes*, preferably those that show Roman life, personality, art of poetry, and society. Livy—one book or selections. Exercises in expressive reading and recitation; supervised study.

Versions.—Supervised study and home work. From the beginning of the second class, the versions should be chosen to illustrate a brief survey of the history and literature, and taken from books and authors that can not, for lack of time, be read in class.

Rhetoric (First)

Grammar and style.—As in class 2, with a review of the grammar.

Translation.—Cicero—*Pro Milone*, *Pro Murena*; *Choix de lettres*; *Extraits des œuvres morales et philosophiques*; and free translations of *Pro Marcello*, *Pro Ligario*, *Pro rege Dejotaro* and *IV^e Verrine*. There should be time also for a review of Cæsar from the point of view of his personality and his times. Horace—*Art poétique*, from the point of view of the evolution of literary theories, *Epîtres* and *Satires choisies*, Virgil—*Enéide*, free translations from the readings named for class 2 and in addition, if possible, the episodes of Evandre et Pallas, Nissus et Euryale, Mezance et Lausus. Tacitus—*Agricola* or excerpts. Seneca—*Excerpts*. Exercises in expressive reading and recitation. Supervised study.

Versions.—As in the second.

GREEK

Fifth

Grammar.—Systemic study of the regular morphology up to and including the liquid verbs; occasional study of elementary rules of syntax.

Vocabulary.—Study of the vocabulary of the texts read in class, the words being arranged first in their grammatical order, then in the form of repetition, then in real or etymological order.

Exercises.—Oral and written reproduction themes. Supervised study.

Fourth

Grammar and vocabulary.—Review of regular morphology; systematic study of irregular declensions, some verbs in μ , some irregular verbs, and occasional study of the syntax. In other respects as in class 5 above.

Translation.—Xenophon—*Anabase*. In this class and the third the choice of reading should be preferably: (1) The principal parts of the story such as the causes of Cyrus' expedition, the composition of his troops, the mutiny of the Greeks, the battle of Cunaxa, the massacre of Clearque and his colleagues, the difficulties of the Grecian retreat; (2) passages telling of Cyrus and Xenophon; (3) the chapters that describe the Persian Empire. From these excerpts should be shown the patriotic and apologetic purpose of the author. *Versions.*—Supervised and home study.

Third

Grammar.—Review of regular and irregular morphology. Systematic study of the syntax of the article and the use of the cases; occasional study of tenses and modes. Otherwise as in the fourth.

Translation.—Xenophon—*Anabase*, in the first trimester, explained readings; in the second and third, free reading. Lucien—*Le Songe* or *Charon*. Herodotus—selections as varied as possible to show geography, customs, war, politics, historic truthfulness, and also form and style. These will be synthesized to show Herodotus as a historian and writer.

Second

Grammar.—Review of the difficulties of the morphology and the use of cases; systematic study of modes and tenses. Application in oral and written themes. Supervised study.

Prosody.—Elementary ideas; scanning.

Translation (in the second and rhetoric classes the teachers need not follow the list of works named).—Homer—*Iliade*, preferably passages that have a poetic or moral value, those that show the Homeric civilization and permit following the development of the action in its principal phases. An anthology of Greek poetry intended to give a knowledge of poets not named in the program, especially the lyric poets. Plutarch—*Vie de Démosthène* or *Vie de Cicéron*. Isocrates—*Panégryrique d' Athènes*. Herodotus—selections, or, Lucien—*Choix de dialogues*, free translation. Exercises in expressive reading and recitation.

Versions.—Supervised and home study.

Rhetoric

Grammar.—Review the principal difficulties, especially the particles, the attraction of the relative, the participle, the use of the infinitive with the article, hypothetic propositions and the use of *àv*. Applications in written and oral themes. Supervised study.

Translation.—Demosthenes—Choose from an Olinthian, a Phillipic, the *Discours sur la Paix*, or the *Harangue sur la Chersonèse*. Connect these with the course in history. Plato—*Criton*, *Ion*, *Apologie de Socrate*, *Phedon*, or selections. Sophocles or Euripides—tragedy. Homer—*Iliade* or *Odyssee*, free translation.

Versions.—As for the second.

French, the First Language

For the sixth, fifth, and fourth, see the corresponding years (first, second, and third) in the middle school, pages 37 to 39.

Third

From the beginning of the third the program in French for both Flemish and Walloon pupils includes the same rubrics in both parts of the country. The distinction lies essentially in the quality and difficulty of the authors used in each régime. The lists of writers are complete enough for the teachers to choose those appropriate for classes of different strength.

Phonics.—Review of previous years.

Grammar.—Occasional review of the chief difficulties.

Vocabulary.—Idiomatic forms; elementary and occasional notions of etymology and of derivations; good sentence structure. Supervised study.

Authors.—Analysis of texts chosen from the works of the better writers. Short accounts of the writers used. Manual—An anthology taking good account of the Belgian literary movement. *Texts*—Selections from Corneille, Racine, Molière; Boileau—*Art poétique*, ch. 1; *Epîtres*, *Satires*, *Lutrin*; Saint-Simon—*Mémoires*; Voltaire—*Histoire du siècle de Louis XIV* (excerpts), *Histoire de Charles XII* (excerpts); Montesquieu—*Lettres persanes* (excerpts); Lesage—excerpts; Chateaubriand—excerpts; Thierry—*Récits des temps mérovingiens*; excerpts from Hugo, Balzac, and Flaubert. Expressive reading and recitation exercises from texts studied thoroughly in class. Supervised study.

Literary theory.—Qualities of style, general principles of composition, special rules for description, portraiture, and narration, formulated from the explanation of texts. Prose and poetry, their common differences and similarities, rhythm, general ideas of versification. Keep unity in the exposé of literary theory.

Elocution.—Accounts of readings and the oral development of descriptive and narrative subjects chosen by the teacher or the pupil

under the direction of the teacher. Some literary analyses of short selections.

Composition.—Descriptions, portraits, narration, letters, proverbs, and maxims.

Second

Vocabulary and phraseology.—As in the third.

Authors.—Analysis of epic and lyric selections, some pages from the principal works of historians, romancers, art critics, and scientific writers. Readings from the works and excerpts chosen from the following list: One selection from Corneille, Racine, or Molière; Boileau—*Art poétique*, Ch. II, *Satires*; La Fontaine—*Fables*; Buffon—*Discours sur le style*; V. Hugo—choices from each of *Les Orientales*, *Les Feuilles d'Automne*, *Les chants du crépuscule*, *Voix intérieures*, *Les Rayons et les Ombres*, *Les Contemplations*, *La Légende des Siècles*, *La Préface de Cromwell*. Lamartine—*Les Méditations* (choice), *Les Nouvelles Méditations* (choice), the chief lyrical works of Vigny and Musset.

Literary theory and history.—Special characteristics of poetry. Study of epics and lyrics, study of literary history to the beginning of the eighteenth century. The essential facts of literary history should be taught so as to orient the pupils in the evolution of literature. Characterize briefly the great epochs not only by kind but chronologically and in large ensemble tables where the principal figures are shown.

Elocution.—See the third. Choose the selections to illustrate the history of literature.

Composition.—Poetic amplifications, literary analyses, short dissertations of a moral order, some letters. Permit the pupils to use poetry.

Rhetoric (First)

Vocabulary.—See the third.

Authors.—Analysis of some dramatic, oratorical, critical, moralist, and philosophical selections. Readings from the following list: Excerpts from Corneille, Racine, and Molière. V. Hugo—*Hernani*; chosen scenes from Vigny and Musset; E. Augier—*Le Gendre de M. Poirier*, *Les Effrontés*; Pailleron—*Le monde où l'on s'ennuie*; Rostand—*Cyrano de Bergerac*; Maeterlinck—*L'Oiseau bleu*; Bossuet—*Oraisons funèbres*, *Sermons*; Mirabeau—*Discours*; Lacordaire—*Conférences*; Montalembert—*Discours*; Fenelon—*Lettre sur les occupations de l'Académie*, *Dialogue sur l'éloquence*; Rousseau—*Lettres à d'Alembert sur les spectacles*. Pascal—*Pensées*; La Bruyère—*Les caractères*; excerpts from Rousseau, Voltaire, and Montesquieu.

Literary theory and history.—Theory of discourse and dissertation, study of drama and oratory. Survey of the literary history of the eighteenth century and to our day, especially of the evolution of

romance and critique of the nineteenth and twentieth centuries. The French literature of Belgium.

Elocution.—See the second. Talks by the pupils on various subjects, followed by discussions led by the teacher. Exercises in improvisation.

Composition.—Dissertations, discourse, literary analyses, letters, supervised and home-study.

French—The Second Language

For the first three classes, see the corresponding years in the middle school, page 39, for the last three, see the corresponding classes in French as the first language, pages 62 to 64.

Flemish—The First Language

For the first three classes, see the corresponding years in the middle school, pages 39 and 40.

Third

Phonics.—Review and exercises.

Grammar.—The language in general, written, spoken, its evolution, patois and dialects, language of the professions and of the crafts, language of culture, units of the language, place of the Dutch or Flemish language in the group of German idioms.

Vocabulary.—See for French, page 62.

Authors.—Analysis and reading of works or excerpts from the following list: Van Lennep—*Onze Voorouders*; Alberdingk Thijm—*De Organist van den Dom*; Geertruide van Oosten; De Oude Heer Smits—*Brieven en Uitboezemingen*; Virginie Loveling—*Het lot der Kinderen*; Augusta de Wit—*Orpheus in de Dessa, Verborgten bronnen*; Stijn Streuvels—*Choix de ses œuvres*; Maurits Sabbe—*De Filosoof van 't Sashuis*; Ledeganck—*De Drie Zustersteden*; Gezelle—*Kerkhofblommen*; Van Beers—*Begga, De Bestedeling*.

Literary theory.—(The teachers of French and those of Flemish as the first language should take care to have a desirable unity in the exposé of literary theory.) Qualities of style; general principles of composition; special rules for description, narration, and portraiture in the explanation of texts; prose and poetry; rhythm; general ideas of versification.

Elocution.—Accounts of readings and oral developments of descriptive and narrative subjects.

Composition.—Description, narration, portraiture, letters, proverbs, and maxims. Supervised study.

Second

Grammar.—The nature, rôle, and short historical view of the Flemish grammar; popular spirit and fantasy; proverbs and saws; names of persons and toponyms; borrowed words; characteristics of the Flemish language.

Vocabulary and phraseology, as in three.

Authors.—Analysis and explained reading of works or excerpts, largely epic and lyric, such as: *La chanson moyen-néerlandaise*; Vondel—*Œuvres Lyriques* (choice); Bilderdijk—*Œuvres lyriques* (choice); Potgieter—*Œuvres en vers et en prose* (choice); Alberdingk Thijm—*Vondelportretten*; Hildebrand—*Camera Obscura*; Vosmaer—*De Ilias*, excerpts; De Genestet—*Sint Niklaasavond*; De Mailbrief, *Fantasio*; Gezelle—(choice); Pol de Mont—*De Kinderen der Menschen*; Perk—*Mathilde-Cyclus*; J. van Looy; Prose (choice), *Het Stierengevecht*, *De Dood van mijn Poes*; L. Couperus—some one of his better pieces or his best descriptions; Van Langendonck—*Poesies* (choice); H. Teirlinck—*Zon*.

Theory and literary history.—See the instruction for the second class in French, page 63.

Elocution, as in the third.

Composition, as in the second class in French, page 63.

Rhetoric (First)

Grammar and vocabulary. Literary language; evolution of the sense of words; their effective value. Short history of the Flemish language.

Authors.—Analysis of dramatic, oratorical, critical, and moral or philosophic selections from the following list: Vondel—*Une tragédie*; Schimmel—*Struensee*; Multatuli—*Vorstenschool*, *Woutertje Pieterse* (1st part); Rodenbach—*Gudrun*; Hegenscheidt—*Starkadd*; Roland Holst van der Schalk—*Thomas More*; Verwey—*Olden Barneveld*, *Jacoba van Beieren*; Van Looy—*Jaapie*; Heyermans—*Op hoop van Zegen*; Verschaeve—*Judas*.

Justus van Effen—*Spectatoriale Geschriften*; Betje Wolff en Aagje Deken—*Sara Burgerhart*; Potgieter—*Jan, Jannetje en hun jongste Kind*, *Leven van Bakhuizen van den Brink*; Multatuli—*Max Havelaar*; Vosmaer—*Amazone*; Schaepman—*Menschen en Boeken*; Fr. Van Eeden—*De Kleine Johannes*.

Opzoomer—*De Grenzen der Kunst*; Geel—*Onderzoek en Fantazie*; Potgieter—*Rijksmuseum*; Beets—*Verscheidenheden, Verpoozingen op letterkundig gebied*; Berlage—*Over bouwkunst*; some excerpts from the works of Fruin, Allard Pierson, Busken Huet, Hugo de Vries, Vermeulen, Persyn, etc.

Theory and literary history.—As for the first in French, page 63.

Elocution, as in the second above.

Composition.—Dissertation, discourse, literary analyses, some letters, supervised and home study.

Flemish—The Second Language

For the first three years, see the corresponding years in the middle school, page 39.

Third

Grammar and spelling.—Review; further study of morphology and syntax; special cases of separable and inseparable verbs; the cases and rules of agreement. *Composition and derivatives.*

Vocabulary.—Systematic review. The country, its aspects. Proverbs and saws. Idioms. Families of words, synonyms.

Explained reading.—Analysis of narrative and descriptive excerpts from contemporary authors to show the main characteristics and the life of the Flemish-speaking people. Explained readings from works or excerpts in the following list:

Conscience—*De Loteling, Bavo en Lieveken, Een goed Hart, De twee Vrienden*; Hilda Ram—*Een klaverken uit's levens akker*; M. Sabbe—*Bietje, Een Mei van vroomheid, De filosoof van't Sashuis*; R. Vermandere—*Van Zon Zaliger*; A. Snieders—*Verhalen*; Tony Bergmann—*Ernest Staas*; Rosalie en Virginie Loveling—*Novellen*; Top Naeff—*School-idyllen*.

Elocution.—Ordinary conversation; accounts of reading done at home and oral résumés of subjects treated in class.

Composition.—Narrations, descriptions, ordinary letters, and easy subjects for study or vocabulary.

Second

Grammar and spelling.—Occasional reviews, themes, supervised study.

Vocabulary, as in the third, above.

Explained readings.—Analysis of more difficult excerpts. Short notices about the authors. The teacher will take care to show the large features of the development of the Dutch literature to the beginning of the eighteenth century. Readings from the following listed works: Beets—*Camera Obscura* (the more simple portions); Alberdingk Thijm—*De Organist van den Dom*; Ledeganck—*De drie Zustersteden*; A. Snieders (stories); Rosalie en Virginie Loveling—novels); Johanna van Woude—*Oud Hollandsch Binnenhuisje*.

Elocution.—As in the third above with the selections designed to illustrate the history of literature.

Composition.—As in the third, above.

Rhetoric (First)

Grammar and spelling as in the second.

Vocabulary.—As in the third and second. Explained reading. Analysis of selections from the principal poets and prose writers to illustrate the development of Dutch literature since the eighteenth century. Selections taken from the following lists: Beets—*Camera Obscura*; Van Lennep—*Onze Voorouders*; Cremer—*Novellen*; Van Maurik—*Novellen*; Van Nouhuys—*Eerloos, Het Goudvischje*; C. Buysse—*Stemmingen*; Stijn Streuvels—*Het Glorierijke Licht*; Fabricius—*Dolle Hans*; extracts from the works of literary critics as Max Rooses, A. Vermeulen, J. Persijn, etc.

Elocution.—As in the second, above.

Composition.—As in the second, above.

Flemish—The Third Language

Flemish is taught as the third language in the last year of the middle school and the three upper years of the athénée. It is expected that the work in the second class will be about the same as in the third class for Flemish as the second language, and that the final attainment in the rhetoric class will be equal to that in the second class for Flemish as the second language.

German—The Second Language

In the first three classes the program is the same as in the corresponding years of the middle school, page 39.

Third

Essentially the same as Flemish, the second language, in this class. The books listed for explained readings: Ferdinand Schmidt—*Die Nibelungen*; Christoph von Schmidt—*Das Täubchen*; Wilhelm H. von Riehl—*Die vierzehn Nothelfer*; Friedrich Gerstäcker—*John Wells, Die Stiefmutter*; Marie von Ebner-Eschenbach—*Schloß- und Dorfgeschichten*, Luise Koppen—*Die Kleine Schneiderin*; Peter Rosegger—*Die Waldjugend, Als ich mal ein Waldbauernbub war*.

Second

The same as Flemish, the second language. The books listed are: Chamisso—*Peter Schlemihls Wundersame Geschichte*; von Eichendorff—*Aus dem Leben eines Taugenichts*; Clara Viebig—*Der Käse, Der Jan und der Jup*; Peter Rosegger—*Das Holzknechtshaus, Das Felsenbildnis*; Julius Mosen—*Das Heimweh*; Storm—*Pole Poppenspäler*; Wildenbruch—*Neid, Kindertränen*; Keller—*Kleider machen Leute*.

Rhetoric (First)

The same as Flemish, the second language. The recommended readings are: Schiller—*Der Spaziergang*; *Das Lied von der Glocke*; *Geschichte des Abfalls der vereinigten Niederlande*. Goethe—*Hermann und Dorothea*, *Die italienische Reise*; W. Hauff—*Lichtenstein*; Eduard Mörike—*Mozart auf der Reise nach Prag*; Weber—*Dreizehnlinden*; von Scheffel—*Der Trompeter von Säckingen*; A. von Droste-Hülshoff—*Die Judenbuche*; O. Ludwig—*Zwischen Himmel und Erde*; W. Bonsels—*Die Biene Maja*.

German—The Third Language

See the statement for Flemish, the third language, page 39.

German—The Fourth Language

German, the fourth language may be taught in three upper classes of the athénée. The final attainment in the rhetoric class is expected to be about equal to that in the third class for German as the second language.

English—The Third Language

In English as the third language the work for the fourth class in the athénée corresponds to that for the second year of the middle school, see page 39; ~~that~~ for the third class of the athénée corresponds to the third year of the middle school, page 40.

Second

Phonics.—Review of the two previous years.

Grammar and spelling.—Review; morphology and syntax; rules for the use of the article; special cases of plurals; the degrees of comparison; use of the relatives; complete the conjugation of the verbs; use of auxiliaries; prepositions; the theory of the adverb. Composition and derivation of words; use of modes and tenses. Exercises in application of these; themes; some dictation. Supervised study.

Vocabulary.—On subjects taken from English city, country, industrial, and commercial life. Idioms, spoken exercises, supervised study.

Explained reading.—Texts in prose and verse; excerpts from the following list: Swift—*Gulliver's Travels*; Burnett—*Little Lord Fauntleroy*; Lamb—*Tales from Shakespeare*; Longfellow—*Evangeline*.

Elocution.—Language exercises with the study of the vocabulary and the explained readings: Accounts and oral résumés of the subjects treated in class.

Composition.—Reproduction of explained texts; ordinary letters; accounts of walks and excursions; supervised and free study.

Rhetoric (First)

Grammar.—Review, study from the grammatical point of view of texts. Oral and written applications of the grammar.

Vocabulary.—Review; study of Great Britain; idioms and families of words.

Explained reading.—Reading of more difficult excerpts; short sketches of the authors. Selections from the list below or that given for the first class in modern humanities. Dickens—*Christmas Carol*; Irving—*The Sketch-Book*; Kipling—*Stories from the Jungle*; Shakespeare—*Julius Cæsar, The Merchant of Venice*.

Elocution and composition.—As for the second above.

English—The Fourth Language

English as the fourth language is taught in the three upper classes of the athénée. The work corresponds to that of the fourth, third, and second classes of English as the third language, pages 68 and 69.

HISTORY

For the first three classes, see history in the middle schools, pages 40 and 41.

Third

Antiquity and the middle ages.—(The teacher should give the pupils some idea of the most interesting conceptions of the prehistoric period.) A study of the civilizations of antiquity and the Arabic and European civilizations of the middle ages. More detailed study of some of the most characteristic chapters of the history of antiquity and the middle ages as given in the first year of the middle school, page 41.

Second

More detailed study of the most characteristic phases of the periods of history outlined in the programs for the second and third years of the middle school, page 41.

Rhetoric (First)

More detailed study of the history of Belgium as outlined in the program for the third year of the middle school, page 41.

GEOGRAPHY

For the first three classes, see the corresponding years in the middle school, pages 41 and 42.

Third

Physical geography of the great natural divisions of Europe. Economic and political geography of the principal nations of Europe, especially the British Isles, and the nations bordering on Belgium.

Second

Physical geography of the world other than Europe. Economic and political geography of some nations chosen by reason of their importance in each of the great natural divisions.

Colonization.—The great factors of economic life of the world; transportation by land, water, and air; telegraph and telephone communication, radio.

Rhetoric (First)

Belgium, the physical geography of its natural regions, geologic ideas, aspect and nature of the soil, climate, and resources. Agriculture, fishing, industry, commerce, and roads of communication of Belgium. Its contacts with the principal countries of the world. Human geography of Belgium, ethnography.

Organization of the Belgian nation. The constitution, its essential articles. Public rights guaranteed by it. The legislative, executive, and judicial powers. Provincial and communal organization, religious organization, education, finances, the army, social legislation.

The physical, human, and economic geography of the Belgian Congo.

Review of ideas of cosmography taught in the third year of the middle school, page 42.

MATHEMATICS

Mathematics for the first three years is the same as for the corresponding years in the middle school, pages 42 to 46.

Third

Arithmetic.—Cube root of whole numbers and decimals; value of an ordinary fraction to $1/10^3$; periodic decimals.

Algebra.—Multiplication and division of polynomials; applications; factoring; rational fractions. Equalities and inequalities; equations of the first degree with one unknown; problems and their solution. Graphic representations with axes of orientation; coordinates, abscissas; the functions of simple equations; applications. Simple ideas of radicals with the index 2 and their applications in geometry.

Geometry.—Proportional lengths, segments, harmonic division. Similar plane figures; equivalent areas; relation of right triangle to any other triangle. Proportional segments of a circumference; fourth and mean proportional; division into mean and extreme ratio. Plane surveying.

Second

Algebra.—Review of whole and positive powers, the zero exponent; arithmetical radicals of any index; rationalizing fractions, fractional and negative exponents. Equations of the second degree with one unknown and the solution of some easy systems of them; the trinomial; algebraic solutions of some geometric problems of the second

degree. Progressions, logarithms, tables, compound interest, and annuities.

Geometry.—Inscribed polygons, calculating side and apothem in terms of the radius, areas. Circumference and diameter of a circle, its area and that of a sector and of a segment. Right lines and planes, their intersections, parallelisms and perpendiculars, dihedral angles, trihedrals.

Trigonometry.—The trigonometric functions and their relations. Solving right and other triangles in simple cases. Areas. Topographic applications.

Rhetoric (First)

Algebra.—Functions and limits; derivatives; application of the theory of derivatives to the variation of functions; construction of a representative curve and of the tangent to a point on that curve.

Geometry.—Polyhedrals and their volumes. Cylinders, cones and spheres, tangent and sectioning planes; areas and volumes. Applications.

Trigonometry.—Sines, cosines, and tangents; their addition, subtraction, and multiplication, the products of their sums and differences; logarithms, solution of triangles.

PHYSICAL AND NATURAL SCIENCES

The programs for the first three classes are the same as those in the corresponding years of the middle school, pages 46 to 48.

Third

Physics and complements of physics.—(One lesson weekly in each all the year; the latter does not begin until about the 1st of November.) Properties of matter; fundamental principles of mechanics; forces; work, machines; weight, falling bodies, balance, simple and compound pendulums; the C. G. S. system; hydrostatics; ærostatics; heat, its effects in solids and gases.

Chemistry.—(One lesson weekly in the first two trimesters.)

Review of the preceding year of work. The reducing and oxidizing functions. General ideas of the principal chemical functions; anhydrides, oxides, acids, bases, salts; affinity, table of valences; analytic and synthetic reactions; nomenclature and formulas; laws of combination, conservation, definite and multiple proportions, and of combinations of gases.

Biological sciences.—(One lesson weekly in the last trimester.) Analyses of animals and of plants made by the pupils under the teacher's direction, demonstrations by the teacher. *Botanical:* Orchid, asparagus, oats, spinach, nettle, beet, willow, hazel, dodder, broomrape. *Ethnology* of the organs of nutrition of some trees and herbaceous plants. *Zoological:* Slugs, snail, mussel; mollusks, cockchafer,

butterfly, fly, bee, mosquito, and some other common types belonging to the different groups of insects.

Second

Physics and complements of physics (one lesson weekly in each throughout the year).—Heat, calorimetry, changes due to heat, liquefaction of gases, hygrometry, gas and vapor density; density; transmission of heat; thermodynamics. Optics, reflection and refraction of light, some optical instruments. Acoustics, origin of sound, vibrations, phenomena of interference. Static electricity, the principal phenomena, theoretical and practical units.

Chemistry (one hour weekly in the first two trimesters).—The halogens, the sulphates, nitrates, phosphates, and carbonates. Nitrification, making sulphuric acid. Industrial synthesis of nitric acid. The metals and their principal compounds, the metallurgy of iron. The laws of combinations by two hypotheses: Of atoms; of Avogadro and of Ampere. Consequences of the hypotheses of Avogadro and Ampere. Molecule-gram, volume, finding the density of a gas. Laws of Berthollet. Thermo-chemistry, reactions.

Biological sciences.—(One lesson weekly in the third trimester.) As in the third class. *Botany*: Conifers, fern, shave-grass, moss, sphagnum, alga, mushroom, lichen. Ethology of the organs of propagation and reproduction. *Zoology*: Spider, Centipede, crayfish; arthropodes. Dew-worm, leech, tape-worm, trichina; kinds of worms. Starfish, sea-urchin, sweet-water hydra, coral, infusoria.

Rhetoric (First)

Physics and complements of physics.—(One lesson weekly for each for all the year.)

Dynamic electricity: The voltaic element, electrolytes, polarization; the thermo-electric element, laws of Ohm and Pouillet, heat and chemical effects, laws; theory of accumulators, theory of derived currents, application to a coupling of elements, Wheatstone's point.

Magnetism: Magnets, magnetic field, terrestrial magnetism.

Electro-magnetism: Magnets and currents, electro-magnets, induction and self-induction, high frequency currents, electric vibration, Hertzian waves, discharges in vacuums, cathode rays, X-rays. Applications: Galvanometer, telegraph, microphone, telephone, radio.

Chemistry.—(One lesson weekly for the first semester.) Continue the study of metals: Zinc, aluminum, iron, copper, lead, mercury. Analytical chemistry: Acidity and alkalinity; qualitative analysis, finding the metals contained in a saline solution.

Biological sciences.—(One lesson weekly for the second semester.)

Botany: Vegetable anatomy, types of cells, structure of the organs of a plant; vegetable physiology, nutrition of green plants and of plants without chlorophyll. *Zoology*: Animal physiology, the body sys-

tems, microbes, vaccines, and serums. General biology: Synthetic exposé of the great facts of evolution and of the circulation of matter and energy in the three natural kingdoms especially the rôle of hydrogen and oxygen, the cycle of carbon and of carbonic-acid gas, and the cycle of nitrogen and the nitrogen problem.

DRAWING

For the first three years, the program in drawing is the same as that for the middle schools, pages 49 to 51.

Third

Geometric drawing. Orthogonal projections: Point, line, plane, polygons, circle, and prisms in simple positions. Used in some drawings. Plastic drawing: Sketches of attitudes, style ornaments, faces; sketches from memory used in the drawing and science courses; decorative composition, exercises of documentation, stylization, and composition, analyses of fine models, application of art to some industries, talks on art, in correlation with the program of history in the third class.

Second

Geometric drawing. Continue orthogonal projections, planes of revolution, rotation, prismatic sections by planes perpendicular to one of the planes of projection, revolution of such sections, uses in some drawing, applications of the projections to technical drawing, freehand sketches. Plastic drawing. Drawing from nature, from the lens and microscope in the science courses, sketches of faces, style ornaments, decorative composition, talks on art, in correlation with the history course.

Rhetoric (First)

Geometric drawing. Applications to the course in geometry and to technical drawing. Plastic drawing. Drawing from nature, sketches of busts and of style ornaments, drawing from the lens and the microscope in the science courses; elementary notions of aesthetics. History of art: Painting, sculpture, and architecture in Belgium, their relation to plastic arts in other countries, the art of the Far East, modern art.

PHYSICAL EDUCATION

For the first three classes, see the corresponding years in the middle school, pages 53 to 55.

Third

Gymnastics, games. Graded exercises suited to the age and physical development of the pupils. Swimming: Learning "the crawl," picking up an object underwater, swimming under water.

Second

The same as in the third class, and with different forms of diving.

First

As in the second class with the addition of life-saving exercises.

MUSIC

Music in the first four classes is the same as in the three years of the middle school, pages 54 and 55.

Second and First

Repetition and better execution of well-known songs. Auditions from classical authors in connection with talks on the history of music, talks on the following subjects: Music in the Middle Ages; origins of the theater in Italy and France; harpsichord players and the Italian and French classics; Handel and Johann Sebastian Bach, the oratorio and the cantata; the classical period, the sonata form; a survey of musical instruments, the orchestra; Gluck's theater, Italian opera in the nineteenth century; Romanticism, the *lied*; Wagner, musical drama; the theater in France in the nineteenth century; César Franck and G. Lekeu; the school of César Franck and the movement in France after 1870, the impressionists; modern schools—Russian, Scandinavian, and German; the Belgian school; popular Flemish and Wallon singing; some contemporary Belgian musicians.

B. Latin-Mathematics Division

In religion and morals, Latin, French, Flemish, German, English, history, geography, and the physical and natural sciences, the programs are the same as those in the Greek-Latin Division. The Greek that is taught for 5 hours each in the fifth and fourth and 4 hours each in the third, second, and rhetoric of the Greek-Latin division is omitted entirely from the Latin-mathematics division. From 4 hours in the sixth and 3 hours each in the five succeeding classes of the Greek-Latin, mathematics is increased to 4 hours each in the first three classes and 7 hours each in the last three of the Latin-mathematics, and more emphasis is placed on drawing.

MATHEMATICS

Sixth

The program is the same as that for the first year of the middle school, page 44.

Fifth

The same as for the second year of the middle school, page 44, with the addition in geometry of the study of the rectangle, diamond, square, and trapezium; laws of the triangle; figures symmetrical to a point or to a line; applications.

Fourth

Arithmetic.—As in the third year of the middle school, page 45; plus “The least common multiple of two numbers is equal to the two numbers divided by the greatest common divisor”; problems in insurance, mutualities, taxes, obligations of societies; savings chests guaranteed by the nation; compound interest and annuities.

Algebra.—Review of multiplication of polynomials. Division of polynomials, factoring, greatest common divisor, and least common multiple; rational fractions; equalities and inequalities of the first degree with one unknown, solutions, systems of equations of the first degree with two or more unknowns, problems; calculating radicals with an index of 2 for some applications in geometry.

Geometry.—As in the third of the Greek-Latin division, page 70, plus a study of circles and omitting the surveying.

Third

Arithmetic.—Review and development of the theory of the multiplication and division of whole numbers; theories of the greatest common divisor and least common multiple; development of the theory of fractions, conditions in which an irreducible fraction can be converted exactly into a decimal number; the theory of square root and of cube root.

Algebra.—Various forms of division of a polynomial; calculating radicals with the index 2; the equivalence of equations and systems of equations; properties of simultaneous inequalities; axis of orientation and rectangular coordinates; functions of equations and their graphic representation; equations of the second degree with one unknown, properties of roots; trinomials, inequalities of the second degree with one unknown; variations of the trinomial; arithmetic and geometric progressions and their applications.

Geometry.—Review of the first three books, numerous applications, constructions, regular convex and star polygons; inscribed figures, side and apothem in terms of the radius, circumscribed polygons, areas; circles, calculating π , area of the circle, a segment, a sector; plane and line; intersections of planes, parallelisms, dihedral angles, orthogonal projections; surveying.

Trigonometry.—Measurement of arcs and angles, curvilinear abscissæ, the circular functions and their relations, solving right and other triangles, topographic applications; circular functions of some arcs; theory of orthogonal projections and their trigonometric solutions; the fundamental operations applied to arcs; transformation of the sums or the differences in products, logarithms; solving simple trigonometric equations, solving triangles with logarithms.

Second

Algebra.—Review; irrational numbers; Newton's binomial theorem; continued fractions; undetermined analysis, determinants; theorem of limits; continuity; exponential functions, inverse functions; derivatives; absolute maximum and minimum; complex numbers.

Arithmetic.—Unlimited decimal numbers, absolute and relative errors.

Geometry.—Review of the fifth book as studied in the third class; symmetry; polyhedral angles; polyhedrons; cylinder, cone, and sphere, their areas and volumes; harmonics and inharmonics.

Trigonometry.—Review, some remarkable formulas for the triangle, solving trigonometric equations or systems of equations, solving triangles, applications of the geometry of space.

Rhetoric (First)

Review.—Minute review of the successive extensions of the idea of number, extension to incommensurable magnitudes of the geometric theorems established for the commensurable magnitudes. Special insistence on the idea of the equivalence of equations and of systems of equations, on elimination, on the properties of inequalities and the theory of inequalities. By well-chosen applications, the beauty and the methods of transformation in geometry should be shown.

Analytical geometry.—Review of vectors, angles, projections, inharmonic and harmonic agreement. Coordinates, points, lines, elements to infinity, imaginary elements, series of lines, equations, circle, geometrical loci, intersections, curves, tangents, asymptotes, poles and polars, theory of the center, conics, coordinate polars, numerous applications of analytical geometry.

Spherical trigonometry.—Formulas of some triangles, their solutions, formulas of spheric excess.

Descriptive geometry.—Point, line and plane, distances of varying lengths, sections.

DRAWING

Decorative composition is omitted in the fourth and third classes, page 73, otherwise the program is the same as for the Greek-Latin division in those years.

Second

Geometric drawing.—Geometric curves, orthogonal projections, elementary ideas of free perspective, technical drawing, geometric tracing of shadows. *Plastic drawing.*—Drawing from nature, groups of geometric solids, sketches of faces, style ornaments. Talks on art in correlation with the history program.

Rhetoric

Geometric drawing.—Drawings for the descriptive geometry course, curves, cycloid, epicycloid, orthogonal projections, technical drawing, tinting, drafts and drawings of machines, shadows. Plastic drawing.—Drawing from nature, shade drawing, geometrical solids with fragments of architecture, style ornaments, busts. History of art as in the Greek-Latin rhetoric.

C. Modern Humanities—Scientific Division

Religion and morals, French, Flemish, German, the second language, history, geography, physical education and music are the same as in the Greek-Latin division. Mathematics, the physical and natural sciences, and drawing are the same as in the Latin-mathematics division.

German—The Third Language

German, the third language, is the same as German the second language, in the Greek-Latin division with the following shifts in classes: Fifth, see sixth, page 39; fourth, see fifth, page 39; third, see fourth, page 39; second, see third, page 67; first, see second, page 67.

German—The Fourth Language

This is the same as German, the second language, in the Greek-Latin division, with the following shifts in classes: Fourth, see sixth, page 39; third, see fifth, page 39; second, see fourth, page 39; first, see third, page 67.

English—The Third Language

This is the same as in the Greek-Latin division with the following class shifts: Fifth, see fourth, page 68; fourth, see third, page 68; third, see second, page 68; second, see first, page 69.

First

Grammar.—Review, themes, supervised study.

Vocabulary.—Development of the vocabulary, the country, its industry and commerce. Idioms, proverbs, and saws.

Explained reading.—Excerpts from the best poets and prose writers chosen according to the level of the class.

Elocution continued—Composition.—Ordinary letters, commercial letters, supervised and free study.

English—The Fourth Language

Begun in the fourth class by the outline for the second year of the middle school, page 39; third, see third year, page 40; second, see second, page 68; first, see first, page 69.

MANUAL WORK

Manual work is given in the sixth and fifth classes and is the same as in the first and second years of the middle school, pages 52 and 53.

D. Commercial Division

The programs in religion and morals, French, Flemish, German the second language, history, geography, physical and natural science, and complements of physics, drawing, physical education, and music are the same as in the Greek-Latin division. Manual work has the same program as in the scientific division. German, the third language, German, the fourth language, and English, the third language, are the same as in the scientific division.

English—The Fourth Language

English, the fourth language, begins in the fourth class with the same work as that for English, the third language, in the fifth and is followed out through the first in that succession of one class later.

MATHEMATICS

The first three years are the same as in the Latin-mathematics division, pages 74 and 75.

Third

Algebra.—Review. Solving equations of the second degree, roots, fractional and negative exponents; arithmetical and geometrical progressions, logarithms, long-term financial operations, interest, taxes, annuities, applications.

Geometry.—Review. Polygons and inscribed polygons, areas, the circle, surveying.

Trigonometry as in the second, Greek-Latin, page 71.

Second

Algebra.—Analysis, simple groupings, Newton's binomial theorem, some radicals, short theory of fractional and negative exponents; long-term financial operations, general problems, amortization; some ideas of graphic representation.

Geometry.—Plane and line, intersections, parallelisms, dihedral, trihedral, and polyhedral angles.

First

Algebra.—Loans by obligations, amortization, titles, loans by shares, public obligations. Algebraic operations.

Geometry.—Polyhedrals, surfaces and volumes. Cylindrical and conical surfaces and volumes. Spheres. Different formulas for volumes expressed in weights, measures of wood and lumber.

COMMERCIAL SCIENCES

The first instruction is the same as in the middle school, page 48.

Third

Commercial arithmetic.—Interest and discount, maturity, moneys and weights, exchange, freight, foreign commerce, consignments and sales, calculation of cost of projected operations and net proceeds of completed operations.

Commerce.—Theory, organization, documents, commercial associations. Practice in commercial accounting and correspondence.

Second

Commercial arithmetic.—Moneys, commerce in precious metals, exchange, public funds.

Commerce.—Practice in accounting for commercial societies, transportation and banking, publications, balance sheets, liquidation.

Law.—Civil law relating to contracts, sales, purchases, marriage, inheritance, etc. Commercial law, especially the Code of Commerce, Book I.

First

Commercial arithmetic.—The stock market, dealings in gold and silver, exchanges and public funds. Direct, inverse, and double premiums. Dealings in merchandise on time; liquidation chests.

Commerce.—Industrial accounting, special books, resale prices, rendering accounts, balance sheet, liquidation.

Commercial law.—The commercial code relative to failures, bankruptcies, and agreements to prevent failures. Legislation on trademarks, certificates.

Commercial geography of Belgium.—The characteristics and importance of water and land communication, ports, the main lines of navigation, merchant marine; Belgium's credit organization; commercial relations of Belgium with other countries; possible changes; the principal markets of the world with relation to Belgian markets.

Political economy.—Needs of man, wealth, production of wealth; labor, division of labor, salaries, workers' associations; land, its value, purchase, rent, agricultural associations; capital, its forms, its place in production, interest, profit, trusts and monopolies; direction of production, pay for direction; circulation of wealth, exchange, money, credit, credit organizations; necessities, luxuries, insurance, taxes; international economics, free trade, protection, commercial treaties; economic systems, individualism, intervention, and collectivism.

STENO-DACTYLOGRAPHY

In learning typewriting the pupils should use the universal keyboard. Teach the theory of stenography in the third without attempting speed. The teacher may choose the method but he should select one that can be applied easily to all the languages studied in the commercial division. If possible, stenotyping may be taught instead of stenography.

BIBLIOGRAPHY

- Bauwens, Léon. Code de l'enseignement moyen et de l'enseignement normal moyen. Bruxelles. Librairie Albert Dewit. 53, Rue Royale. 1929.
- Ministère des sciences et des arts. Règlement organique des écoles moyennes de l'État. Bruxelles. Imp. Moniteur belge. 1928.
- Règlement d'ordre intérieur des écoles moyennes de l'État. Liège. Georges Thone. 1929.
- Enseignement moyen du degré inférieur. Horaires et programmes des études dans les écoles moyennes pour garçons et pour jeunes filles. (Arrêté Ministériel du 15 avril 1929.) Liège. Georges Thone. 1929.
- Horaire et programme des études dans les sections commerciales annexées aux écoles moyennes de l'État pour garçons et pour jeunes filles. Arrêté Ministériel du 15 juillet 1929. Liège. Imprimerie G. Thone. 1929.
- Règlement organique des Athénées royaux. Bruxelles. Imp. Moniteur belge. 1928.
- Instructions générales adressées au personnel enseignant des écoles moyennes et des Athénées royaux. Liège. Imprimerie Georges Thone, Rue de la Commune, 13. 1929.
- Athénées royaux. Règlement d'ordre intérieur. (Arrêté ministériel du 15 avril 1929.) Liège. Georges Thone. 1929.
- Enseignement moyen du degré supérieur. Horaire et programme des études dans les Athénées royaux. (Arrêté Ministériel du 15 avril 1929.) Liège. Georges Thone. 1929.
- Enseignement moyen. L'Enseignement des langues en général et l'enseignement de la première langue. Liège. Georges Thone. 1929.
- Enseignement moyen du degré supérieur. Langues anciennes, instructions méthodologiques. Liège. Georges Thone. 1929.
- ✓ —— Instructions relatives à l'enseignement des mathématiques dans les Athénées royaux. Liège. Imprimerie Georges Thone. 1929.
- Instructions relatives à l'enseignement des sciences physiques et naturelles. Liège. Imprimerie Georges Thone. 1929.
- Enseignement moyen. Directions pour l'enseignement de l'histoire et de la géographie dans les Athénées et écoles moyennes de l'État. Liège. Georges Thone. 1929.
- Instructions relatives à l'enseignement de la musique. Liège. Imprimerie Georges Thone. 1929.

CHAPTER IV.—THE PROFESSIONAL STAFF

SECTION I.—TEACHER TRAINING

PRIMARY SCHOOL TEACHERS

Teachers for the primary schools are trained in the primary normal schools (*écoles normales primaires*). These institutions are separate for the sexes and either national (*écoles normales primaires de l'État*; or private and inspected and approved by national authority (*écoles normales agréées*). Of the former, 9 are for men and 7 for women; of the latter 22 are for men and 43 for women. In 1928-29, the 16 national schools enrolled 524 men and 642 women; the 65 private normals were attended by 2,580 men and 4,265 women. The former graduated 120 men and 182 women; the latter, 632 men and 981 women.

The course of study is five years or, not counting the preparatory, four years, named, respectively, from lowest to highest, preparatory, first, second, third, and fourth. Applicants for admission to the first year of a national normal must be Belgian citizens or have the right to become Belgians at the age of 18, must have reached the age of 15 by December 31 of the year of entry, of good character and good health, must agree to be at the disposition of the government as a teacher for three years following graduation, and pass an examination in the subjects of the preparatory class. Admission to the preparatory class is open to persons who meet the other requirements given above, are 14 years of age, and pass a qualifying entrance examination on primary school levels in the mother tongue, arithmetic, singing, drawing, gymnastics, the natural sciences, including hygiene, and geography. The last five of these are practical tests to disclose the candidate's physical and intellectual aptitudes for teaching.

The preparatory class is intended to fill out the training of pupils that have completed only the fourth degree of the primary school, and of any others that for some reason are not yet fitted to do the work of the first year. Years one, two, and three of the course are on the same general grade as the three upper classes of the Greek-Latin division of the *athénée*, the difference being that the ancient languages give way to psychology, pedagogy, and like subjects. The fourth year is more purely professional and trains the pupil-teachers to bring their knowledge to primary levels and give them practice teaching in the primary school annexed to the normal.

The regulations express the purpose of the normal training as follows:

The normal school has for its mission not only giving knowledge to future teachers but to initiate them into the work and methods by which they will know how to communicate it to the children.

It will pay particular attention to the moral formation of the future teachers. Its régime will assure the pupils a maximum of liberty compatible with the exigencies of a collective education: It will put them on their own responsibility, associate them in drawing up regulations for normalists, in maintaining order, in organizing the work, in excursions and festivals, in ornamenting the plant, in the functioning of things created within the school or in post school matters, etc. A régime of discipline founded both on the liberty and the responsibility of the pupil and which accustoms him to the practice of dignity and solidarity, will do more for the moral soundness of the school than the strictest rules and the most rigorous course in morals.

The normal school will always number among its duties that of forming good citizens, men filled with respect for the institutions that assure the prosperity and security of the country, educators attached to the fatherland. It will, in addition, see that its pupils are responsive to the great currents of ideas that traverse humanity and to those sentiments which, beyond political, social, and religious frontiers, bring together all men of good will.

The program of studies is as follows:

TABLE 1.—Program of studies in the primary normal school

Subjects of instruction	Hours per week				
	Preparatory year	First year	Second year	Third year	Fourth year
1	2	3	4	5	6
Religion and morals, or morals.....	2	2	2	2	2
Pedagogy, theory.....			2	2	2
History of pedagogy.....					1
Model lessons.....				1	1
Didactic lessons.....				1	1
Practical lessons.....					3
Help in some lessons.....				1½	
Teaching practice.....					1
Mother tongue.....	6	5	5	4	3
Second language.....	4	4	4	3	3
Penmanship.....	4½	4½	4½		
Mathematics.....	4	5*	3	3	2
Commerce.....			1		1½
Physical and natural sciences.....					1
Agriculture or biology.....	2	3	2	3	1
Hygiene.....					1
Domestic economy.....	1*	1*	1*	2*	2*
Geography.....	1	1	1	2	2
History.....	1	2	1	1	2
Manual work.....	2	2	2	1½	2
Drawing.....	2	2	2	1½	1
Gymnastics.....	2				
Games and sports ¹	2	3	3	3	2
Music.....	2	2	1	1	1
Choral singing ²		1	1	1	1
Supervised study.....		1	2	3	1½
Total.....	30½ 31½	33½ 33½	32½ 33½	33½ 34½	34 35½

NOTE.—The figures marked with the (*) indicate the modifications made for girls.

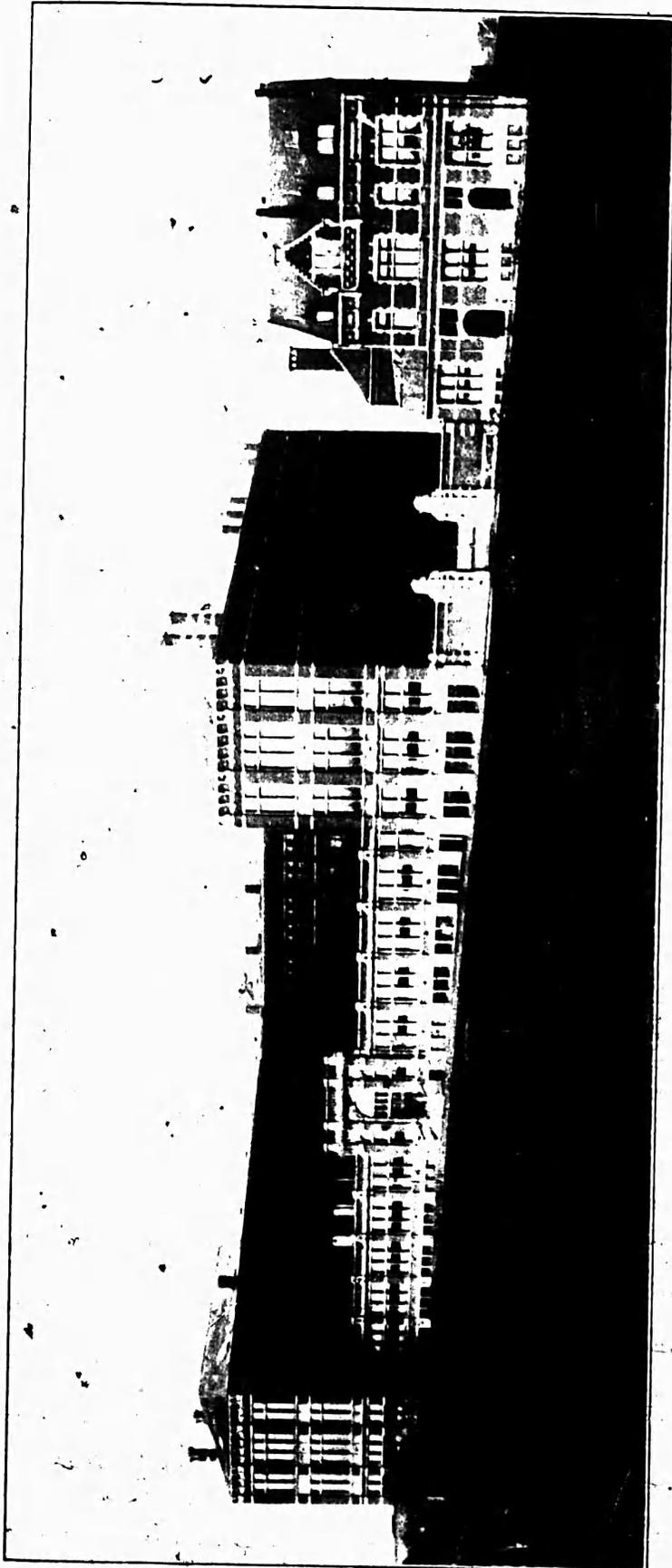
¹ 1 hour, instead of one-half, in the second semester.

² This half-hour in commerce is given only to the boys.

³ 2 classes may be combined for games and sports.

⁴ For choral singing, combine the first year with second, and the third with fourth.

⁵ One 2-hour meeting a month in geography.



NATIONAL NORMAL SCHOOL FOR BOYS, AT VERRIERS



PRIMARY SCHOOLBOYS IN CHINESE COSTUMES FOR A SCHOOL FESTIVAL.

▼ 82-2

OUTLINES OF THE COURSES

The subject matter taught in the different courses of the curriculum of the primary normal schools is so nearly like that in the three higher years of the athénée that except for the courses in pedagogy, it need not be outlined here.

In these two subjects the plan is to lay down in the pupil-teacher's mind the bases for a thorough knowledge of the child and to do it in such a way that he will be stimulated to increase and refine that knowledge by constant, planned observation of children. He is shown the dependence of the practice of education on psychology, is trained in methods of experimentation so that he will have the objective attitude required for such work, and is habituated to professional reading.

A. Elements of Psychology and Pedagogy

Second Year (two hours a week in the first semester, one hour in the second)

Preliminary ideas.—The psychological fact (exterior world, interior world, psychic consciousness). Methods of investigation—by watching behaviour; by introspection. The anatomic basis of mental life; neurone, cerebrospinal system, the autonomous system. Neuro-terminal course and mechanism; stimulation, adjustment, response. Sensorial, central, and motor channels. Reaction time.

States of consciousness.—Sensations, their intensity, laws, and measurements. Perceptions of surface, depth, objects, time. Rôle and importance of the kinesthetic sense. Attention. Fixation of images, memory, its measure. Imagination, image, and thought. Judgment, abstraction, and generalization. Alterations in ideation, errors in testimony, illusions.

Third Year (one hour weekly)

States of consciousness.—Affective states, emotions, sentiments, passions, and their influence on activity. Expressive states, reflexes, instincts, imitation, hand of preference, tendency to æsthetic expression. Habits, their acquisition and significance, habits in education. Will, voluntary activity, ideo-motor action, effort. Voluntary control of the affective activity, reflex, and instinct. Psychological bases for responsibility. Language and thought; speech, gestures, graphic mark. Drawing as a means of expression for the child.

Succession of states of consciousness.—Flow of perceptions and of thought, association and its laws. Reasoning, three elements of logic. Subconsciousness, suggestion, and the problem of suggestibility.

Attitudes.—Interest, evolution of interests in the child, desire. Attention, its fluctuations, measures of attention, rapport of attention with interest and desire. Attention and observation. Character, ego, and personality. Heredity as a factor in personality, the milieu and education.

Fourth Year

Interdependence of psychic functions.—Intelligence and its aspects, by the Binet classification. Individual and group tests, psychographic examination, practical exercises in class and in the practice school. Selecting the supernormal (*mieux-doués*), professional orientation.

Education.—Aim, possibility, effectiveness, experimental pedagogy. Physical education—phenomena of growth, medico-pedagogic measurements and records, the school and child health, school physician, school infirmary. Intellectual education—imposed and spontaneous activity, auto-education and individual instruction, active methods, method of centers of interest and associated ideas. Other recent processes: Dewey's project method, Dalton plan, Winnetka plan. Use of books and didactic material, problems of fatigue and overload, the lazy child. Moral education—school discipline, systems, social rôle of the school. Aesthetic education, coeducation. The educator—his duties, rights, and personality, the teacher in the school, at home and in society, his training.

Organization of instruction.—Pedagogic organization of Belgian instruction in its different degrees.

Abnormal children, protection of infancy, and laws governing the primary school.

B. Elements of Method

Each normal school has a primary school annexed to it or makes arrangements for the pupil teachers to do practice teaching in the primary schools of the commune. Here the pupils put into practice the principles they have learned of the art of education. One model lesson a week is given before the third and fourth year students; their attention is called to the methods used and the processes applied. Third year students for an hour a week help give lessons in the practice school. Once a week the students of the third and fourth attend a didactic lesson in which a fourth year student teaches a primary class; the teaching is later discussed and criticized by the entire group. Teaching practice to the extent of at least six half-hours weekly must be done by each fourth-year student and must include all the subjects of the primary school.

Second Year (one hour a week in the second semester)

General methodology.—Importance of method, fundamental principles, general processes. Forms of instruction: Expositive, interrogative. Intuition and didactic material, excursions, pupil activity. Individual, collective, direct, and occasional instruction. Principle of concentricity. Concentration and centers of interest. The lesson and its applications, its correction. Reviews. Compositions.

Third Year

Special methods. (One hour a week.) On the Government's typical program as a basis, give a theoretical and practical exposé of method in the different branches of the primary school. Model and didactic lessons.

Fourth Year

General organization of primary education.—Lessons, plan books, class journal. Program and time table. School buildings, books and furniture, equipment, registers, archives and libraries. School inspection.

Practice teaching.—Under the direction of the professor of pedagogy. Manual work, sand table, educational games. Model and didactic lessons. Excursions with pupils from the practice school.

C. History of Pedagogy

Fourth Year

This work requires much research on the part of the pupils. It includes a general survey of systems and doctrines of education, and reading and analysis of one good work on the pedagogical science of to-day.

GRADUATION

The credential granted by the ministry for the completion of the course in a primary normal school is the diploma of primary teacher (diplôme d'instituteur (institutrice) primaire). At the close of each year of the course the student must submit to an examination on the work of that year. The graduation examination (examen de sortie) is before a jury composed of the director of the school, the teacher of religion, and other members of the staff presided over by one of the ministry's inspectors or some one delegated by it.

By the regulations of the ministry, issued April 1, 1930, the examination will be in two parts separated by an interval of at least a year and covering the entire 4-year course. The first part, or examination, will consist of written tests lasting four days; practical tests of three days in botany, manual work, drawing, gymnastics, and singing; and oral tests of two hours in morals, the mother tongue, and arithmetic. The maximum number of credits obtainable in the first examination is 595, and of these, 100 are allotted to the mother tongue, 90 to mathematics, 70 to morals, 60 to the second language, and 50 each to history and science.

The second examination is more distinctly professional; the practical tests of three days include writing on the blackboard, demonstrations in the physical and natural sciences, manual work, drawing,

gymnastics, and music, and are designed to show the student's skill, poise, and preparation for teaching. The didactic test of one and one-half hours for each candidate consists of two lessons taught in the presence of the jury and followed by some exercises in the use of instruments for measuring the height, weight, visual acuity, etc., of children. The written tests of two days are on pedagogy, the languages, the sciences, and for the girls domestic economy. The 2-hour oral test applies to pedagogy and methodology and the languages. The maximum number of credits earnable is 450 for boys and 485 for girls. Of these, 155 are allotted to pedagogy and psychology, 70 to the mother tongue, 50 to the second language and 30 to the sciences; the other subjects are given smaller amounts except for the 40 credits in manual work and geometrical forms for boys and 35 for domestic science for the girls.

The candidate succeeds or fails by majority vote of the jury. For percentages of 90, 85, 75, and 65 of the total number of points the citations are, respectively: With greatest distinction, great distinction, distinction, and satisfactory.

KINDERGARTEN TEACHERS

Attached to the national primary normal schools are four kindergarten normal sections (sections normales gardiennes de l'État); the Provinces, communes, and private initiative provide 30 more that are approved by the ministry (sections normales gardiennes agréées). They admit students under 22 years of age, that have graduated from the fourth degree of the primary school, or the middle school or have passed an examination on the primary school subjects. The curriculum is three years of study essentially practical and well weighted with pedagogical subjects, the mother tongue, and phonics, music, gymnastics, drawing, manual work, and hygiene. The last year must include theoretical and practical work in infant hygiene given under the direction of a physician. Each year closes with an examination before a jury; success in the one for the second year is attested by a certificate which admits the holder to the final or diploma test that must come at least a year later and after the applicant has served a probation of six months in a school for the infirm.

The curriculum is as follows:

TABLE 2.—*Program of study in the kindergarten normal sections*

[Hours per week]

Subjects of instruction	First year	Second year	Third year
1	2	3	4
Religion and morals or morals and civics.....	1	1	1
Courtesy ¹	1½	1½	1½
Mother tongue and phonics.....	4	4	4
Arithmetic and oral calculation.....	1	1	1
Exercises in natural sciences.....	3	2	2
Pedagogy, methods, theory, practice, and help in school exercises ²	6	8	12
History and historic readings.....	1	1	1
Geography.....	1	1	1
Hygiene and child care.....		1	2
Visits to places that care for infants, practical work.....			2
Music ³			2
Gymnastics.....	3	3	3
Drawing.....	3	3	2
Domestic economy and gardening.....	3	3	3
Manual and needle work.....	1	1	2
	3	3	2
	30½	32½	33½
Second language (elective).....	3	3	3

¹ 1 hour every 2 weeks, finally the 3 classes united.

² Some principles of personal hygiene are given by the teacher of natural sciences.

³ 3 hours of the time each year is devoted to theory.

⁴ For the first semester only, at the rate of half a day each week.

⁵ The pupils must have 1½ hours daily on the piano or violin either in the school or at home.

⁶ In the second semester at the rate of 4 hours weekly (1 afternoon).

Programs of the courses.—To outline in full the programs of all the courses that make up this curriculum is unnecessary, but those of the one in hygiene, as changed and strengthened in March of 1928, are strong enough to merit reproducing in some detail.

HYGIENE

Pedagogic directions.—The aim of the course is not to give teachers wise rules of hygiene but to help them form good health habits. Only the kindergartner who can impose on herself a rational hygiene can get it from her little pupils. She should be trained not only in general but also in infant hygiene.

The kindergartner's work brings her constantly in touch with the mothers, makes her their advisor. She should know how to avert lurking infant illnesses; she should back up her information with clear advice. She will give first aid to children suddenly ill or hurt at the school. Finally, she will enforce in the school or crèche where she is employed a régime of good health.

The physician who gives this course must forget the methods he has used in the university and place himself on a level with his young-pupil teachers. His instruction must be always concrete and practical; he will lay aside all the scientific speculations that the pupils do not understand in order to fortify them on a solid terrain of facts.

The professor of natural sciences will explain the methodology of lessons in hygiene for the kindergarten, taking as a basis the rules for health games and the methods that have been recognized by the section of infant hygiene of the committee for the relief of Belgium educational foundation. At the practice school the teacher will adopt these methods. She will determine regularly the weight and height of the pupils and, with the advice of the physician-inspector, will advise the parents of any abnormalities shown by the figures.

The physician will initiate the pupils into the medical inspection of a school. He will follow step by step the organic regulations of the service of school medical inspection. He will teach the pupils the rôle they must play later with the physician-inspector and the parents, will show them how they should use, in the interest of the children's health, the data furnished by the school medical inspection. He will use for an inspection the regular amount of time, for he ought not to forget that the better is often the enemy of the good.

Second Year

Very elementary study of the theory of germs. The body: Hygiene of the skin, hair, teeth, nails, and sense organs. Hygiene of clothing. Hygiene of food: Water and its purification; the essential rules of good nutrition; the vitamins; alcoholism and its ravages. Hygiene of respiration. Hygiene of the dwelling place. The contagious maladies, especially of infants—causes, transmission, prevention, disinfection for epidemics, tuberculosis. Diseases transmissible from animals to man—rabies, glanders, anthrax, trichinosis. Vocational diseases—of the skin, eyes, ears, and respiratory, circulatory, and digestive systems. First aids for indigestion, colic, bleeding, fainting, epilepsy, congestion, and asphyxiation.

Third Year

Theory.—Statistics of infant mortality in Belgium and the neighboring countries; their interpretation. Purpose and importance of child care. Elementary ideas of eugenics. Prenatal hygiene. Anatomy and physiology of the newborn: Care of the eyes, mouth, nose, ears, body, and head; lotions; baths.

Nutrition: General ideas; natural and artificial feeding of the infant; preparation of foods, average ration, dangers of poor foods and ways of avoiding them; increases in weight, measurements.

Clothing: The principal garments for the infant and how to make and care for them.

Room temperature, lighting, moisture, ventilation. Cradle: Its place in the room, choice and care of bedding, position of the child in the cradle, danger of artificial ways of producing sleep, precautions to be taken during sleep.

Moving the child, about: Manner of carrying, use of carriages, precautions.

Toys: Uses, qualities, choice for age and season, the rattle in particular.

Dentition: Approximate time and order of appearance of the teeth, accidents in dentition, precautions.

Walking: First steps, discussion of ways for helping the child in its first attempts.

Vaccination: Purpose, age, time, action on the child, subsequent care.

Special care of the infant during the summer.

Principal illnesses of the infant: Fevers, affections of the digestive organs, of the respiratory organs. Convulsions. Thrush. Contagious diseases: Symptoms, care pending the arrival of a physician. Use of the thermometer. Some errors in child hygiene.

Practical exercises.—Each pupil teacher will have practice work in the institutions of the Office of Infancy in the proportion of at least 50 hours a year. The administrations of the kindergarten normal schools will see that this is done in connection with the institutions in the locality or agglomeration, and that the pupil teachers cooperate effectively. The teacher of pedagogy and methodology will organize the practice work and have charge of the records. It may be at the rate of a regular number of hours weekly or irregularly according to the possibilities of the locality.

School hygiene applicable to kindergartens.—School site, natural lighting, orientation. Classrooms, cloakrooms, yard, playrooms, garden, lavatories. Sand heaps. Lighting, heating, and ventilation of the school. Furniture. So-called school maladies: Myopia, scoliosis, infections, adenoids.

Intellectual work.—Its direction, duration, intensity; fatigue, overwork, ways of avoiding fatigue in kindergartens.

Medical inspection regulations.—A study of the regulations and practice in putting them into effect.

Use of first-aid kits.

Graduation.—The final examination held before a jury carries a possible total of 700 points. The distribution is—pedagogy and methodology, 120; mother tongue, 100; hygiene, 100; music, 70;

drawing, 60; conduct, order, courtesy, and application, 60; religion or morals, 50; and gymnastics, 40. The remaining 100 points are for manual work, domestic economy, and penmanship.

The credential is the diploma of teacher in a kindergarten (*diplôme d'institutrice d'école gardienne*).

SECONDARY SCHOOL TEACHERS

The law of June 1, 1850, on which secondary education is based provided that:

ART. 38. The Government is authorized to maintain and to use for it the resources of the National universities if necessary, a pedagogic normal instruction intended to form professors for the athénées, colleges, and middle schools. It may set up an internat for the pupils of the normal courses.

To this the law of June 15, 1881, made two additions:

ART. 15. There is instituted a pedagogic normal instruction intended to form regents for the middle schools for girls. Scholarships are created for the pupils taking that instruction. Examinations and competitions will be held for admission to these normal courses.

ART. 16. The number and the importance of the scholarships to be conferred in favor of normal instruction intended to form professors and regents is fixed annually in the budget law. These scholarships will be conferred by royal arrêté. Examinations and competitions will be held for admission to the normal courses.

Here were the legal foundations for training men teachers for both the lower and upper degrees of secondary education and women teachers for the lower degree. In 1890, article 38 was so changed as to omit the reference to the universities and the words "athénées and colleges" were dropped out. That took the training of teachers for the upper degree of secondary education away from the middle normal schools and placed it in the faculties of philosophy and letters and of sciences in the universities. The middle normal schools (*écoles normales moyennes*) became institutions to train teachers for secondary education of the lower degree, the middle schools, only. That is their present status. There are two normal sections for men, one each at Nivelles and Ghent, and five for women, one each at Liege, Bruges, and Tournai, and two at Brussels. In 1928-29 the sections for men enrolled 79 students; those for women, 191.

MIDDLE SCHOOL TEACHERS

Middle normal school instruction is two years in duration. It includes three sections or curricula—literary, Germanic language, and scientific—any one of which the student may elect. The programs of study are as follows:

TABLE 3.—Programs of study for middle normal instruction
[Hours per week]

Subjects of instruction	Literary section		Germanic language section		Scientific section	
	First year	Second year	First year	Second year	First year	Second year
	2	3	4	5	6	7
Religion or morals.....	2	2	2	2		
Pedagogy and methodology.....	4	4	4	4	2	2
First language French or Flemish.....	6	6	6	6	4	4
Second language, Flemish or French.....	4	4	2	2	3	3
Third language, German or English.....	(2)	(2)	5	5	2	2
Fourth language.....			5	5		
Latin.....	2	2	2	2		
History.....	3	3				
Geography.....	3	3				
Mathematics.....						
Science.....					5* or 6	5* or 6
Science laboratory.....					4	4
Commerce.....					4	4
Hygiene.....					2	3
Drawing.....	1		1		1	
Manual work.....	1	2	1	2	1	2
Needle work.....	1	1	(1)	(1)	1	
Physical education.....	1*	1*	(1)*	(1)*	1*	1*
Singing.....	2	2	2	2	2	2
Didactic exercises.....	1	1	1	1	(1)	(1)
	3	3	3	3	2	2

NOTE.—The figures in parentheses indicate elective courses.
Figures marked with an (*) are modifications for girls.

‡ Flemish. † French or Flemish. † French. † Flemish or French. † English. † German.

The reader who refers now to the graph on page 8 will note that the duration of studies is apparently three years and that graduates of the athénée or the primary normal schools may enter the second of these years. The first of the three years shown on the graph is a preparatory year and is so named; the following two are normal instruction proper and it is to the first year of this that students may come from the athénée and the primary normal school without taking the preparatory year.

Reference again to the outlines of the courses for the middle school indicate the kind of work for which these teachers must be prepared. The middle school staff must have in its personnel teachers that know Greek and Latin, French, Flemish, and one other modern language and be prepared to lead the pupils through the hard work of a thorough mastery of the grammar and vocabulary of those tongues. Mathematics must be taught to a good knowledge of arithmetic, ordinary algebra, and the main principles of plane geometry. The natural sciences are carried to an acquirement of the fundamentals of botany, zoology, physics, chemistry, and plant and animal physiology. The history covers in a broad way the entire field from the early oriental civilizations to post World War time. In all these the foundation must be laid for the more advanced and intensive training

that comes in the three higher years of secondary education. Include the lighter subjects of drawing, music, physical education, courtesy, and manual work, and it is evident that the middle school teacher in Belgium, properly named a professeur—if a man—or a régente—if a woman—has a challenging task, one for which no weak line of preparation can possibly be sufficient.

It is well to repeat now that the preparation will include the training given in either the athénée or the primary normal which is on the level of the athénée plus a professional year, and that students who seem not yet qualified for the middle normal are given a preparatory year. The first two of these have already been described in detail. The examination for admission to the preparatory year is designed to give the applicants opportunity to convince the jury that they are strong enough, after a supplemental year to do the work of the middle normal. It covers the main subjects of secondary education. On the first day of the written tests, there is a 4-hour paper on the first language, a 1½-hour paper in drawing. The second day calls for three hours on the second language, and four in mathematics. Two-hour papers in either the third or fourth language are elective for the third day. The oral tests in these subjects take about 20 minutes each. Applicants are listed according to their ratings; the highest are admitted as vacancies occur. They must meet the usual requirements as to citizenship, good health, and morals, and be at least 17 years of age by December 31 of the year of taking the examination. Holders of the diploma of primary teacher (diplôme d'instituteur primaire), the certificate of completed middle studies (certificat d'études moyennes complètes), or who have passed the preparatory test for the academic degrees are exempt from the entrance examination to the preparatory section.

The program of studies is arranged for two groups; A, of pupils that intend later to elect the literary or scientific section, and B, those that will follow the Germanic language section. It is as follows:

TABLE 4.—*Program of studies for the preparatory year of the middle normal school*

Subjects of instruction	Hours per week	
	Group A	Group B
1	2	3
Religion or morals.....	2	2
First language.....	6	6
Second language.....	5	5
Third language.....	(3)	3
Fourth language.....		3
History of Belgium and the Belgian colonization in the Congo.....	2	2
Geography of Belgium and the Congo.....	1	1
Mathematics.....	6	3
Sciences.....	4	2
Drawing.....	2	2
Manual or needle work.....	1	1
Physical education.....	2	2
Singing.....	1	1
Beginnings of psychology.....	1½	1½
	32½ (3)	33½

1 2 hours every 15 days.

2 1 hour every 15 days.

The examination for admission to the first year of the middle normal is open to candidates at least 18 years of age on December 31 of that year who meet the other requirements already noted for normal school pupils. It differs somewhat for groups A and B and covers rather thoroughly the curricula of the preparatory year. Conducted in essentially the same way as the examination for admission to the preparatory, it is, however, longer and more exacting.

At the close of the first year the pupil teachers are subjected to a rigid examination of written, oral, and practical tests to determine their proficiency in the subjects studied. The tests vary of course to suit the three different sections; Literary, Germanic languages, and scientific. To the successful student is granted the diploma of aspirant professor agrégé (diplôme d'aspirant-professeur agrégé) if a man, and of aspirant-regent (diplôme d'aspirante-régente) if a woman. A similar and more stringent examination closes the second year of studies. The awards for success then are respectively the diploma of professor agrégé (diplôme de professeur agrégé) and of regent of the middle school (diplôme de régente d'école moyenne). The section in which the holder studied is named on the certificate.

OUTLINES OF THE COURSES

The young people who are taking the courses in the middle normal school are at least 18 years of age and have had training equivalent to that required for graduation from the athénée. They are presumably fitted to study on university levels and the work required of them in the middle normal is of that character. As an example, the courses in pedagogy and didactic methods and exercises are summarized.

PEDAGOGY AND DIDACTIC METHODS AND EXERCISES

First Year

Time allotment.—The division of time is as follows: First semester—Chapters I, II, and III (see below)—4 hours weekly; model lessons—1 hour; help at some lessons in primary instruction—2 hours for the literary and Germanic language sections, 1 hour for the scientific. Second semester—Chapters I, II, and IV—3 hours weekly; model lessons—1 hour; didactic lessons—1 hour; practical lessons in primary instruction—2 hours for the literary and German language sections and 1 hour for the scientific section. Throughout the year the scientific section gives two hours to didactic demonstrations.

Chapter I. Pedagogy.—(a) Education: Nature, possibility, legitimacy, necessity. (b) Pedagogy: Aspects, modern tendencies. Rational pedagogy. Scientific pedagogy: Problems and methods. (c) Study of the infant and the adolescent: Elements of biology and psychology reduced to essential points. (d) Infant and adolescent: Physical evolution; evolution of intelligence and interests. (e)

General aim of education. (f) Aims of physical and intellectual education. (g) Means of physical and intellectual education.

Chapter II. Logic.—Object and aim of logic. Idea: Abstraction and generalization; comprehension and extension; the definition. The proposition and its elements. Reasoning: Deduction, induction. The syllogism: Forms. Errors and sophisms. The method: Its application in the sciences and in instruction.

Chapter III. General methodology.—Importance of method in instruction. Fundamental principles of good method, modes, and forms of instruction, general processes, active methods, modern didactic material, supervised study. The book, preparation of lessons, plan books, lessons, and their applications. The blackboard, pupils' notes and notebooks, teacher's and pupil's class journal.

Chapter IV. Methods in primary instruction.—The professor will teach the theoretical part as outlined in the programs for the primary normal schools, page 84, along with Chapters I and II above during the first semester; the second semester will be given over to pedagogical experiences and inquiries, and short tasks in experimental pedagogy.

Chapter V. Practical methodology in primary education.—(a) Helping at model lessons and lessons arranged by the teachers in the practice school. (b) Model, didactic, and practical lessons in the second semester; (c) Throughout the year the pupils in the scientific section will do practice lessons in demonstrations for physics, chemistry, and botany, so that they may be able to handle such work as teachers in the primary and middle schools.

Second Year

Time allotment.—First semester—Chapters I, IIa, and IIIa—3 hours weekly; model and didactic lessons—1 hour; practical lessons in middle school instruction—3 hours for the literary and German language sections, 2 hours for the scientific. Second semester—Chapter IIIb—2 hours weekly; model and didactic lessons—2 hours; practice in middle school instruction—3 hours and 2 hours. Throughout the year the scientific section will give two hours to practice in demonstration in science subjects.

Chapter I. Pedagogy (continued.)—(a) Evolution of sensibility, sensations and their measurement, sensations and sentiments, passions, instinctive and voluntary activity, habits, influence of intellectual education on activity, will and liberty, personality and character, anomalies in child personality, nervous, timid, and unruly children. (b) Moral education, aims and means, conscience, moral law, training the conscience and will: Egoistic, filial, fraternal, patriotic, humanitarian, and æsthetic sentiments; sentiments of justice, charity, truth, goodness, and beauty. (c) Factors in moral education; the family and social milieu, the school, the teacher, school duties;

school and family; school discipline. (d) The teacher outside of the school; postschool work, professional orientation, family associations, opposition to public immorality, etc.

Complementary program for girls: Women in modern society, rights of women, women in social work, rôle of the teacher in opposing public immorality, infant mortality, juvenile criminality, the protection of infancy, national work for the child.

Chapter II. History of pedagogy.—(a) Historical and critical study of the principal ideas of contemporary education. (b) Careful study of one great pedagogical work of the nineteenth or twentieth century.

Chapter III. Methodology of secondary instruction.—Theory. (a) All the sections will study the organization of education of the lower degree, its laws and regulations, general notions, documentation, and programs and hours. (b) Each section will study the methodology in its special fields, and the official instructions regarding that methodology.

Chapter IV. Practical methodology in secondary education.—(a) Model lessons are given alternately by the different professors of the scientific and literary subjects, and the professor of pedagogy for morals. (b) All the pupils of each section are required to prepare didactic lessons in their notebooks to the number of 39 in the literary, and 25 each in the other two sections. The languages, history and geography, morals, mathematics, sciences, and commerce are included in these. (c) The practice teaching is done in either a middle school, the fourth degree of a primary school, or the preparatory class of a middle normal school. On the subjects listed above, the minimum number of practice lessons is 110 in the literary section, 75 in the German language, 50 in the scientific.

Outlines in other subjects.—The outlines of the courses in the other subjects of the curricula of the middle normal school are not summarized in this bulletin. They include considerable subject matter above and in addition to that which the student must acquire in the middle school and athénée but in the main these are taught always from the point of view of how the teacher will use them in the schoolroom.

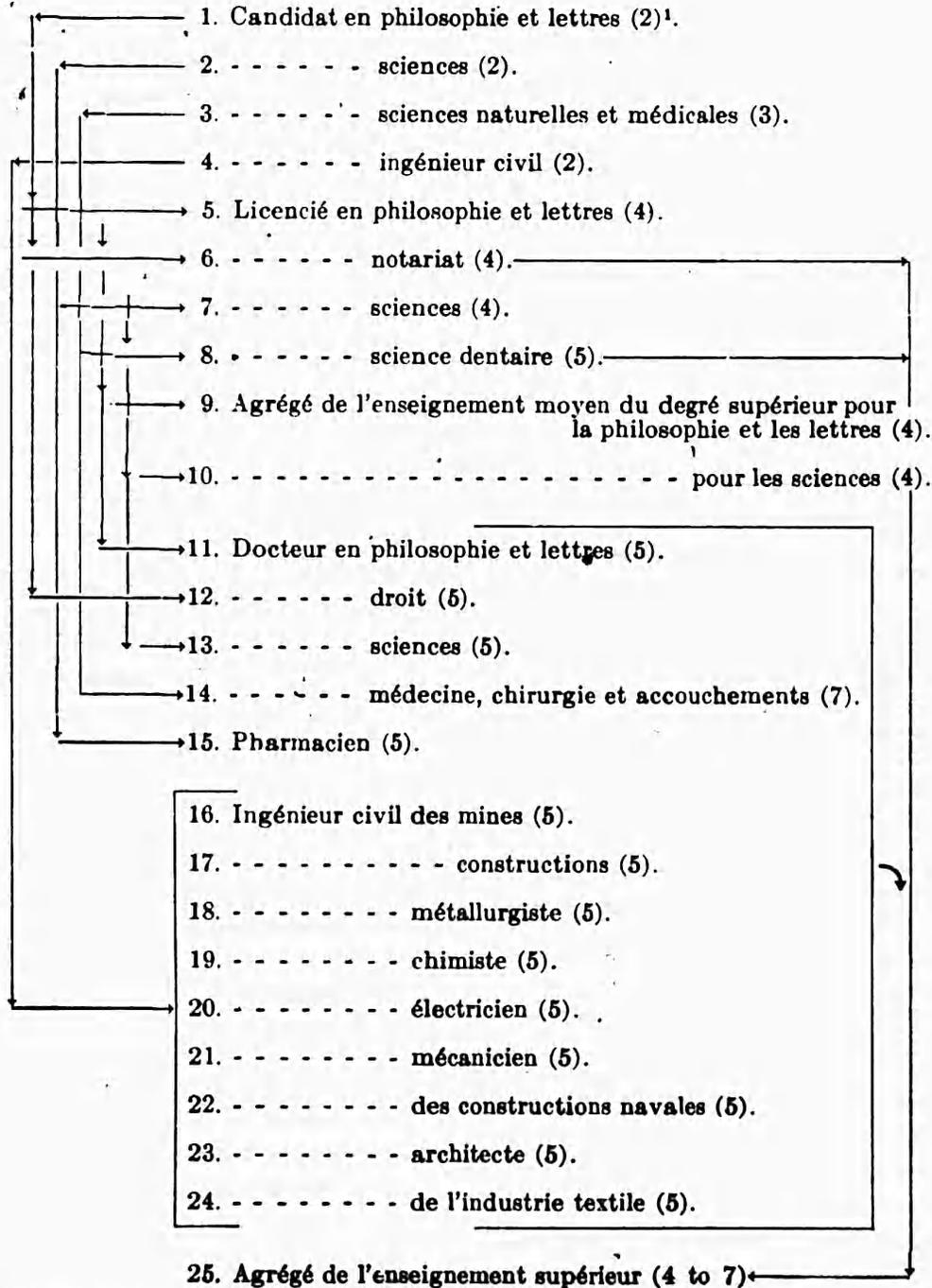
Transfer from one section to another.—A person who has successfully passed the middle normal school course and earned the right to a diploma as teacher in any one of the three sections may take an additional year in subjects designated by the ministry and be granted the diploma for one of the other two sections.

TEACHERS IN ATHÉNÉES AND COLLEGES

In order to have a good picture of the training given to professors in the higher degree of secondary instruction, those that are employed in the last three years of the athénée, it is necessary to anticipate the discussion of the universities by introducing here some

data on the degrees that are granted by authorization of the Ministry of Sciences and of Arts. They are 25 in number as shown in the list below and the lower are prerequisites for the higher as indicated by the lines. Admission to a university to study for any of these degrees is on graduation from an athénée or college, or equivalent training.

TABLE 5.—Degrees granted by authorization of the Ministry of Sciences and of Arts



¹The figures in parentheses are the minimum total number of years of university study for the degree.

To attain the degree of candidate in either philosophy and letters, sciences, or civil engineering the student must follow the required curriculum at least two years and pass two examinations; for the candidate in natural and medical sciences the term is three years and there are three examinations. Each of the four licences is given on two years of study and two examinations additional to the corresponding candidate degree.

The agrégation of secondary instruction in either philosophy and letters or sciences is the certificate for teaching in the higher degree of secondary instruction. It represents two years of study beyond the requirements for the candidate, and must either follow or be taken with the licence. The examination for it includes (1) experimental pedagogy, (2) history of pedagogy, (3) general methods, and (4) special methods in the subjects taught in the athénées. The aspirant must have done practice teaching (not full time) under the direction of his professor of methods for at least a year in some secondary school. Briefly, the teacher in the upper years of the athénée will have had four years of university training in his special subjects plus considerable pedagogy and practice teaching.

UNIVERSITY PROFESSORS

Beyond the four licences and the two agrégations listed are the four doctorates and the degree of pharmacist. The doctorate in philosophy and letters or in sciences is granted not less than a year after the licence, on the presentation of an original dissertation and a thesis acceptable to the examining jury and defended publicly by the recipient. The doctorate in law and the title of pharmacist are each three years beyond the corresponding candidates; the doctorate in medicine is four years in addition to the 3-year curriculum for candidate in natural and medical sciences. Each of the nine different degrees of civil engineer is three years of study beyond the candidate civil engineer.

To obtain the agrégation in higher instruction, the qualification for teaching in a university, a candidate holding any of the degrees numbered 6 and 7, and 11 to 24, inclusive, must present a printed dissertation that is a contribution to the progress of science, and three theses on related questions. He chooses freely the subjects for the dissertation and theses and must defend them before a jury. He must also carry out an oral lesson on a subject indicated by the jury.

OTHER TRAINING SCHOOLS

The training given in the kindergarten, primary, and middle normal schools and that mentioned in the universities, all leading to credentials that give the holders legal right to practice the teaching profession in official schools is not the only pedagogical preparation that is

to be had. Besides granting the legal degrees authorized by the ministry, the universities may and do grant scientific degrees that are evidences of scholarship and in some cases are accepted as meeting certain legal requirements. For example, the University of Liege grants the candidate in pedagogical sciences (candidat en sciences pédagogiques) to licensed middle school teachers after one year of study, and to secondary school graduates and primary school teachers after two years. The licence in pedagogical sciences (licence en sciences pédagogiques) is issued to the candidate in pedagogical sciences and the doctor in either philosophy and letters or in sciences for the successful completion of a 1-year course. Its degree of doctor in pedagogical sciences (docteur en sciences pédagogiques) is attained not less than a year after the licence by the process of dissertation, theses, and public examination.

The school of pedagogy and psychology applied to education, of the University of Louvain, aims to train staff members for the primary and middle normal schools, persons that desire to hold administrative places in either primary or secondary education, future inspectors, and those that direct various activities with infants. It confers the degrees of licentiate and of doctor in pedagogy, for two and three years of study, respectively, on graduates of secondary schools and primary and middle school teachers. The University of Brussels has a school of pedagogy; the University of Ghent a higher institute of pedagogy.

PRIMARY SCHOOL INSPECTORS

The certificate of fitness for a cantonal inspector of primary education (Certificat d'aptitude aux fonctions d'inspecteur cantonal de l'enseignement primaire) is won by passing an examination given by a jury of five persons named by the ministry. The examination is open to primary and middle school teachers that have had at least 10 years of experience in any of the primary or middle schools or normal schools either official or approved, the schools of charity under the Ministry of Justice, or the professional schools subsidized by the Ministry of Industry and Labor.

The written part is a composition on some pedagogical subject. The oral test deals with (a) psychology applied to education, pedagogy, and methodology and the history of pedagogy; (b) knowledge of the typical programs of primary schools and kindergartens; and (c) the organic law of primary education and the regulations relating to it, to school buildings, and to medical inspection in the schools. For the practical test the applicant inspects a class chosen by the jury and makes an oral report of the inspection.

EXPENDITURES

The expenditures on teacher training in the primary normal schools, the kindergarten normal sections, and the middle normal schools for four consecutive years were as follows:

TABLE 6.—Expenditures in francs for normal instruction in the years 1926 to 1929

Purpose of expenditure	1926	1927	1928	1929
1	2	3	4	5
Council for perfecting.....	5,000	5,000	7,500	7,500
Inspection.....	251,500	508,400	511,400	655,000
Salaries in national schools.....	6,370,500	11,578,550	11,578,550	16,299,000
Salaries in approved schools.....	3,900,000	7,500,000	7,600,000	10,500,000
Examinations; temporary preparatory courses.....	443,000	498,000	558,000	720,000
Scholarships.....	500,070	250,000	250,000	250,000
Matériel and maintenance of national schools.....	1,400,000	2,396,200	2,306,200	2,646,200
Missions in the interest of normal instruction.....	5,000	8,750	8,750	8,750
Construction, management, and furnishing of normal schools.....	4,388,100	2,420,000	2,420,000	2,400,000
Total.....	17,263,100 (\$479,914.18)	25,164,900 (\$699,584.22)	25,330,400 (\$704,185.12)	33,486,450 (\$930,923.31)

SECTION II.—CONDITIONS OF EMPLOYMENT

The remuneration of the professional staff in the official schools is fixed by the National Government in royal arrêté on the advice of the ministry concerned. The salaries now in force were set out in arrêté of December 16, 1927, and modified in February, 1929. The general principle is a fixed minimum plus periodic increases until a maximum is reached. In money terms they are not high.

PRIMARY SCHOOLS

The communal council sets the salaries for the primary teachers, but they must include a basal sum of 13,000 francs. The par value of the franc in coinage of the United States is \$0.0278 or \$27.80 for 1,000 francs, making \$361.40 as the annual minimum for a teacher in a primary school. To this are added six annual increases of 500 francs (\$13.90) each; and 8 biennial and 2 triennial of 1,000 (\$27.80). After 28 years of service the amount yearly will be 26,000 or 26,600 francs; \$722.80, or \$739.48.

The principals (chefs d'école) receive in addition a supplement of 2,400, 3,600, or 4,800 francs according as the school is of 1 to 3 classes, 4 to 6 classes, or 7 or more. This is not allowed to principals that do not hold a class unless (a) the school has at least 8 subventioned classes and 225 pupils; or (b) it has at least 7 subventioned classes and 175 pupils with a fourth degree and the principal gives a minimum of 8 hours to the higher degree. The rate in such cases is 4,800. In schools of only one class the 2,400 franc rate is reduced to 1,800 if the

principal has not had five years of experience. In every case the supplement is reduced by half if the beneficiary has the free use of school quarters. Men teachers not married and living in common are paid one-half the salary allowed lay teachers. Kindergartners receive 80 per cent of the pay for primary teachers.

SECONDARY SCHOOLS

The professors of general courses in the athénées begin at 24,000 francs and with 4 increments of 1,000, 8 biennial of 2,500, and 2 triennial of 4,000 each finally reach a salary level of 56,000 francs. The salaries of special teachers in the athénée range in minima from 15,000 to 22,000 and in maxima from 29,000 to 47,000. The principal (préfet d'études) has the rate of a professor with the same number of years of experience, plus 4,000 francs annually. He is entitled also to lodging, heat, and light. If these are not furnished he is given in lieu thereof a money indemnity of 20 per cent of the minimum salary plus three-fourths of the difference between the maximum and minimum.

Regents in the middle schools begin at 18,000 and with 4 yearly increases of 750, 8 biennial of 1,750, and 2 triennial of 3,000 attain a maximum of 41,000. Teachers that do not hold the regent's diploma are paid from 15,000 to 29,000; teachers of special subjects, 13,000 to 27,000. The principal (directeur or directrice) has the salary of a regent with the same years of experience plus an annual increment of 3,000 francs, and lodging, heat, and light or the money indemnity for them.

UNIVERSITIES

University professors are either ordinary or extraordinary. Ordinary full-time professors have a salary of 60,000 francs a year which may be increased by 5,000 every three years until 75,000 is reached. Extraordinary professors begin at 50,000 and at the end of three years may be increased to 55,000. No professor may at the same time be engaged in some other profession, without the consent of the Government. If with that consent he is so engaged, his increases of 5,000 francs are at intervals of five years.

NORMAL SCHOOLS

The professor or regent in a primary normal school has an initial salary of 21,000 francs which increases in 26 years to 47,000. To this are added 3,500 francs annually and housing, heat, and lighting for the director. But a director with the degree of doctor is given the same pay as a principal of an athénée. The inspector in the practice school begins at 15,000 and reaches 29,000. In the middle normal schools the salaries are substantially the same as they are in the athénées.

INSPECTORS

Inspection of primary, secondary, and normal education brings remuneration considerably above that for the teaching staff engaged in these phases of instruction. This personnel is an essential part of the central office of the ministry; the payments are as follows:

TABLE 7.—Salary schedule of inspectors

Grades and duties	Salary, in francs		Number of increases	Period of increase every—	Amount of increase
	Minimum	Maximum			
1	2	3	4	5	6
<i>Primary and normal education</i>					
Inspector general of primary education.....	45,000	60,000	3	Years 2	3,500
Principal inspector of primary education.....	40,000	54,000	1	3	4,500
Cantonal inspector of primary education.....	28,000	42,000	2	2	3,000
Inspectress of girls' work, first class.....	26,000	38,500	4	3	4,000
Inspectress of girls' work, second class.....	22,000	35,000	2	2	2,000
Inspector of primary normal schools.....	50,000	62,000	6	3	3,000
Inspector of primary normals and athénées or middle normal schools.....	54,000	68,000	2	2	1,250
Inspectress of girls' work in primary normals.....	38,000	50,000	8	3	2,500
Principal diocesan inspector.....	30,000		2	3	1,500
Diocesan inspector.....	28,000		1	2	4,000
<i>Secondary education</i>					
Inspector general.....	60,000	70,000	1	2	5,000
Inspector of general courses, higher degree.....	54,000	68,000	2	3	5,000
Inspector of general courses, lower degree.....	45,000	60,000	1	2	4,000
Inspectors of special courses.....	40,000	54,000	2	3	5,000
Inspectress of manual work and domestic economy.....	38,000	50,000	3	2	3,500
			3	3	3,000
			1	3	3,000

OTHER PERQUISITES

For all the professional workers in the official schools, the law provides family and birth indemnities. The family indemnity for each child under 21 years of age and being maintained at home is 30 francs monthly for the first child, 50 for the second, 110 for the third, 140 for the fourth, and 150 for each additional child. At the birth of each child there is a fixed payment of 250 francs. A housing indemnity of 600 francs is allowed to married teachers in primary schools, but not to married women teachers, or principals that receive the indemnity of direction.

TENURE AND DISCIPLINE

Definite appointment to a teaching position is ordinarily for life. For the primary teaching personnel, the law regulates the three grave punishments: (a) suspension with or without pay; (b) ordered to be

unattached, (*mise en disponibilité par mesure d'ordre*); and (c) revocation, so that the teachers may be safeguarded against arbitrary measures. None of these may be inflicted until the teacher affected has had an opportunity for defense before both the communal council and the permanent deputation, and in each there is an appeal to the King, allowed on the ground that unwise action by the communal authorities may be detrimental to public interest.

Suspension without pay by the communal council may not exceed six months and may not be renewed for the same facts. The substitute teacher is given that part of the salary due him under the regular scale; the remainder goes to the widows' and orphans' fund. Suspension with pay may not exceed six days.

Besides being ordered to be unattached, which is a disciplinary measure, teachers may be relieved of their positions because of illness, for the good of the service particularly by discontinuing the position, and for personal convenience. If relieved of duty because of illness they receive a pension. If the position is discontinued the general rule is that the holder receives a salary of expectation (*traitement d'attenté*) during the time of unemployment, that may not be less than half the active salary including perquisites, nor less than 750 francs. This rule is modified for length of active service and the time the teacher has received the salary of expectation. The charge is borne two-fifths by the commune, one-fifth by the Province, and two-fifths by the nation. Removals for personal convenience are not regulated by special legislation. They are made by the local authority subject always to the approval of the higher authority.

PENSIONS

Members of the teaching personnel in national institutions of university rank may retire on a pension equal to the average salary for the last five years after (a) 30 years' service; (b) the age of 70 with at least 10 years' service; and (c) by reason of disability after 20 years of service. Those that do not meet any of the conditions noted above may because of disability be allowed a pension, after 5 years in the profession, of one-sixth the average salary for the last 5 years plus one thirty-third for each added year of service. Teachers in middle or normal schools and the *athénées* may after 35 years of service, retire at 55; primary school teachers at 50 after 15 years of service. The retirement pay is usually determined by years of duty and salary last received and equals the average salary for the last 5 years divided by the age and multiplied by the number of years served. The widows and orphans of teachers and professors are aided from special funds made up of compulsory levies on the salaries of all teachers.

BIBLIOGRAPHY

- Bauwens, Léon. Code de l'enseignement moyen et de l'enseignement normal moyen. Bruxelles. A. Dewit. 1929.
- Ministère des sciences et des arts. Administration de l'enseignement normal. Règlement et programme des sections normales gardiennes. Liège. Imprimerie Georges Thone. 1926.
- Écoles normales primaires. I. Règlement général des écoles normales primaires de l'État et des sections préparatoires y annexées. II. Règlement général auquel doivent se soumettre les écoles normales primaires des provinces et des communes, ainsi que les écoles normales privées, pour obtenir et conserver l'agrément du Gouvernement. III. Programme de l'enseignement à donner dans les écoles normales primaires de l'État. Liège. Georges Thone. 1929.
- Enseignement normal moyenne du degré inférieur. 1. Règlement des divers examens de l'enseignement normal moyen de l'État. 2. Règlement (a) de l'épreuve préalable au grade d'aspirant-professeur agrégé (d'aspirante-régente), (b) de l'examen d'aspirant-professeur agrégé (d'aspirante-régente) et (c) de l'examen de professeur agrégé (de régente d'école moyenne), organisés en dehors des écoles normales moyennes de l'État. 3. Arrête ministériel fixant la formule des certificats et des diplômes. 4. Programme des cours de la section préparatoire des écoles normales moyennes de l'État. 5. Examen d'admission à la section préparatoire des écoles normales moyennes de l'État. Programme. Liège. Georges Thone. 1928.
- Enseignement normal moyenne de l'État, du degré inférieur. (Arrêté royal du 28 octobre 1927.) Horaires et programmes des cours. Liège. Imprimerie Georges Thone. 1927.
- Certificat d'aptitude aux fonctions d'inspecteur cantonal de l'enseignement primaire. Imp. du Moniteur belge. Bruxelles, rue de Louvain, 40. 1928.
- — — Modifications, 29 avril, 1928.
- — — Modifications, 27 février, 1930.
- Diplôme de capacité pour l'enseignement de la musique vocale dans les établissements d'enseignement moyen et normal de l'État. Règlement et programme de l'examen. Bruxelles. Imprimerie Émile Tychon, 42 rue de l'Orient. 1928.
- Diplômes de capacité pour l'enseignement du dessin dans les établissements d'enseignement moyen et normal. Règlement et programme de l'examen. Imprimerie Georges Thone. Liège. 1928.
- Examens conduisant à l'obtention du diplôme de capacité pour l'enseignement de la gymnastique dans les établissements d'instruction moyenne et normal moyenne de l'État. Bruxelles. Imp. M. Kremer, 80 rue de Haerne. 1912.
- Enseignement normal moyen de l'État. Acquisition, par une même personne, des diplômes de professeur de l'enseignement moyen du degré inférieur ou de régente d'école moyenne de catégories différentes. Règlement et programme. Liège. G. Thone, éditeur. 1929.
- Écoles et sections normales gardiennes. Modifications aux règlements généraux et au programme de ces établissements, ainsi qu'au règlement des examens. Bruxelles. 1928.

CHAPTER V.—SOME SPECIAL ASPECTS OF THE GENERAL EDUCATION SYSTEM

We introduce here, before taking up technical and higher education, an account of three striking phases of the general system. These are bilingualism; the attempts to provide equal instruction for equal intelligence; and the attitude, neutral in religious matters, of the official schools.

BILINGUALISM

Language division.—Most modern systems of education must provide for at least two languages of instruction; many of them use more than two.¹ Belgium is trilingual; the national languages are Flemish, French, and German. About 51 per cent of the people speak Flemish exclusively or most frequently; 44 per cent, French; and a little more than one-half of 1 per cent, German. The remaining 4 per cent habitually use other languages.

The chief rivalry is between French and Flemish, the former a Latin tongue spoken in the world by about 60,000,000 and understood by some 50,000,000 more, the latter a Germanic tongue spoken by about 15,000,000. The French-Flemish language frontier lies in general somewhat south of Brussels in an irregular east-west line from Visé in the Province of Liège to Wervicq in East Flanders. It is not clearly defined. Most of the Walloons, French-speaking Belgians, live south of the frontier, but in the areas commonly termed Flemish there are many French communities; a few Flemish groups are in the Walloon region.

The constitution provides that the use of languages in Belgium is free; it may be regulated only by law, and then only for acts of the public authority and for judicial matters.

French was the official language from the time of the establishment of the National Government in 1831 until Flemish was given equal status in law in 1873. Since then many laws have been passed and arrêtés and circulars issued dealing with the language situation, most of them directed toward strengthening the position of Flemish and removing any disabilities the Flemish people may have had because of their language. We are interested only in those relating to education.

¹ See United States Bureau of Education, Bulletin 1928, No. 13. Major trends of education in other countries. Washington. Government Printing Office. 1928.

Primary schools.—For primary instruction the general legal principle is that in all the schools, communal, adopted, and adoptable, the mother tongue of the children shall be the language of instruction. In determining the vehicular language for any class, that of the majority of the children shall be used. The head of the family shall declare the mother tongue of the child, but the school principal (chef de l'école) may decide otherwise if he believes the child can not use advantageously the language declared. The matter may then be appealed to the school inspection which has power to make the final decision.

Exceptions to this general régime are allowed by law for communes along the linguistic frontier and for Brussels and communes contiguous to it (l'agglomération bruxelloise), the exceptions to be authorized by ministerial arrêté and arranged according to the needs of the schools. They are not imposed by the ministry, merely authorized, usually after an agreement with the communal and local school authorities. In no case may they have the effect of denying to a child a careful study of his mother tongue.

In broad terms this means that in the Flemish region the primary schools are taught in Flemish; in the Walloon part, in French; and in a few places along the eastern border, in German; while in and around Brussels and along the language frontier where the two peoples are more intermingled special provision is made in the way of French and Flemish sections. In some large schools the entire student body is divided into two sections, one taught in Flemish with French as the second language, the other taught in French with Flemish as the second language. The ministry's typical program for primary schools makes the second language optional two hours a week each year and to be begun with the fifth year.

Secondary schools.—The situation with respect to secondary education is more complicated. The secondary schools, maintained and administered mainly by the National Government, send most of their pupils on to the universities to prepare for Government positions, the professions, and higher administrative places in business, commerce, and other vocations. For the Flemish student who comes from the primary school with but little French to be compelled to take his secondary courses with French as the vehicular language would be not only a severe hardship but an interference in gaining that higher knowledge and appreciation of his mother tongue to which he is entitled, but for him to be graduated from the university and enter upon his responsibilities in a country that is nearly half French and in which the French language and literature are extremely important, without a good mastery of French would be a heavy handicap. In like manner Belgian leaders of French descent can not afford to be ignorant of the Flemish language. Naturally the Government will

be forced to take into account the language situation in the secondary schools; the question will frequently come before the Parliament; it is an issue in the politics of the nation.

A law of June 15, 1883, with ministerial interpretations of 1886, 1921, 1923, 1926, 1927, and a ministerial circular of December 28, 1928, together with a law of May 12, 1910, govern the situation. In general these are designed to safeguard the rights of Flemish students in the use of the mother tongue and to assure them a fair knowledge of French, and relate only to the Flemish region and the Brussels agglomeration. The last named, the law of 1910, applies indirectly but forcefully to the language situation in the secondary schools. It refuses admission to the examination leading to certain university degrees, to any person who has not submitted successfully to a preparatory test in modern languages. Briefly the test requires that of the National languages, Flemish, French, and German, the applicant show a thorough knowledge of his mother tongue and a practical and effective knowledge of one of the other two or of English. Exemptions are granted to certain students of the Flemish region and the Brussels agglomeration educated in conditions that practically assure the knowledge which the test is intended to show.

Of course the secondary schools that prepare for the universities, must take this test into account in framing their programs and the heads of the schools are expected to tell the parents of it when they enroll their children in the first year of secondary studies. Apart from that, the Ministry adopts the attitude that the head of the family may declare the mother tongue of the child though the same provisos, previously noted for the primary schools as to the judgment of the principal and the teachers with an appeal to the inspector, apply.

The ministerial circular of December 28, 1928, relative to the use of the languages in the national middle schools in the Flemish region deals so closely with schoolroom practice in giving Flemish children a good knowledge of French along with the Flemish that it deserves some quotation and analysis.

The aim to be attained in teaching the second language should above all be practical. It is desired that upon leaving the middle school, the Flemish student 15 or 16 years of age readily read easy French, be trained in current French language, and write almost without error an ordinary French letter. With the bright pupils this is attainable. Teachers ought not to attempt anything more ambitious.

Most of the failures in the efforts of the teachers are due to the fact that they often aim too high. Hurrying along without stopping, they wish to introduce their classes to a knowledge of literary works too difficult, and force the children to run before they have learned to walk.

It is important to teach first the spoken language, the simplest language, the most immediately useful, that of every day; the vocabulary, the forms, the syntax of ordinary conversation on subjects not at all complicated.

* * * The recitation texts should be few, short, simple in style, and easily understood. Preferably they should be narrative poetry. They should

be perfectly explained, thoroughly understood, and often repeated. * * * Many Flemish students speak French only at the school. By having them acquire a little repertoire of easy texts learned and pronounced as well as possible, and repeated many times that lack of French conversation outside of the school may be partially overcome.

Finally it is an error to think that the instruction in French for Flemish students should ever cease to have for its foundation the knowledge they have of their mother tongue. A French word translated into Flemish saves the classes long explanations, loss of time, and mistakes. It is enough to run over the notebooks of the pupils in which the teachers make use not of clear, rapid translations but of jumbled paraphrases to prove the absurdity of a system not yet fully abandoned in our schools. * * * There is no knowledge previously acquired by the pupils that one may not profitably apply to teaching them new ideas.

* * * The classes often are composed of elements too diverse; some pupils know more or less French and others are ignorant of it. This uneven composition of many of the classes is one cause of failure in teaching the French language. * * * The Government has decided to remedy it by creating, wherever necessary, special instruction in French for pupils who do not know the language when they enter the middle school.

In addition to these instructions as to methods of teaching and composition of classes, the circular requires teachers to use the hours for supervised study of science, history, geography, and commerce to give instruction in French. At those periods teaching subject matter is purely secondary in importance to having the pupils discuss in French things they have already been taught in the studies named.

While the law of 1883 provided that the technical terminology in the mathematical and natural sciences be taught simultaneously in French and Flemish, the circular warns teachers to use common sense about not loading the child with a formal terminology for which he has no use. It fixes the complementary exercises in languages in the general instruction division of the middle schools as they are shown in Note 2 on page 33. The general purpose is that in the Flemish schools and sections, for the first year, or sixth class, 6 hours shall be given to the study of French, 2 more hours if needed, and 2 hours of study of other subjects supervised in French, a total of 10 out of the 34 hours allowed the student. The second year calls for 7 in French study, 2 of complementary exercises, and 2 of study supervised in French, in all 9 to 11 of the 34; while for the third year there are 5 hours for French, 2 or 3 in complementary exercises, and 2 in supervised study, a total of 7 to 9 or 10 of the 34.

Preparatory classes.—A preparatory section in which the studies of the 6-year primary course are taught may be annexed to a middle school; such a section covering only the sixth year of primary study may be joined to an athénée. With a few exceptions, the most notable of which is in the language régime, the programs are the same as those in the primary schools. Throughout the Flemish region these preparatory classes must be taught in Flemish and the teaching of French so arranged that the pupils will be fitted to follow the French

course in the secondary schools. French conversation may begin in class 3 with six half-hours a week, be continued in class 4 with eight half-hours and in classes 5 and 6 with three hours. Special courses may be organized for pupils that do not have proper knowledge of the language.

In the Brussels agglomeration and along the language frontier Flemish and French are given an equal number of hours. In these areas there are some classes in which a few French-speaking children are mingled with a much larger number of Flemish. Of such a situation the ministry says,

It is here that the patience and care of the teacher should be used to see that these (French) pupils, who have an equal right to instruction with the others, suffer as little as possible from their special situation. Such a class may become for the teacher a new resource—with a little ingenuity, vivacity, and devotion, he will find in it elements of instruction mutually profitable to all the pupils.

Normal schools.—Of course a bilingual school system can not be carried on without having the teaching corps adjusted to meet the demands of the schools. The expectation in Belgium is that teachers using French for the vehicular language will have French for their own mother tongue and will have been trained through it. They will also have been trained in Flemish or German as a second language. For the Flemish schools the teachers are Flemish and trained through that language. And, in general, the second language courses in primary and secondary schools are in the hands of persons to whom the language is the one of most frequent use.

Universities.—The University of Ghent by law of July 31, 1923, is required to offer two régimes of study, French and Flemish.² The Colonial University is prepared to and does arrange its courses so they may be taken by either French or Flemish speaking young men. The Catholic University of Louvain draws its students in about equal proportions from both language groups and in effect maintains two teaching corps, one to give instruction through French, the other through Flemish.

General comments.—The educator in the United States so accustomed to the unilingual system used here that he seldom thinks of the possibility of a bilingual or trilingual or even multilingual system—commonplaces in other countries—may feel that the educational language situation in Belgium is more or less needless, extremely difficult to administer, and very expensive. To some extent that is true but in a much more modified way than he knows. Other considerations enter.

The interest and emotional spread that are lacking in language learning in the United States are in full force in Belgium. West of that small country, just across the channel, are the Anglo-Saxon

² See also page 126.

English. On the north are the Dutch, closely akin to the Flemish. Along the eastern border are the Germans with a national philosophy differing from that of Dutch. South Belgium is under a Latin influence and language. With all these neighboring peoples, Belgian men and women of affairs must come in constant contact and that compels their educational system to outfit them with a good equipment of languages.

The environment greatly lessens the difficulty of doing it. The Belgian child on his way to and from school, in his play and in his regular daily life meets with some language other than his mother tongue; the familiarity leads him to take up language studies with interest and confidence, not ennui and dread. His surroundings are constantly helping his classroom work which is usually skilfully directed by teachers that have lived in and are familiar with his milieu and having experienced his difficulties are able to help him overcome them.

As to the cultural and economic value of the languages, there seems little doubt that—other things being equal—a university graduate with a fluent command of two or more languages other than his own, has marked advantages over the one who has been content to limit himself to his mother tongue.

Finally, two markedly different groups in Belgium have maintained through a century a national entity without either of them sacrificing its language or cultural identity. They have helped to show that language unity is not necessary to or perhaps even advantageous for national unity and the official school system has been no small factor in pointing that lesson.

EQUAL INSTRUCTION FOR EQUAL INTELLIGENCE

Tuition.—That attendance at the primary schools is free of any charges for tuition has already been noted. Children attending preparatory classes attached to secondary schools pay each 100 francs a year. In the secondary schools the fees are 200 francs yearly for the three lower classes and 300 francs for the higher classes. Additions of 40 and 50 francs, respectively, may be made for students that are not residents of the locality. War orphans, the children of intermediate, secondary, and normal school teachers, and children that have completed the sixth primary year in a locality where there are no schools giving the seventh and eighth years, are exempted from tuition. Tuition free or at lower than regular rates may be allowed at the request of parents, especially the parents of large families. The national normal schools are mostly internats and the teacher-pupils are not only free of tuition but are furnished food and lodging at very low rates. By such means as these the educational highway

is kept fairly well open for all young people of ability. Still this is not enough.

Aiding the stronger minds.—During the war several European nations, Belgium among them, suffered such a depletion of human wealth as to make it imperative that the sum total of the nation's intelligence be developed and used to its highest limit, so schemes were proposed to provide ways and means for continuing the education of those children who gave promise of ability to fill positions of importance but who were poorly circumstanced and without help would not be able to go beyond the rudiments of school training. Given the principle that high-grade intelligence in any of the nation's citizenry is an asset to the entire nation and therefore may properly be trained at national expense, the next step was to devise a method of turning the principle into practice.

Here many questions arose and among them three stood out as the most important: How are the most intelligent among the primary children, those who will surely profit by further training, to be selected? On what basis shall the decision be made that the child needs help in addition to the opportunities offered by the comparatively free official school system? How to raise and administer the funds for that help?

The Belgian experience in trying to answer these questions is valuable. Two main plans have been developed: Funds for the better endowed (*Fonds des mieux doués*) limited to most phases of post-primary education but including in some cases the fourth degree of the primary school; and the scholarships for both undergraduate and graduate study offered by the University Foundation (*Fondation Universitaire*), an incorporated organization.

Funds for the better endowed.—The first law for the funds for the better endowed was enacted October 15, 1921. The justification written for it when it was proposed quoted the opinions of various French educators uttered at different times during the years 1909 to 1920 and Mr. Fisher's statement, while he was president of the board of education of England and Wales, at a meeting of the school committees in 1917, to the effect that national interest requires that all capacities be exploited to the full, and that equality of intelligence and aptitude should have equality of instruction. The law as passed provided that every commune of at least 20,000 inhabitants should create its communal funds for the better endowed, that smaller communes could unite to meet the 20,000 minimum, and that all other communes in a Province, not falling in one of the two classes above should form a central provincial fund. This did not work out well; it resulted in 167 funds of diverse importance with 172 committees for selecting recipients. The many committees used different bases for choosing the better endowed; some were very lenient, others very

severe, and the cost of making the choices was higher than necessary. The law was amended in 1927 in such a way as to retain the communal funds for the 38 communes with at least 20,000 population but replaced the 129 other funds with 41 arrondissement funds each backed by a population between 100,000 and 200,000. This simplified the administration and gave the different funds population groups large enough to insure some really better-endowed children.

As to the kind of recipients, the law of 1921 designated them as children of exceptional merit (*enfants de mérite exceptionnel*) but these are by definition very rare and a rigid application of the term would defeat the purpose of the project. The 1927 designation became children specially endowed (*enfants particulièrement doués*) as a term that would not abandon the real purpose of the act which is to remove the obstacle of poverty from those whose intellectual and moral qualities seem particularly to fit them for higher studies and would at the same time keep the funds for the better endowed from becoming funds for ordinary scholarships.

The selections of children to be helped by each of the 79 funds are made by a committee of selection of five members one of which is a physician. Of the other four, two are appointed by the communal or provincial authorities having control of the fund and two by the King, in such a way that both official and private schools are represented. The applications are sent to the authorities and by them referred to the committees who make the investigations necessary and return the requests with their recommendations. Appeals may be taken to a council of appeal which holds its sessions at Brussels.

The general instructions to the committees of selection are that they will base their judgments on (1) the child's school record for the previous three years as reported by his teachers, (2) his physical condition as shown by the school medical inspector, and (3) group psychological tests if the committees choose to use them. The first of these, the child's school record, arranged according to the ministerial circular of January 15, 1925, is much more than an ordinary statement. The instructions read in part:

Complete knowledge of a pupil includes an examination of the following points:

The child's past.—Heredity, environment in which he spent his first years, progress of his growth and of his physical and mental development, illnesses in early infancy, the schools he attended, his first teachers' opinions of him.

The child in the primary school.—Physical condition, health, growth in height and weight, muscular strength, fatigueability, influence of family and school environment on his physical development. Organs of speech.

Sensorial condition.—Sight, hearing, smell, taste, touch, stereognostic sense, muscular sense; condition of the organs and acuity of each sense, qualities of movements.

Intellectual condition.—Qualities and, within the limits possible, measures of each intellectual faculty: Perception, attention, memory, imagination, association of ideas, judgment, reasoning. Qualities of language and of elocution.

Comprehension, critical sense, spirit of initiative and invention, taste for reading.

General intelligence, remarkable intellectual aptitudes.

Qualities of school work: Duties, lessons, rapidity and worth of work done, way of adapting himself to new work, place and results in examinations, subjects in which he is strong, is weak.

Influence of the family environment.

Moral condition.—Personal qualities and defects: In his relations with his parents, his brothers, his friends; conduct with animals. Conduct at school, with his teacher, with his fellow pupils.

Character, condition of his will.

Æsthetic sense.

Family and school environment.

General estimate of the pupil.—Department, education, worth, future possibilities.

The model school card is designed to make the record brief and complete.

MODEL FOR SCHOOL CARD

School year..... Year of studies.....
Name of pupil.....
Age of pupil.....

I. PHYSICAL CHARACTERISTICS

				Comments
Vigor.....	Great	Normal	Weak ¹	
Rapidity of movement....	Great	Normal	Weak..	
Control of movement....	Great	Normal	Weak..	
Appearance of fatigue....	Slow	Normal	Rapid..	

II. INTELLECTUAL CHARACTERISTICS

Attention.....	Great	Normal	Weak..
Observation.....	Great	Normal	Weak..
Memory.....	Great	Normal	Weak..
Comprehension.....	Very quick	Normal	
	Slow	Difficult	Dull.
Judgment.....	Clear	Rapid	Exact
	Obscure	Weak	Faulty.
Creative imagination....	Rich	Average	Poor....
Mental curiosity.....	Great	Normal	Weak..
Initiative.....	Great	Normal	Weak..
Adaptation.....	Great	Normal	Weak..
Taste for reading.....	Great	Normal	Weak..
What kind of reading.....			
Elocution.....	Easy	Normal	Painful..
Language troubles.....			
Dexterity in drawing.....			
Dexterity in manual work.....			
General intelligence....	Very quick	Very clear	
	Quick	Clear	Average
	Slow	Small.	
Subjects preferred.....			
Subjects in which, weak.....			
Remarkable aptitudes.....			

¹ Strike out the words that do not apply.

III. MORAL CHARACTERISTICS

		Comments
Application.....	Slack, passive, slow, non-chalant, lazy.	Active, rapid worker.
Personal character.....	Greedy.....	Moderate
	Likes ease.....	Strict with self.
	Negligent, dirty.....	Clean, careful.
	Without self-respect.....	Dignified.
	Presumptuous, susceptible, boastful.	Modest.
	Penurious, wasteful.....	Generous, provident.
	Disorderly.....	Orderly.
	Babyish, timid, obstinate.	Audacious.
	Hypocritical, false.....	Frank, sincere.
	Teasing, quarrelsome.....	Likes peace, can be tormented.
	Brutal, violent, quick tempered.	Calm, poised, tranquil.
	Unstable, restless.....	Serious.
	Talkative, an idler.....	Quiet.
Humor.....	Sad, peevish.....	Gay, enthusiastic.
Esthetic sense.....	Weak.....	Marked.
Conduct toward animals.	Brutal, cruel.....	Kind.
Conduct toward other pupils.	Indifferent, cold, jealous, unjust.	Devoted, serving, just, sociable.
	Antiphaetic, a follower, laughing-stock.	Sympathetic, good, a leader, dominating, independent.
	Impolite, defiant.....	Polite, confiding.
Conduct toward teachers.	Deceitful, flatterer, impertinent, disobedient.	Submissive.
	Undisciplined.....	Disciplined.
General evaluation of the pupil.....		

Results of collective tests.

Intellectual quotient.

Results of individual tests.

Teacher

Principal

Date

In actual scientific terms, the ultimate success of this method of selecting the better-endowed children in the primary schools is, of course, not determinable. The plan seems as good as most of those proposed for such purposes. Certainly it has the advantage of requiring the teaching personnel to think carefully about the characteristics of each child.

Persons in poor circumstances whose children are entitled to aid from the funds for the better endowed are defined to be (a) workers, day laborers, laborers, and domestic servants; (b) clerks and other

employees of lower and intermediate rank, those in public offices as well as in private ones, commercial houses, societies, and other private establishments, teachers and other agents attached to institutions of learning for as much as the salaries of these persons do not exceed a maximum fixed by the Government; and (c) all other persons whose direct national taxes do not exceed a maximum established by the Government. This condition (c) applies also to those in category (b) above. In actual practice "in poor circumstances" is determined largely by the family income in relation to the number of persons in the family.

The general rule is that the funds will be used only for the field of instruction beginning at the close of primary school and terminating with the beginning of university studies but on these levels language schools and correspondence schools are excluded. Some awards are made for fourth degree primary study especially if the recipient must live away from home while attending. They are also made for university studies such as for the priesthood and the army service, since the University Foundation does not take care of those. They may even be extended to Belgian children studying in foreign countries and to the children of foreigners domiciled in Belgium.

The normal annual resources for each of the funds is fixed at a communal allocation of 30 centimes a person, a provincial subvention of 10 centimes a person, and a national subsidy that may not be less than the communal allocation. The funds may receive gifts and legacies.

The amount of aid given varies according to the expenses involved in taking the kind of training the recipient wishes. In computing it, tuition, cost of books, maintenance, the loss of earnings, the financial condition of the parents may all be taken into account. Beneficiaries assume a moral obligation to repay the funds when their means permit.

The number, amount, and distribution of the awards for three of the years since 1921 were as follows:

TABLE 1.—Awards from the funds for the better endowed

Type of school	1922-23		1924-25		1927-28	
	Number	Amount in francs	Number	Amount in francs	Number	Amount in francs
1	2	3	4	5	6	7
Primary normal.....	498	320,780	1,108	964,037	1,205	1,524,320
Middle normal.....	42	27,215	82	69,347	88	128,080
Lower secondary.....	247	102,701	544	280,100	876	692,097
Higher secondary.....	354	184,320	657	448,849	1,311	1,373,940
Technical.....	179	82,972	224	155,049	595	577,240
Other (Art, etc.).....	43	29,950	135	109,656	255	319,525
Total.....	1,361	747,947	2,749	2,024,068	4,330	4,615,202

The data for the years not given show an approximately steady rate of growth in number of awards and total amount expended. A high proportion is for study in the normal schools.

The University Foundation was incorporated by act of July 29, 1920, for the purpose of aiding young Belgians who have not sufficient means, to attend institutions of higher education, and to develop scientific production in Belgium. The student aid is given only to those who are prepared for university study and the recipients agree to repay the foundation within at least 10 years. The Foundation conducts its own rather rigorous examinations to determine the fitness of the candidates. Three thousand seven hundred and thirty-four students were aided in the first 10 years of the Foundation's work. The average amount of aid per student increased from 1,964 francs in the first year to 3,259 in the ninth. The Foundation also assists the ministry in providing for some scholarships for study in other European countries and in cooperation with the C. R. B. Educational Foundation administers 18 scholarships for young Belgians to study in the United States.

NEUTRALITY IN RELIGION

The constitution guarantees religious liberty and provides that no one may be constrained to take part in any way whatever in any religious ceremony or to observe any rest day. In carrying out those constitutional mandates the Belgians do not exclude the teaching of religion from the schools. Religion and morals are on the programs of the official primary, secondary, and normal schools. They are required to offer those two subjects; the pupils that do not take the course in religion must follow the one in morals. But in the matter of what principles of religion are taught, the school authorities are neutral.

By law they set apart the first or last half-hour of either the forenoon or the afternoon for the classes in religion. The ministers of the different creeds are invited to give the instruction. No member of the public teaching, administrative, or inspection staff, not even the ministry, interferes in what they teach. The child, or his parents for him, is free to decide whether he will attend. If no minister is available to do the teaching, any teacher may elect to give the courses or the school authorities and the religious authorities may agree on some other suitable person. The courses are prepared by the different churches; the inspection of the teaching is by religious inspectors. In brief, the nation sets apart a certain amount of time each day for instruction in religion and the churches are free to use that time in their own way and without molestation.

This neutral attitude of the official school system is not satisfactory to many Belgians so a private church system is maintained that on

all levels is organized in about the same way as the official. These are the free schools (écoles libres) so called because they are free of national control except in so far as the nation takes charge of licensing the practice of professions and dictates the training necessary for them. This does not mean that the free schools receive no public funds; on the contrary, they do have many subsidies allowed them but in that case they accept inspection by national authorities.

BIBLIOGRAPHY

Bauwens, Léon. Fonds des mieux doués. Lois coordonnées des 15 octobre, 1921-25 juin, 1927. Commentaire. Cinquième édition. Bruxelles. Librairie Albert Dewit. 1927.

Other references for this chapter are in the bibliographies at the close of the chapters relating to the different levels of instruction.

CHAPTER VI.—TECHNICAL AND AGRICULTURAL EDUCATION

TECHNICAL EDUCATION

Belgium is 11,754 square miles in area, about the size of Delaware and Maryland combined; its population was estimated in 1929 as 8,060,189, or 686 persons per square mile, a greater density of population than any other country. Seventy-eight per cent of the people live in communes of more than 2,000 persons each. The soil is fertile and intensive agriculture is used, but a considerable proportion of the country's foodstuffs must be imported. Payment for these and the favorable geographical location of the country make manufacturing and commerce main industries and give great importance to technical education. "In effect," writes the Minister of Industry and Labor, "when we view the economic situation of our country, a thought rises in our minds with a tenacity that explains the much repeated: We must export, it is a question of life or death with us." He accepts the definition of the Council of State of France that "technical education is that education which has for its aim the practice of the useful arts and the application of scientific and artistic knowledge to the different branches of agriculture, industry, and commerce."

Technical instruction is given on all levels above the eighth year of the primary school. This does not mean, however, that the system entirely parallels the one already described for general education and that the higher technical schools draw their students from lower technical institutions. On the contrary a technical institution of university grade will gather much of its enrollment from the scientific courses of the athénée; and the technical secondary schools draw from the general primary classes.

ADMINISTRATION

Technical education is for the most part a matter of communal, provincial, and private effort. While the national government pays from 40 to 55 per cent of the teachers' salaries, 33 to 48 per cent of other expenses, and half the cost of the equipment, it makes no provision for the buildings and does not attempt to set out regulations and courses of study. The subsidies are arranged through the general direction of technical education in the Ministry of Industry and Labor and that direction with a staff of 13 inspectors for boys' schools and 12 for the girls' regularly supervises work and examines and

approves the courses of study and the plans for carrying them out. The higher council of technical education intervenes in an advisory capacity and occasional consultative committees study special phases of the field.

The six large classes of technical instruction in Belgium are: Household economics (*enseignement ménager*); vocational; industrial and vocational design; industrial; commercial; and higher technical.

Household economics was taught in 1927-28 in 245 schools and classes, 58 of which were official and 187 free (private) with national subsidies. They employed 599 teachers and enrolled 8,896 girls. The instruction is for young women who are about ready to leave the primary school and is intended to train them in their future duties as wives, mothers, and the educators of their children. The schools offer theoretical and practical courses throughout the week; the classes are generally practical and held at least twice a week. The theoretical courses include particularly hygiene, domestic economy, home accounting, and the properties of foods. The practical instruction deals with most of the problems met in maintaining a well-kept home.

Vocational instruction for boys is of many kinds. Designed to teach them a craft, it varies according to the needs of the region where the school or class is established. It is open to students at least 14 years of age and courses are offered in buildings and public works, cigar making, barbering, chemical industries, bookmaking, mechanics, tanning, textiles, pottery, clothing, etc. In 1927-28 these institutions, either schools, classes, or apprentice shops to the number of 38 official and 142 private, all subventioned by the nation employed 2,390 teachers and enrolled 37,874 students of which 1,055 were girls. In some of the courses the time is equally divided between theory and practice; in others either theory or practice is so stressed as to exclude the other. Some are full-day schools of 45 to 48 hours a week; others are evening courses to help young workers gain a general knowledge of the craft in one phase of which they are working; still others are strictly apprentice shops where theory is reduced to a minimum.

Vocational instruction for girls at least 14 years of age is offered in the same three kinds of ways as for boys and is intended by a general culture and technical training to prepare them for manual professions and for those relating to applied art and the commercial sciences. The curricula of the schools are four years in duration and include a general curriculum like that in the national middle schools but with a more professional bias, some professional or commercial divisions, and a division of household economics. The professional courses are very diverse; those in commerce are in accounting, correspondence, and stenography. The apprentice shops give a complete 4-year training in the crafts chosen by the pupils. An additional year may

be taken by those who wish to become overseers or managers. Three and four year evening courses are offered for day workers. These institutions, subsidized from national funds, numbered in 1927-28, 149 official and 262 private with an enrollment of 120 boys and 31,247 girls and a teaching staff of 2,356.

The schools and courses of industrial and professional drawing are open to graduates of the 8-year primary school and aim to teach young workers to make their own plans and designs and read those that are placed before them for execution. The programs of the courses call for general theoretical branches, ideas of technology, nature of materials, and freehand, geometric, and projection drawing. The courses are either evening or Sunday, or both. Subsidized institutions, 34 private and 34 free, in 1927-28 taught 6,589 boys and 26 girls and employed 372 teachers.

Industrial education is given in either primary or secondary-industrial schools. The former prepare young workers for the latter or give a limited technical knowledge to those who are not capable of or have no occasion for going further. They include two years of study followed often by one or two years of a somewhat more advanced technical program. At the completion of the studies, a certificate of capacity is issued. The secondary schools aim through an almost exclusively theoretical training to give the technical knowledge that may not be had in a shop. These are evening or Sunday courses, or both. They amount to two preparatory years followed by two special years on the industries of the region. Graduation from the eighth primary year is required for admission. The curricula are many; among them may be sections for mechanics, electricians, chauffeurs, railroad workers, mechanics, metallurgists, chemists, naval construction, etc. Commercial sections may be included. These schools to the number of 136 official and 37 private subsidized enrolled 28,938 boys and 2,589 girls in 1927-28, taught by 1,763 teachers.

Commercial education is given in professional commercial schools, and in some courses in commercial sciences and languages. The former train employees to be useful in large business houses in such rôles as stenographer-correspondent, accountant, correspondent in foreign languages, and agent, that is, as immediate and trustworthy helpers to the heads of commercial and industrial enterprises. The instruction is organized on a plan of three degrees: Elementary, middle, and superior, each of two years. A certificate of practical commercial studies (certificat d'études pratiques commerciales) is issued at the close of the middle degree. The successful student after the fifth year is given a diploma of stenographer-correspondent (diplôme de sténo-dactylographe correspondant) or of assistant accountant (aide-comptable). Completion of the sixth year leads to the diploma of accountant (diplôme de comptable), correspondent in

foreign languages (correspondant en langues étrangères), or agent (agent d'affaires pour le commerce extérieur).

The courses in commercial sciences and languages are for young people in employment who can not attend a school. They are either evening or Sunday-classes and vary in subjects to suit the needs of the pupils.

In 1927-28 these two forms of commercial education enrolled 10,621 boys and 6,059 girls in 10 official and 62 free subsidized schools. They employed 600 teachers.

Higher technical education is given in 24 institutions (5 official and 19 free) to 5,562 men and 152 women by a staff of 539 teachers. The nature and organization of the instruction are told in the chapter on higher education.

Statistical summary.—To summarize the statistical data for each of the six kinds of instruction described, technical education in 1927-28 was offered in 1,163 institutions using a teaching staff of 8,619 and enrolling 88,649 boys and 49,973 girls; total 138,622. They granted 20,196 certificates. The subsidies amounted to 190,130,000 francs and of this 52.3 per cent came from the nation, 32.1 per cent from the Provinces, and 15.6 per cent from the communes.

Professional staff.—The matter of training the teaching and administrative personnel seems to be rather unsettled. The University of Labor of Hainaut (Université du Travail du Hainaut) announces courses for four classes of persons: (1) Engineers and student-engineers who are presumed to have sufficient general and technical training but lack pedagogical preparation; (2) technicians, artisans, and workers with weak general education, good technical preparation, and no pedagogic training; (3) employees in commerce and industry that are very apt in their special lines but have little general training; and (4) teachers and professors in the general school system that are well prepared to teach general subjects in the technical schools but lack the skill in making those general courses serve technical needs.

For the first of these classes a 1-year normal course is given at the school of mines at Mons and at the Institute Warocque. These are open to holders of the diploma of engineer or the licentiate in commercial sciences (see p. 132), or persons with equal training. They include for each of the fields of electricity, mechanics, civil construction, mining, workshop technology, and industrial design, model lessons given by special professors, analysis of the programs and a study of the didactic equipment and collections, and five lessons in pedagogy. A certificate of attendance is granted at the close of the course.

The technicians and the employees find normal training at the University of Labor in Charleroi, the Institute of Arts and Crafts in La Louviere, the National Professional Museum at Morlanwelz, and

the Institute Warocque at Mons. It comprises one year of study devoted entirely to general culture and a year for model lessons, pedagogy applied to technical education, practice lessons done by the students, and the proper organization of technical education. Admission is by examination or to regular pupils in the last year of a higher industrial school, or to holders of a diploma showing equal training. A certificate of attendance showing the specialty the bearer may teach is granted at completion of the course and a successful lesson conducted before a jury.

The University of Labor offers a 10-month course to aspirants for the position of master of apprenticeship (*maitre d'apprentissage*). The students are paid small salaries, work directly in the shops, and take part in the instruction and discipline. At the close of the course those that pass the examination are granted a certificate of fitness (*certificat d'aptitude à exercer les fonctions de maitre d'apprentissage*). Admission is to holders of the diploma from a professional day school or professional evening courses who pass a practical examination.

Training courses are given also at Antwerp, Liège, Bruges, Alost, Malines, and Courtrai.

Salaries.—The remuneration of the personnel is arranged on schedules similar to those for general education and in about the same amounts.

AGRICULTURAL EDUCATION

The Second General Direction in the Ministry of Agriculture has three divisions: The horticultural office; agricultural education; and the division which deals with agronomy, laboratories, experimental stations, and rural life. All three are engaged in some phases of horticultural and agricultural education, mostly vocational, and in that respect different from the general agricultural instruction, supervised by the Ministry of Sciences and Arts, that is given in the fourth degree of many of the rural primary schools and in courses offered in some of the secondary schools of general education.

A superior council for perfecting agricultural and horticultural education, set up by royal *arrêté* of March 31, 1919, advises the Ministry of Agriculture in all matters submitted to it. The council consists of 12 members most of whom are connected with schools of agriculture. It is presided over by the minister or his delegate and has as consultative members 10 persons, chosen one each from the ministries of industry and labor, justice, and sciences and arts, and 7 from the inspectors of agricultural education.

Vocational postschool courses.—These are vocational continuation courses in agriculture open to pupils 14 years of age that have completed the primary school. They are given about three times a week

usually in the evening at a primary school building and cover from 75 to 100 hours a year. Besides the strictly technical work the students do some general studies such as arithmetic, drawing, and essay writing. The programs are arranged for two terms held either the same winter or more commonly for two succeeding winters. In 1925-26 there were 483 centers with an enrollment of 9,781 pupils doing such work.

Temporary and regional schools of agriculture and of farm mechanics.—Sixty-six such courses enrolled 1,914 students in 1926. About 50 per cent of the students have completed the postschool courses; most of them are young people 17 or 18 years of age in position to apply immediately to their farming pursuits the knowledge gained. The courses run from 100 to 300 hours given for 2 to 4 half days weekly in the winter months by specialists and experimenters; they include a study of plants and animals, accounting, farm mechanics, electricity, and rural law. Much of this activity is the result of private initiative aided and directed by the Ministry of Agriculture. Similar temporary schools and sections of horticulture are maintained in 45 localities. Three of these are for girls.

The schools of farm mechanics offer a program which includes a review of the principles of general science as a basis for the practice of farm mechanics, handling materials, farm machinery, gas engines, and electricity, and its applications in farming. The pupils are divided into groups directed by specialists. The number enrolled in 1926 in the three schools was 121.

Secondary schools of agriculture and of horticulture.—The most important one of these is national and located at Huy (École moyenne pratique d'agriculture de l'État, à Huy). It admits students 14 years of age who pass an entrance examination. Enrollment is limited to about 40. The course is two years in the first of which 18 hours weekly is given to theory and 14 to practice; in the second the hours are, respectively, 17 and 15. Besides general subjects, the classes study natural sciences, agriculture, animal husbandry, and rural engineering. The school is well equipped with books, scientific collections, and an experimental farm. A certificate of secondary agricultural studies is granted to students that pass the final examination.

Another important secondary institution is the National School of Horticulture and Agriculture at Vilvorde (École moyenne pratique d'horticulture et d'agriculture de l'État, à Vilvorde). The courses are three years in duration and open to persons 16 years of age who pass an entrance examination. The enrollment is generally about 80, and in 1930 eight were girls. The main lines of study are the culture of fruit, of flowers, and of vegetables. The pupils work three days at a time at each of these in rotation. They are taught the

commercial side—buying, selling, and trading—as well as the professional agricultural phase. The programs include physics and meteorology; general and agricultural chemistry; botany (morphology, anatomy, physiology, pathology, and botanical geography); agronomy; fruit, vegetable, and flower culture; commerce and accounting; carpentering; drawing; landscape gardening; and several special courses, among them a course in colonial cultures intended for the graduates or other persons who intend to go to the Belgian Congo.

The equipment in fields, garden plots, hothouses, collections of plants, and apparatus is unusually good. A diploma of horticulture is issued to graduates. Instruction is free to Belgians; foreign students are charged tuition at the rate of 300 francs a year.

The National School of Horticulture at Ghent (*École d'Horticulture de l'État, à Gand*) gives a 1-year course that in 1926 consisted of 25 lessons each in arboriculture, vegetable culture, and flower culture; 15 each in botany and plant diseases; 10 each in making use of fruit and in landscape gardening. Considerable experimentation is carried on in the school grounds. Most of the classes are held in the evenings or on Sundays.

Fourteen middle schools of agriculture maintained by either private or provincial effort are subsidized from national funds. Eighteen private colleges and institutes have agricultural sections on middle school levels (*Sections moyennes d'agriculture libres*). Eleven subsidized provincial and private schools of horticulture give 3-year courses somewhat similar to those in the two national schools. The schools differ from the sections in that the instruction in the former is mainly agricultural and attended by farmers' sons who intend to return to the farm; in the latter it is mainly general with the work in agriculture secondary in importance. The studies occupy from two to three years. They are open to pupils at least 14 years of age who have completed the 8-year primary school. Many of these institutions have excellent libraries and scientific collections. Most of the schools have model farms.

Eleven subsidized provincial and private schools of horticulture give 3-year courses somewhat similar to those in the national schools of horticulture.

Schools for girls.—Agricultural home-economics schools of the primary grade maintained in some 70 localities give to girls that have just completed the primary school, instruction for 100 hours a year for two years with teachers specially trained for the purpose. In other primary schools, 11 in number, home-economics sections of somewhat more advanced study are subsidized from national funds. In addition ambulant agricultural home-economics schools appeal to young women that have been out of the primary school for some

time and during the four or five months that the schools are in session these students carry out the tasks assigned them in different phases of home economics pertaining to farm life.

Middle agricultural home-economics schools and sections (*Écoles ménagères agricoles du degré moyen*) are subsidized to the number of about 40. The instruction is essentially practical.

Teacher training.—During the triennium 1924 to 1926 the Ministry of Agriculture, after careful study, instituted a new series of normal courses in agriculture. These are of 120 to 200 hours in duration over a 2-year period and usually commence at the close of the Easter vacation. They were carried on in 1930 in 15 localities.

Higher education.—Agricultural instruction on university levels is described in the chapter on higher education.

Other activities.—Through a service of advisors attached to the Ministry of Agriculture much work is done in the way of conferences, short courses, demonstrations, and model lessons, in nearly all phases of agriculture and horticulture.

BIBLIOGRAPHY

- Chambre des Représentants. Session de 1927-1928. Situation de l'enseignement agricole. Rapport triennal (avec annexes) présenté * * * par monsieur le ministre de l'agriculture. Années 1924, 1925, 1926. Bruxelles. F. Van Gompel, Imprimeur-Éditeur, 2, Rue de la Roue. 1928.
- Heyman, H. L'Enseignement technique en Belgique. Lettre-préface de S. M. Le Roi. Bruxelles. Librairie Albert Dewit. 1930.
- International Labour Office. Vocational education in agriculture. Studies and reports. Series K (Agriculture) No. 9. Pages 152-59. London. P. S. King & Son, Ltd. 1929.
- Ministère de l'Agriculture. Office horticole. École d'horticulture de l'État à Vilvorde. Programmes. Bruxelles. Imprimerie Jules Hiclet, 3 Plac de Ninove. 1924.
- Ministère de l'industrie et du travail. Rapport général sur la situation de l'enseignement technique en Belgique présenté aux chambres législatives par M. le Ministre. 1902-1910. Bruxelles. Office de publicité. 1912. Two volumes.
- Province de Hainaut. Congrès international de l'enseignement technique agricole et ménager. Charleroi 16, 17 et 18 Mai 1925. Charleroi. Imprimerie provinciale. 1926. Two volumes.
- Van Horenbeeck, Liévin.—L'Enseignement commercial en Belgique. *In International Review for Commercial Education*, Second series, No. 6, pages 361-77. June, 1929.

CHAPTER VII.—INSTITUTIONS OF HIGHER EDUCATION, RESEARCH, AND CULTURE

UNIVERSITIES

The four universities are: National University at Ghent (Université de l'État, à Gand); National University at Liege (Université de l'État, à Liège); Free University of Brussels (Université Libre de Bruxelles); and the Catholic University of Louvain (Université Catholique de Louvain). The first two, as the names indicate, are public institutions administered and for the most part maintained by the national government; the other two are private (free) institutions.

Higher education, particularly that paid for from national funds, is regulated in much detail by the laws and the royal arrêtés issued to make those laws effective. For the national universities, the laws determine the conditions of national supervision and inspection and the reports to be made to the government; the academic authorities; number and kind of the faculties and the fields of study assigned to each faculty; requirements for admission by either certificate or examination; registration and fees of students, and academic punishments; granting of scholarships and fellowships; degrees that may be conferred and their legal weight and registration; number of examinations and the subjects in each that must be passed to attain a degree, as well as the constitution of the examining juries; classes and salaries and appointments of the professional staff and appointments of professors emeriti; and the language of instruction.

An administrator-inspector, a resident of the city in which the university is located, is appointed by the King to act as inspector particularly in seeing that the programs are carefully observed, and as administrator in supervising the care and maintenance of the university plant. The buildings for a national university are erected by the city in which the institution is located. A report must be made triennially by the ministry to the Parliament on the condition of the universities.

The academic authorities are the rector chosen for a 3-year term from the faculty, secretary, deans of the faculties, academic council made up of the professors under the presidency of the rector, secretary, and the deans. Their duties are fixed by royal arrêté.

Degrees.—The academic degrees granted are of two general kinds, legal and scientific. The legal degrees, 25 in number and described

on pages 96 and 97 are those which confer the right to exercise a profession for which an academic degree is required by law. Moreover, before they have any legal effect they must be confirmed by a special commission sitting at Brussels and composed of two counselors of the court of cassation, two members of the Royal Academy of Medicine, two of the class of letters and two of the class of sciences of the Royal Academy of Sciences, Letters, and Fine Arts, all appointed by royal *arrêté*. The commission must assure itself that any degree presented has been properly granted by an institution which complies with the legal definition of a university, by an organization assimilated to the universities, or by an examining jury set up by the government. Annually at the opening of the courses, the universities, their assimilated establishments, and the establishments for which special examining juries are instituted must furnish the committee the programs of study and a list of the professional staff with the qualifications of each member. At the close of the year they must report the number of hours of effective lessons that were given in each course.

Scientific degrees of many kinds may be granted subject to the prescribed regulations. They confer no rights to practice a profession in Belgium but are evidence of good scholastic training. Foreigners usually study for them.

Women may attain any of the academic degrees and enjoy all the rights pertaining to them, with such exceptions as the law makes in regard to public positions.

Terms.—The two yearly vacations are summer, from the first Saturday in August to the first Tuesday in October, and spring, from the Thursday preceding Easter to the second Tuesday following it. At other times, except for the usual national holidays (see page 31), the universities are in session.

A university is defined by law as an establishment of higher instruction composed of at least four faculties—philosophy and letters, law, sciences, and medicine, with surgery and obstetrics—whose programs include all the obligatory subjects prescribed by law for the examinations in the branches and optional subjects at least equal to double the number of the obligatory. To grant the various engineering degrees the university or the school annexed to it must carry all the subjects required for the degree to be conferred nor may it grant the candidate for civil engineer unless it offers the subjects required for the final degree of civil engineer.

Coming within this definition are the four universities previously named, the faculty of philosophy and letters of the Institute Saint-Louis at Brussels, the faculties of philosophy and of sciences of the Collège Notre-Dame de la Paix at Namur, and the School of Mines and Metallurgy at Mons (Technical Faculty of Hainaut).

Admission to the universities.—The transition from secondary to university studies is formal and carefully controlled by the Ministry

in accord with legal provisions. Article 5 of the law governing admission to universities, as amended June 14, 1930, reads—

ARTICLE 5. No one is admitted to the examination for candidate in philosophy and letters, candidate in sciences for the groups of chemical, geological and mineralogical, biological, geographical, and pharmaceutical sciences, or of candidate in natural and medical sciences who does not justify by certificate that he has followed successfully a course in humanities at least six years and including the rhetoric year; nor to the examination for candidate in sciences for the group of physical and mathematical sciences who does not justify by certificate that he has followed successfully a course of professional studies of at least five years and including the first scientific year, or a course in humanities of at least six years and including the rhetoric year plus the course in mathematics of the first scientific year.

In other words the candidacies in philosophy and letters, sciences, and natural and medical sciences are open generally to graduates of the athénées. In the case of the candidacy for civil engineer applicants must take a preparatory examination, part of which may be omitted if they have completed a 6-year course in humanities.

The administrative mechanism for selecting university students is by a careful process of having all applications sent first to the governor of the Province. They are then transmitted to the ministry and later examined by a jury of five on which official and private schools have each two members. If the applications, or credentials which give the students' training in detail, are satisfactory, admission is granted. For those that do not meet the requirements by credentials, the jury holds two examination sessions, one in July, the other in August.

NATIONAL UNIVERSITIES

The National University at Ghent was originally opened on October 9, 1917. After the establishment of Belgium as a separate government in 1830, it was reorganized by law of September 25, 1835. It now consists of a faculty of philosophy and letters to which are annexed the higher institute of the history of art and archeology and the higher institute of pedagogy; the faculty of law with its special school of commerce; the faculty of sciences; and the faculty of medicine with the higher institute of physical education.

The faculty of philosophy and letters offers six groups of studies: Classical, oriental, romance, and Germanic philology, philosophy and natural law, and history. The groups in the law faculty are also six: Roman law; civil, commercial, private international, and fiscal law; penal law; political and administrative sciences; natural law and the history of law; judicial organization, competence, civil and penal procedure, and notarial law. The 11 groups in the faculty of sciences are: Botanical, zoological, chemical, mineral, and mathematical sciences; physical and mechanical sciences, including astronomy, metallurgy, and the application of chemistry, exploitation of mines,

applications of mechanics, applications of physics, including industrial electricity, and civil constructions. The six groups in the medical faculty are: Anatomic-physiologic or biological sciences, pathology, therapeutics, including toxicology, medical sciences properly speaking, including hygiene, surgery, and obstetrics with legal medicine, and the pharmaceutical sciences.

Besides nearly all of the legal degrees the university grants the scientific degrees of candidate, licentiate, and doctor in (1) history of art and archeology, (2) political sciences, and (3) administrative sciences; the candidate and licentiate in pedagogy; the candidate notary; the general licentiate in commercial sciences; the special licentiate in either commercial, consular, colonial, or financial sciences; and the doctorate in commercial science.

Annexed to the university are the schools of civil engineering, of mines, and of arts and manufactures. All three of these have two divisions made according to levels of instructions: (1) A preparatory school of two years' duration except for civil conductors for which it is one, in which the programs include the mathematical, physical, and natural sciences needed as preparation for special study for the services of bridges and roads; national railroads, marine, and telegraph; or the practice of civil construction, architecture, and industrial arts; and (2) a division of application called a special school. Completion of the preparatory school program of two years is roughly equal to holding the candidate degree of civil engineer.

The special school of civil engineering has seven sections to train, respectively, civil, mining, architectural, and electrical engineers; engineers of civil and naval constructions; and civil conductors. The examination for admission is in two parts corresponding to the two years of training in the preparatory division. The courses are generally three years (one year for civil conductors); the legal degree granted is that of engineer of civil constructions which admits the holder to competitive examinations for positions in the administration of roads and bridges, railroads, marine, and telegraph.

The special school of mines gives a 3-year course to men who wish the legal degree of mining engineer which opens the way to employment in the administrations of mines, railroads, and telegraphs. The special school of arts and manufacture has three sections to train mechanical, chemical, and electrical engineers. Each curriculum is two years except that the electrical engineers may take a supplementary third year. The degrees are scientific.

By law of July 31, 1923, Flemish is the administrative language of the university and in the four main faculties students may choose between the Flemish régime and the French régime. In the former, two-thirds the number of hours for each course are taught in Flemish,

one-third in French; in the French régime, the proportions are reversed. Clinical instruction for the doctorate of medicine and the courses preparatory to mining engineer are given in Flemish. Instruction in the schools of civil engineering and of arts and manufactures is in both languages.

The city of Ghent annually votes 16,000 francs to aid worthy students, who are not well-to-do, to carry on their studies at the university.

The National University at Liege, founded in 1816, was also reorganized in 1835. It comprises five faculties: Philosophy and letters to which the higher institute of the history of art and archeology, the higher institute of the history of oriental literatures, and the higher institute of pedagogy are annexed; law, with its special school of commerce; sciences; medicine with surgery and obstetrics; and the technical faculty.

The university grants all but one or two of the legal degrees and for them offers practically the same subjects as are given at the University of Ghent, though the organization of the instruction is somewhat different.

The technical faculty or "the special school of arts and manufactures and of mines" groups its students in six sections: Mines, chemistry, mechanics with a sub-section of aeronautics, electricity, metallurgy, and civil constructions with a sub-section of colonial construction. Admission to all of these, except the chemistry section, is to holders of the legal or scientific degree of candidate engineer, or the passing of an examination that requires equivalent training. The chemistry section accepts only holders of the degree of candidate chemical engineer granted by the faculty of sciences of the National University at Liege. The technical faculty confers as a legal degree, only that of civil engineer of mines; its other degrees are scientific. The curricula are three years in duration.

The scientific degrees awarded by the university and its various institutes are the candidate, licentiate, and doctorate in (1) history of art and archeology, (2) history of oriental literatures, (3) pedagogical sciences, (4) administrative sciences, (5) political sciences, (6) social sciences; licentiate, licentiate of the higher degree, and doctorate in commercial sciences; the licentiate in commercial sciences combined with (a) consular, (b) colonial, or (c) financial sciences; candidate and doctorate in physico-chemical sciences; doctorate in anthropology; geological engineer; medical hygienist; doctorate in pharmaceutical sciences; candidate engineer; engineer in (a) civil construction, (b) mines, (c) mechanics, (d) méchanics, aeronautical section, (e) electricity, and (f) metallurgy; candidate chemical engineer; chemical engineer; and engineer of colonial constructions.

FREE (PRIVATE) UNIVERSITIES

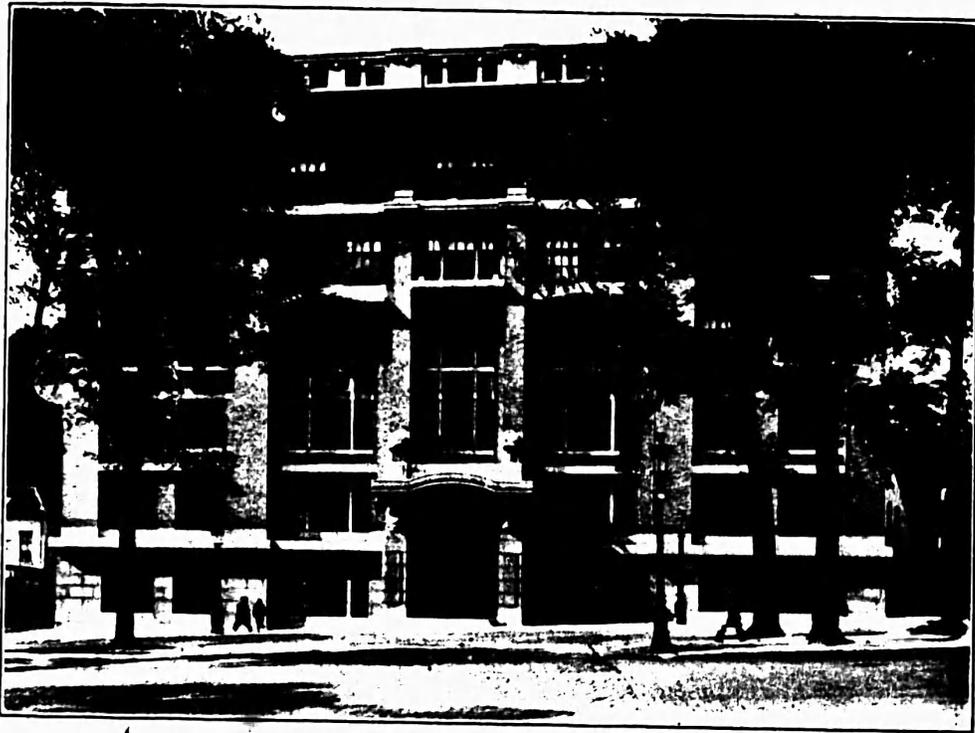
The *Free University of Brussels* was founded in 1834. Its entire control is vested in its council of administration made up of 12 to 15 permanent members chosen for 10 years from among benefactors of the university; the rector; the two past rectors most recently in office; the administrator; a delegate chosen for one year by the ordinary professors of each faculty; a common delegate from the school of political and social sciences and the school of commerce; the burgo-master and the échevin of public instruction of Brussels; a member of the commission of public assistance of Brussels; a member of the provincial council of Brabant; and a delegate of the alumni of the university. Few institutions have so wide a range of interests represented in the governing body.

The active daily working committee of the council is the *bureau* composed of the president and the vice-president of the council, the rector and the administrator of the university. Each faculty or special school is composed of its ordinary professors who elect yearly the president and the secretary of the faculty, arrange its regulations for the approval of the administrative council, and elect a delegate to the council. The extraordinary professors and the persons in charge of courses (*chargés de cours*) may attend faculty meetings but do not vote.

The rector is elected annually by the ordinary professors from among their number. He is the general administrative officer and begins his term of office on the first of October of each year.

An academic council consisting of the rector, two past rectors, the presidents of the faculties, the delegates that represent the faculties and schools in the administrative council, and a delegate of the assistants, studies on its own initiative or at the request of the administrative council all questions relating to higher education and proposes such changes as it thinks suitable; in June of each year it arranges the programs for the following year.

The university has five faculties: Philosophy and letters, law with a section of maritime law; sciences; medicine; and applied sciences; and three schools which confer only scientific degrees: School of political and social sciences, school of commerce, and school of pedagogy. It is in process of changing to the régime of degrees set up by the law of May 21, 1929, and in its five faculties now prepares students for most the legal degrees. In addition the faculties confer: (1) Certificate of literary studies for two years of work, two oral examinations, and a dissertation, (2) licentiate in maritime legislation after one year of study, on commercial engineers of the University of Brussels, (3) doctorate in maritime law on doctors of law that have taken the examinations of the section of maritime law, (4-5) licentiate and doctorate in physiological sciences, (6-7) licentiate and doctorate



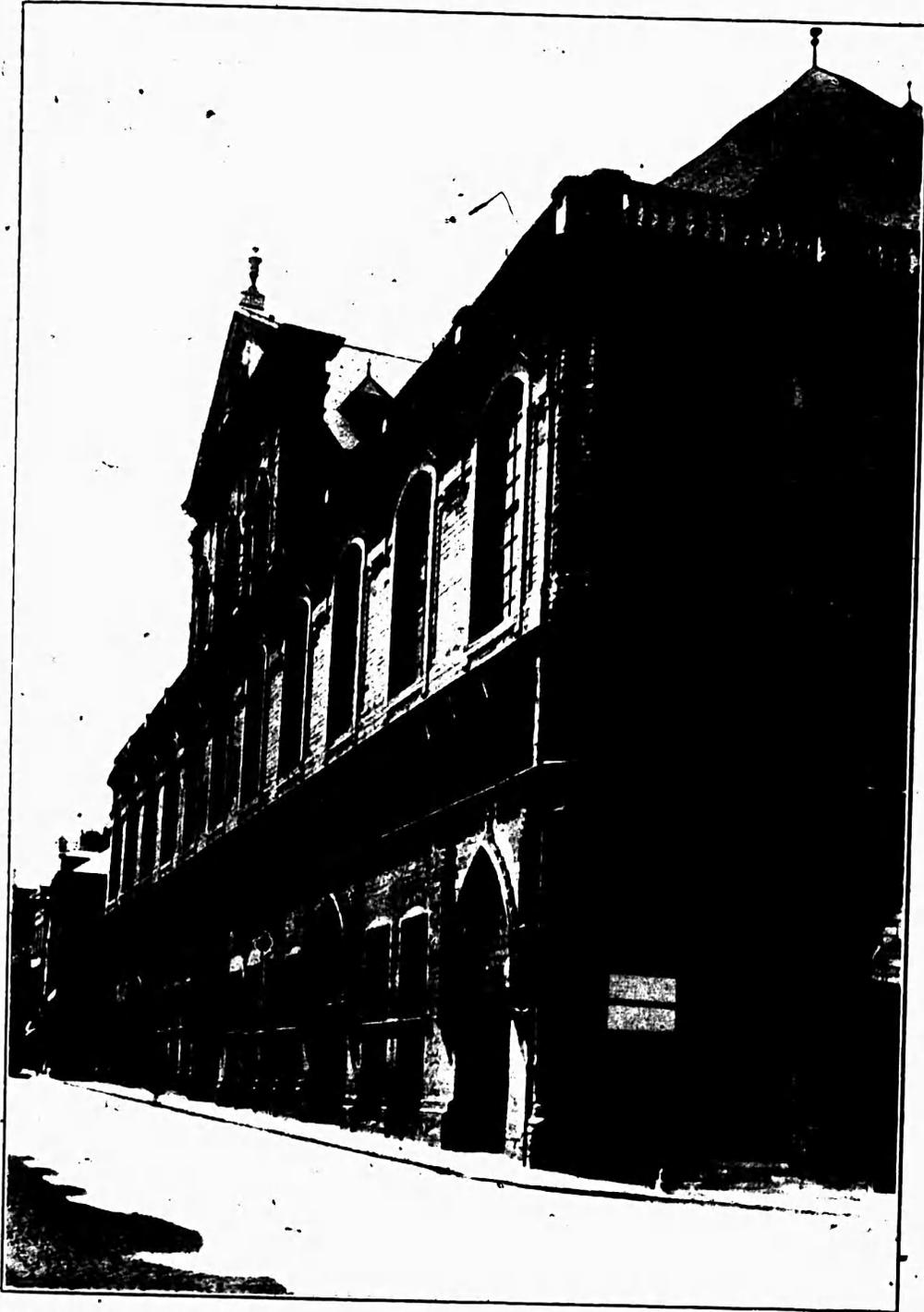
130-1

SCHOOL OF MEDICINE, UNIVERSITY OF BRUSSELS



NEW LIBRARY BUILDING AT THE UNIVERSITY OF LOUVAIN

130-2



CLOTH HALL, BUILT IN 1307, BECAME THE SEAT OF THE UNIVERSITY OF LOUVAIN
IN 1425. NOW THE MAIN ADMINISTRATION BUILDING OF THE UNIVERSITY

130-3

in natural history, (8-9-10) candidate, licentiate, and doctorate in chemical sciences, (11) doctorate in pharmaceutical sciences, (12) medical-hygienist, (13-14) engineer in aeronautical construction and mechanical-electrical engineer, open only to holders of the legal degree of engineer, and (15) geological engineer, open only to holders of the degree of civil engineer of mines.

The school of political and social sciences grants the licentiate in either social, political, economic, or colonial sciences, or finance after two years of study and two examinations; and the corresponding doctorate not less than two years later, on an examination and dissertation that has been explained in an interrogation and defended in a public test.

The school of commerce confers the degree of commercial engineer after four years of study and four examinations together with proof that the candidate has a good knowledge of foreign languages.

The school of pedagogy offers subjects leading to the candidate, licentiate, and doctorate in pedagogy; the first requires two years to attain; the second, one additional year, while the doctorate is granted in not less than one year after the licentiate.

The Catholic University of Louvain is the old university of Belgium. Founded on December 9, 1425, it had to some extent proved its worth when in 1432 the magistrate of Louvain placed at its disposal a part of the old Cloth Hall (Halles aux Drapes) a building erected in 1317, still standing and used by the university.

The institution is under the direction of the Catholic bishops of Belgium who form its administrative council and are represented in its administration by the rector (rector magnifique). He and the vice-rector, secretary, deans of the faculties, rectoral council, council of the vice-rector, presidents of the university colleges, and the academic senate make up the academic authorities.

The faculties are theology; philosophy and letters; law; medicine; and sciences with special schools of mines, civil engineering, arts and manufactures, architecture and electricity, the institute of agronomy, and the school of brewing. In addition, there are the school of political and social sciences, the higher school of commerce, and the institute that gives courses preparatory to the special schools and to the institute of agronomy.

Affiliated with the university are the Collège des Théologians, dit du Saint-Esprit; Collège du Pape Adrien VI; Collège Juste-Lipse; Collège Américain; Séminaire Léon XIII; and for girls the Collège d'Arras, and the Abbaye Sainte-Gertrude.

Besides the legal degrees, the faculties and schools confer the following scientific distinctions:

1 Theology: Bachelor, license, doctor and master in theology or in canonical law; license and doctor in Semitic languages.

Law: Special doctorate in either Roman or modern private law; doctor in penal or fiscal and financial sciences; and license as notary.

Philosophy and letters: Candidate, license, and doctor in historical sciences, or archeology and the history of art; license and doctor in Roman literature, Dutch literature, English or German, or in Oriental languages.

Medicine: Special doctor of medicine; expert chemist; and doctor in pharmacy.

Sciences: Candidate and doctor in geographical sciences, and pure or applied chemistry.

School of political and social sciences: License and doctor in political and social sciences, or political and diplomatic sciences, or economic sciences. The school of criminal sciences grants a doctorate in that subject.

Higher school of commerce: License in commercial sciences; license of the higher grade in commercial and financial, or commercial and consular, or commercial and colonial sciences; doctor in commercial sciences.

School of pedagogy: Candidate, license, and doctor in pedagogy and psychology applied to education.

Higher institute of philosophy (School of Saint Thomas of Aquinas): Bachelor, license, doctor, and agrégé in philosophy according to Saint Thomas of Aquinas.

Special schools of mines, civil engineering, arts and manufactures, architecture, and electricity: Degrees in all the specialties.

Institute of agronomy: Legal degrees of engineer in agronomy, and license in agronomic sciences; scientific degrees of agricultural or forestry engineer, and expert agricultural chemist of the University of Louvain.

School of brewing: Engineer brewer.

Saint Louis Institute, at Brussels, was founded in 1858. Its faculty of philosophy and letters and its higher school of commerce, established in 1925, give instruction on university levels. The candidate in philosophy and letters granted by the former is a legal degree. The school of commerce offers only evening courses and after three years of study grants regular students the license in commercial sciences. New sections will permit these licentiates to take out the higher license in either commercial and financial, or commercial colonial sciences. A preparatory course is offered to fit students for the entrance examination.

Collège Notre-Dame de la Paix has offered higher courses in philosophy and sciences since 1832. It is directed by the Jesuits and by

the law of May 25, 1929, has complete autonomy. It grants the legal degrees of candidate in philosophy and letters, and in sciences (but not in mathematical or physical sciences) and in natural and medical sciences.

School of Mines and Metallurgy at Mons (Technical Faculty of Hainaut) is in a sense a provincial institution established in 1836 for the province of Hainaut, the most industrial section of Belgium. Its administration is by a council presided over by a member of the permanent deputation of Hainaut and made up of 14 other members chosen by the permanent deputation, the government, the city of Mons, and the faculty. The direction and conduct of the school is in an academic council consisting of the administrator-president, the dean elected for three years, and two faculty members elected by the faculty for two years.

The school delivers the legal degrees of candidate civil engineer, and civil engineer of mines; and the scientific degrees of mining engineer and metallurgical engineer. To its graduate engineers or those of other Belgian or foreign schools it gives the degree of electrical engineer after two years of complementary study; on the mining engineers after one year of additional study it confers the degree of geological engineer. A section for electromechanical construction engineers is being formed.

Of this school the University Foundation reports:

A complete recasting of the methods of instruction in the school . . . took place in 1919 after the armistice. The school put in practice and continues to use with unceasing success the principles of reducing oral instruction by stopping descriptions in every way possible, and extending the practical exercises and laboratory work under the conduct of the professors themselves.

The studies in applied sciences in the last three years rest on a solid scientific substratum acquired in the two years called the candidature. For all the industrial operations needing applications of mechanics and electricity, these two sciences form the foundation of the instruction; no engineer may leave the school without having practiced, besides the exercises and laboratory tasks peculiar to the studies he is taking, work in electrotechnical measurements, applied mechanics, and the technics of heat.

Finally, to respond to a legitimate desire often expressed, the school has arranged in the division of time a large place for general culture studies; an hour a week is given to instruction and conferences in general history, principles of law, history of art, etc.; each year the young people choose at least two of these courses and follow them regularly.

The institution is unusually well equipped for carrying on its work.

The four universities are not, in American terms, large. They range in student body from some 1,600 for Ghent to 3,750 for Louvain. Brussels has an instructional staff of about 280; Louvain, of

175. The statistical data for enrollments and number of higher degrees awarded are as follows:

TABLE 1.—Number of students in the faculties of the four universities in 1928-29 and legal degrees granted in 1928

Faculties and schools	National			Free			Total students	Legal degrees granted 1928
	Ghent	Liege	Total	Brussels	Louvain	Total		
1	2	3	4	5	6	7	8	9
Philosophy and letters.....	176	324	500	316	659	974	1,474	71
Sciences.....	116	426	542	406	466	871	1,413	24
Sciences—candidate engineers.....		308	308		146	146	454	
Law.....	102	208	310	278	521	799	1,109	280
School of commerce.....	58	392	450	150	206	356	806	
Medicine.....	168	360	528	437	862	1,299	1,827	324
Technical schools.....		440	440	214	720	934	1,374	107
Preparatory.....	559		559				559	
Special.....	471		471				471	
Schools of political and social science.....				158	58	216	216	
School of pedagogy.....				93		93	93	
Theology.....					118	118	118	
Grand total.....	1,660	2,458	4,108	2,051	3,755	5,806	9,914	806
Foreigners.....	625	752	1,377	355	542	897	2,274	
Total Belgians.....	1,025	1,706	2,731	1,696	3,213	4,909	7,640	

The 806 degrees reported were of the higher grades such as the doctorate or engineer; the number of aspirants was 995. In the four years preceding 1928-29, the totals of enrollments in the universities were: (1924-25) 9,484; (1925-26) 8,988; (1926-27) 9,158; and (1927-28) 9,371. The number of persons upon whom the degrees were conferred has shown a considerable decrease: 1,024 in 1925; 955 in 1926; and 871 in 1927.

As for the assimilated institutions, the Collège Notre-Dame de la Paix enrolled 93 students in the faculty of philosophy and 80 in the faculty of sciences in 1929-30. The technical faculty of Hainaut for that same year had 165 and granted 30 engineering degrees. No data are at hand for the Institute Saint Louis.

Note that the proportion of foreign students is high, 22.9 per cent of the total, and that it is particularly so in the national universities where one in every three comes from a country other than Belgium.

These brief descriptions close the account for the four universities and the assimilated institutions. Two other organizations give higher general training, the Institute of Higher Studies of Belgium, at Brussels (Institut des Hautes Études de Belgique), and the School of Higher Studies at Ghent (École des Hautes Études à Gand).

The Institute of Higher Studies of Belgium, first founded in 1894, was reorganized in 1919 and now gives general instruction above university levels, instruction in subjects not included in the university programs, and instruction for the development of general public culture. It is organized in eight sections: Mathematical,

mechanical, and astronomical sciences; physics and chemistry; natural science; history and philology with a subsection of archæology and oriental languages; social, political, economic, and juridical sciences with a colonial subsection; philosophical sciences; arts and letters; and the science of labor, or ergology. The last section has grown rapidly and become the school of ergology with four divisions: General ergology; professional orientation; psychotechnics, industrial psychology, and professional selection; and the scientific organization of labor.

The School of Higher Studies at Ghent was originally founded in 1923 to give higher instruction through the medium of the French language in those courses that were taught only in Flemish at the National University in Ghent. This was unnecessary after the law of April, 1930, and the school replaced those courses with other university courses mostly connected with the faculties of philosophy and letters and of sciences. In addition it carries on series of courses and conferences in subjects that because of their newness or special character are not generally in the university programs. Annexed to it is a school of higher commercial studies that follows the official programs and is inspected by national authorities; it confers the license and higher license in commercial sciences. There is also a higher institute of the history of art and archeology that grants the license in those subjects. This and a section of political sciences, follow the university programs of study.

HIGHER EDUCATION IN AGRICULTURE

Besides the institute of agronomy at the University of Louvain, four higher institutions give instruction in subjects pertaining to agriculture and animal husbandry. They are: The National Institute of Agronomy at Gembloux (Institut Agronomique de l'État, à Gembloux) with which the national experiment station (Station Agronomique de l'État) is connected; the National Institute of Agronomy at Ghent (Institut Agronomique de l'État, à Gand); the School of Veterinary Medicine (École de Médecine Vétérinaire) at Cureghem-Bruxelles; and the National Higher Normal Institute of Agricultural Home Economics at Laeken (Institut Normal Supérieur d'Économie Ménagère Agricole de l'État, à Laeken).

The National Institute of Agronomy at Gembloux was created by law of July 18, 1860, about the time that the National Government of the United States was entering upon the policy of encouraging the State schools of agriculture and mechanic arts. Among the celebrated agricultural schools of that time were the school at Grignon, near Versailles in France, and the Academy of Hohenheim in Wurtemberg, Germany. To these the Belgian authorities turned for information.

The site for the new institute was finally fixed at Gembloux, about 40 kilometers from Brussels, where the buildings and grounds of an old abbey could be had. The courses of study were set at three years leading to the degree of agricultural engineer. Throughout its 70 years of life the institute has ranked as one of the important schools of its kind in the world.

The instruction is now organized in (1) studies of two years for the licentiate in agronomical sciences intended to fit young men to direct rural undertakings, and (2) studies of four years for the degree of agronomical engineer in any of the following sections: Colonial, water and forests, horticulture, or rural life; and agricultural industries or agricultural chemist. Admission is to graduates of the humanities courses of the athénées, passed upon by a jury set up for that purpose, or by submitting to an entrance examination.

Connected with the institute is the *national station of agronomy*, an agricultural experiment station which now includes stations of agricultural chemistry and physics, milk, phyt pathology, entomology, rural life, plant improvement, and forestry. These conduct experimental research and generally work to improve agriculture and animal husbandry in the Kingdom.

The National Institute of Agronomy at Ghent uses Flemish as the language of instruction and offers courses in natural sciences, agriculture, horticulture, silviculture, plant diseases, microbiology, breeding, agricultural industries, agricultural engineering, agricultural architecture, rural economy, and law and economic sciences. It grants the licentiate (2 years) and the degree of agronomical engineer in several specialties after four years of study. The requirements for admission are essentially the same as those for the institute for Gembloux.

The School of Veterinary Medicine, founded in 1832, admits as regular students holders of the degree of candidate in natural sciences. Since two years of university study are required to attain the candidate, the students begin in the school on a fairly high level. It confers the legal degrees of candidate in veterinary medicine after one year of study, and of doctor after three additional years. Besides the legal degrees it confers on auditors an honorary degree that carries no right to practice veterinary medicine in Belgium. The teaching staff is small, the school is well equipped, and the work is of high scientific grade.

The National Higher Normal Institute of Agricultural Home Economics at Laeken prepares teachers for the lower schools of home economics.

All of these higher agricultural institutions are under the direct control of the Ministry of Agriculture.

HIGHER COMMERCIAL AND TECHNICAL EDUCATION

We have already taken account of the various schools of commerce connected with the universities, the technical faculty of the National University at Liege, and the technical faculty of Hainaut. The country needs many strong workers in commerce and in addition to the facilities already mentioned for training in that line, there are the Higher Institute of Commerce at Antwerp (Institute Supérieur de Commerce, à Anvers); Saint Ignatius Institute at Antwerp (Institut Saint-Ignace, à Anvers); School of Higher Commercial and Consular Studies at Liege (École des Hautes Études Commerciales et Consulaires, à Liège); Higher Commercial and Consular School at Mons (École Supérieure Commerciale et Consulaire, à Mons); and the Higher Institute of Commerce at Mons (Institute Supérieur de Commerce, à Mons).

All five come within the purview of the Ministry of Industry and Labor in so far as they are connected with the National Government. The first named is strictly a national institution. Saint Ignatius is free but inspected and subsidized by the ministry and the minister's delegate assists at the examinations and signs the diplomas. The school at Liege, also free, is aided by the National Government, the Province, and the city of Liege, and accepts national inspection. The higher school at Mons is free but submits its programs to the ministry for approval and is inspected by it. The higher institute at Mons is a provincial institution subject also to national inspection.

The Higher Institute of Commerce at Antwerp, founded in 1852, and given legal status in February, 1923, had by 1930 enrolled a total of 13,735 students of whom 6,587 were from foreign countries. Of the 13,735 enrollment, 10,472 were regular students and only 2,424 of these (23 per cent) were given degrees. It grants the license in commercial sciences after two years of study, and the license in special fields of commerce (consular, colonial, financial, or maritime) after an additional year.

Saint Ignatius Institute (1901) at Antwerp offers courses about the same as those of the other higher schools of commerce in Belgium but in addition to the two licenses it confers the degree of doctor in commercial science, and admits engineers and doctors in certain fields to the second (specialized) license if they pass but one examination. It has an internat for resident studies.

The School of Higher Commercial and Consular Studies (1898) at Liege was set up by some business and commercial associations. Besides granting the two licenses in commercial sciences, it maintains a preparatory year for aspirants to its courses.

The Higher Commercial and Consular School at Mons also has the preparatory year; it grants the doctorate as well as the license and

the higher license. A colonial section is annexed to the third year and third-year students that wish to become teachers may elect a course in pedagogy.

The Higher Institute of Commerce at Mons gives a 3-year course leading to the degree of commercial engineer. Its purpose is to train workers in foreign commerce and to that end it teaches English and German thoroughly, Spanish and Russian to a lesser degree, and gives courses in international commerce, movement of goods, transportation, receiving and sending cargoes from seaports, the technique of industries in export countries, and other subjects relative to export and import trade.

Technical education.—The schools for giving higher technical instruction are: (1) Higher Industrial School of Ghent (École industrielle supérieure de Gand); (2) Higher Industrial School annexed to the National Professional Museum at Morlanwelz (École Industrielle supérieure annexée au Musée professionnel de l'État, à Morlanwelz); (3) University of Labor at Charleroi (Université du Travail, à Charleroi); (4) Higher Industrial School of La Louvière (École industrielle supérieure de La Louvière); (5) Higher Industrial School at Mons (École industrielle supérieure, à Mons); (6) Higher Industrial School of Liege (École industrielle supérieure de Liège); (7) Gramme Institute of Liege (Institut gramme de Liège); (8) Central School of Arts and Crafts at Auderghem (École centrale des Arts et Métiers, à Auderghem); (9) School of Arts and Crafts of Erquelines (École d'arts et métiers d'Erquelines); (10) School of Arts and Crafts of Pierrard-lez-Virton (École des arts et métiers de Pierrard-lez-Virton); (11) Technical and Higher School of Brewing at Ghent (École Technique et supérieure de brasserie (St-Lievin), à Gand); (12) Higher Institute of Fermentation (Institut supérieur des fermentations, à Gand); and (13) the Higher School of Textiles at Verviers (École supérieure des textiles de Verviers).

The first two of these are national schools, the third is provincial. Numbers 4, 5, 6, and 13 are communal institutions; the others are free schools subsidized by the nation.

The higher industrial schools are open to students at least 17 years of age that pass an examination on secondary technical school levels in the special subjects they desire to study further. The courses are of three or four years' duration and include sections in mechanical electrical, chemical, and metallurgical industries; civil and naval constructions; mining; weaving; spinning; dyeing and printing goods; and designing fabrics. It is expected that the graduates will be fitted to hold positions as foremen, shop managers, bureau chiefs, etc.

The schools of arts and crafts offer three or four years of study to graduates of secondary schools or those able to pass an examination that calls for equivalent training. They specialize in such work as bridges, timber constructions, vehicles, motor machines, and electri-

cal apparatus. The degrees conferred are the engineer of arts and crafts, and technical engineer.

The two schools of brewing in Ghent are open to young people that pass an entrance examination similar to that required for the scientific sections of the universities. The instruction is at once theoretical and practical and includes laboratory work in general and analytical chemistry, microbiology, and experimental brewing. The 3-year course leads to the degree of engineer of industries of fermentation.

The Higher School of Textiles at Verviers (1894) confers the degree of engineer for the completion of the course, now of four years. It is planning to extend the course an additional year so that graduates may attain the legal degree, civil engineer of textile industry. Admission as a regular student calls for graduation from the scientific division of an athénée or equivalent training. The school has complete equipment for weaving, spinning, dyeing, and printing, as well as physical, chemical, and electrotechnical laboratories. As a part of the final examination the students are expected to lay out a project for establishing a textile shop.

The University of Labor at Charleroi opened in 1903 and for 1903-04 enrolled 110 students that stayed through the year. The enrollment increased rapidly to 2,062 in 1917-18, then 2,604 in 1924-25. For 1928-29, it was 2,562.

It is organized in several divisions. Division A, the higher industrial school, offers 4-year courses in the sections of mechanics, electricity, civil constructions, and chemistry; 3-year courses in the sections of mines, metallurgy, commercial sciences, and modern languages (English, German); and courses of two years for the section of apparatus and modern language (Spanish). Admission is to students at least 18 years of age that have passed an examination on the corresponding special subjects in the secondary technical schools. Leaving examinations are held by a jury chosen by the council of administration. The successful students are granted brevets of capacity (brevet de capacité) which carry for the mechanical industries the title of technician in bridges, carpentry, vehicles, or stationary and locomotive engines; technician in electricity for the electrical industries; and for other lines of training, technician in civil constructions, managers of mines, chemistry, overseer in metallurgy, furnisher of tools (ouilleur), correspondent in foreign languages, and brevet of capacity in commercial sciences.

Division B, the professional day school, admits students between the ages of 13 and 18 that have completed the sixth year of the primary school. The courses are two or three years in duration, are on secondary levels, and in some cases preparatory for division A. Division C, the professional evening courses are also on secondary school levels.

Division D, the special school of technicians, requires for admission the passing of an examination which only young people that have completed the second (next to the highest) class of an athénée or the 1-year preparatory section of division D itself, may try. The duration of studies is three years at the rate of 45 hours a week from September 15, to July 15. The courses are grouped in five sections: Bridges, carpentry, and vehicles; stationary and locomotive engines; construction of electrical equipment; exploitation of electrical energy; chemical industries; and civil constructions. Graduation from each of these is marked by the degree of technical engineer specialist in the section in which the studies were pursued.

Five other divisions dealing respectively with completion and temporary courses; correspondents in the French language and aides in pharmacy; industrial documentation and libraries; industrial experimental laboratories; and the museum and bulletin of technical education, give instruction that may not properly be considered as of university status. To these are added also the school for workers on railroads, courses in administrative law and police, and normal courses for teachers and aspirant teachers in technical schools.

COLONIAL INSTITUTIONS

The Belgian Congo with an area of 918,000 square miles and a population of 8,700,000, only about 26,000 of which are Caucasians, naturally plays a large part in the lives of the Belgian people. It is administered by the Ministry of the Colonies and the minister is president of the Colonial Council of 15 members, 8 appointed by the King, 3 by the Senate, and 3 by the Chamber of Representatives. The Congo is divided into 22 administrative districts grouped in 4 Provinces. At the head of each district is a commissioner, and of each Province a governor. The chief executive is the governor general assisted by several vice governors general.

Administering this territory and carrying on a considerable trade with it calls for a constant supply of men trained not only in general in those fields but with considerable special instruction to prepare them for the conditions, unusual to them, that they will find in the Belgian Congo. The more important institutions are the Colonial University at Antwerp (Université Coloniale, à Anvers) and the National School of Tropical Medicine (École de médecine tropicale de l'État).

The Colonial University (February 11, 1920) is a rather striking institution, one of the very few of its kind in the world. Its purpose is to develop self-reliant, self-controlled men for the national public service in the Congo. To do that it selects annually by competitive examination about 20 young men between the ages of 18 and 22, graduates of athénées, who contract to spend at least three years in the

Congo service after graduation. The course is four years; the first two are largely general instruction. The subjects for the first are English, Flemish, French, the native language Lingala, and general linguistics; ethnography, psychology, and general biology; physical and economic geography of the Belgian Congo and of Africa; political and social economy; cartography; public law, encyclopædia of law; and the history of European civilization. The second year is somewhat more specialized though the training is still fairly general, again the modern languages, Lingala, and a second native tongue—Kiswahili; public law, physical and economic geography of the Congo and Africa, and political and social economy. To these are added the history of the formation of colonial empires and especially of the Belgian Congo; logic and methodology; and the botany, agriculture, and ethnography of the Congo. During the third year most of the students are in the army for their compulsory military service. There they are kept ordinarily in one unit, are given special instruction, and are required to report occasionally to the university. The fourth year is highly specialized: Lingala, Kiswahili, and Bantu linguistics; history of systems of colonization; economic, financial, and administrative accounting régimes of the colony; congolian penal law, comparative colonial law; indigenous politics; economic geography of the Belgian Congo and Africa; African zoology; tropical hygiene; and ordinary medicine. The Flemish students must study foreign literatures; the French students, Flemish literature.

Besides these, the three years of instruction at the school include courses and conferences in typewriting, history of Christian missionaries in the Congo, history of Islam, practical courses in posts and the bush; photography, physical education, organization of public force, deontology, technology of indigenous industries, drawing, practical agriculture, gardening, defense against incendiaries, automobile driving and technics, and statistics and demography. Moreover, former colonials frequently hold conferences with the students.

Since the student body is not usually more than 60 in number at any one time, the institution is a modified internat; most of the boys live in the dormitory which they themselves manage. At all times they are given considerable freedom and particularly during the last year they are placed largely on their own responsibility, in the belief that since they are to be administrators they must be mainly self-controlled and self-reliant before they go to the Congo. At graduation, appointment to the service is automatic. The degree is the "diploma of the faculty of political and administrative sciences of the Colonial University."

Attached to the university is a commercial section to train for private careers in the colony. Applicants for the entrance examination must be at least 18 years of age and must have completed the

second class of the athénée or equivalent training. They pursue courses similar to those given the regular students but are granted no degree on graduation. They are employed by business firms that carry on trade with the colony.

The National School of Tropical Medicine (1906) in its higher sections gives physicians, veterinarians, and pharmacists before they go to the Congo a series of lessons and practical exercises extending over four months in (1) protozoology and hematology, (2) medical entomology, (3) exotic pathology, (4) tropical hygiene, and (5) tropical helminthology, bacteriology, and dermatology. A lower section offers a summary of medical information for sanitary agents, workers in hospitals, and missionaries.

SCHOOLS FOR NATIONAL DEFENSE

These two institutions, the Military School (École Militaire) and the School of War (École de Guerre) are administered by the Ministry of National Defense. Admission to the Military School is by strict physical and mental examination. It prepares officers of infantry, cavalry, and the transport corps in two years of study under an internat régime. Officers of artillery and engineering pursue a similar two years and then as sublieutenants go to the annexed school of application for a further two and one-half years in a modified internat régime after which they are definitely assigned to military duty.

The School of War is more advanced. Men that have had some years of practical military service come to it to be prepared to serve as intelligent aides to the command either in the general staff or in troop service or to hold places of high command. Besides the purely military instruction they follow a group of nonmilitary courses including languages, to strengthen their general training.

OTHER INSTITUTIONS OF RESEARCH AND CULTURE

The title of the ministry for public education is the "Ministry of Sciences and Arts," a title that is really descriptive of this branch of the executive for the ministry handles much more than merely organized instruction in schools. One of its divisions, the direction of higher education and sciences, which carries on the ministry's relationships with the universities and other higher institutions that come within the scope of its activities, deals also with the national scientific institutions which include the Royal Observatory, Royal Meteorological Institute, Royal Library, Royal Museum of Natural History, the general archives of the Kingdom at Brussels and the national archives in the Provinces. This does not exhaust the list of the direction's activities by any means; other important matters such as intellectual agreements with foreign countries, scientific subsidies and

encouragements, publication of the National Bibliography, etc., are part of its work.

A major division of the ministry is the Administration of Fine Arts, Letters and Public Libraries. Among the many organizations and institutions with which it deals are the Royal Academy of Fine Arts at Antwerp; the royal museums of painting and sculpture and those of decorative and industrial arts; the royal conservatories of music at Brussels, Ghent, Antwerp, and Liege; Royal Academy of Sciences, Letters, and Fine Arts; Royal Academy of Flemish Philology and Literature; the Royal Academy of French Languages and Literature; and Royal Commission of History. Again, this is not a complete list.

Other ministries have connected with them a number of institutions such as the National Botanical Garden, at Brussels (Ministry of Agriculture); the Geological Service of Belgium (Ministry of Industry and Labor); and the Royal Colonial Institute, and the Museum of the Belgian Congo (Ministry of the Colonies).

These organizations and institutions, for none of which we attempt any special account, are at work on high levels to aid in the advancement of knowledge and to increase generally the learning and culture of the Belgians. They are not for the most part engaged in active instruction, as are the universities and higher schools, but they are strong influences in the life of the people and their existence in large numbers together with the general and special school system marks Belgium as among the advanced nations of the world.

BIBLIOGRAPHY

- Berta, J., et Vandeveld, Ernest. Code des lois politiques et administratives coordonnées avec des annotations tirées des lois, des arrêtés royaux et ministériels, des circulaires et de la jurisprudence administrative et judiciaire utiles à leur interprétation. Tome premier. Constitution et lois organiques. Troisième édition, revue et augmentée. Bruxelles. Établissements Émile Bruylant. 67, rue de la Régence. 1930.
- Capart, Jean. Le rôle social des musées. 1930.
- Destrée, Jules. *Ed.* Annuaire général des beaux-arts de Belgique. I. Juillet 1929 à juin 1930. Bruxelles. Édition Aryenne, 1930.
- Dubois, M. E. Institut Supérieur de Commerce d'Anvers, 1852-1927. Anvers. L'Imprimerie Labor. 1928.
- Duésberg, Jules. Liège et son Université. Liège. Imp. G. Thone. 1929.
- Écoles nationales de chemins de fer. École de Charleroi. Université du travail. Règlement programme. Charleroi. Imprimerie provinciale. 1930.
- Fondation Universitaire. Les institutions d'enseignement supérieur et de recherches en Belgique. 1930. Ixelles-Bruxelles. Des presses de J. Vromans. 1930.
- Neuvième rapport annuel. 1928-29. Bruxelles. Impr. de l'Office de Publicité. 1930.
- Fonds National de la Recherche Scientifique. Deuxième rapport annuel. 1928-29. Ixelles. Imp. J. Vromans. 1929.

- Huysmans, Cam. Situation de l'enseignement supérieur donné aux frais de l'État. Rapport triennal présenté aux chambres législatives de 28 décembre 1925. Années 1919, 1920 et 1921. Bruxelles. Anciens Établissements d'Imprimerie Th. Dewarichet, rue du Bois-Sauvage, 16. 1928.
- Institut Agronomique de l'État à Gembloux. Extrait des règlements. Bruxelles. Imprimerie E. Heyvaert. Rue de la Victoire, 102. 1920.
- Institut Supérieur de Commerce d'Anvers. LXXV^e Anniversaire (4 et 5 mai 1928). Anvers. Imprimerie J. E. Buschmann.
- L'Institut Agricole de l'État à Gembloux. 1860-1910. Bruxelles. Imprimerie Scientifique. Charles Bulens, éditeur. 75, rue Terre-Neuve. 1910.
- L'Université de Louvain (1425), Origine et histoire caractéristiques, organisation, diplômes et grades, frais de cours, conditions de séjour et vie estudiantine. Louvain. Boulevard de Jodoigne. 1923.
- Ministère des sciences et des arts. Loi sur la collation des grades académiques et le programme des examens universitaires, Bruxelles. Imp. Moniteur belge. 1929.
- Loi modifiant les articles 5, 10, et 12 de la loi du 10 avril 1890-3 juillet 1891 sur la collation des grades académiques et le programme des examens universitaires. Bruxelles. Imp. du Moniteur belge. 1930.
- Application des articles 5 à 12 de la loi du 10 avril 1890-3 juillet 1891 sur la collation des grades académiques modifiés par la loi du 14 juin 1930. Jury d'homologation des certificats d'études moyennes et d'études moyennes et d'épreuves préparatoires aux grades académiques. Arrêté royal portant règlement organique. Bruxelles. Imp. du Moniteur belge. 1930.
- Loi modifiant l'article 9 de la loi du 21 mai 1929 et la loi du juin 1930 sur la collation des grades académiques en vue d'instituer une candidature en sciences préparatoire à la médecine vétérinaire. Bruxelles. Imp. du Moniteur belge. 1930.
- Province de Hainaut. Université du travail, Charleroi. Rapport de la direction. (Art. 24 du règlement organique.) Année scolaire 1928-1929. Charleroi. Université du travail. 1929.
- Année scolaire 1927-1928.
- Année scolaire 1926-1927.
- Diplômes délivrés en 1929-1930. Charleroi. Imprimerie provinciale, 1930.
- Division A. École industrielle supérieure. Règlement programme. Charleroi. Imprimerie provinciale. 1920.
- Division C. Cours professionnels du soir. Règlement programme. Charleroi. Imprimerie provinciale, 1929.
- Division D. École spéciale de techniciens. Règlement programme. Charleroi. Imprimerie provinciale, 1929.
- Division E. Cours de perfectionnement—Cours temporaires—Service de vulgarisation scientifique. Charleroi. Imprimerie provinciale. 1930.
- Division G. Enseignements spéciaux: A. Correspondantes en langue française. B. Aides en pharmacie. Règlements & programme. Charleroi. Imprimerie provinciale. 1930.
- Division I. Service de documentation industrielle et bibliothèque.— Division L. Laboratoires industriels d'essais.— Division M. Musée de l'enseignement technique, Bulletin de l'enseignement technique. 1930. Charleroi. Imprimerie provinciale. 1930.
- Droit administratif et police. Charleroi Imprimerie provinciale, 1930.
- Cours normaux pour professeurs et aspirants-professeurs de l'enseignement technique. Règlement et programme. Charleroi. Imprimerie provinciale. 1930.

Université Catholique de Louvain. Année académique 1930-31. I. Calendrier académique. II. Programme des cours. III. Annexés: Bourses d'études, concours, addresses du corps académique, bibliothèque, etc. Louvain. Imprimerie Saint Alphonse. 1930.

— Université Catholique de Louvain. Règlement général. 1929.

— Faculté de philosophie et lettres. Règlements pour la collation des grades académiques. 1926.

— Notice sur l'institut supérieur de philosophie (École Saint Thomas d'Aquin). Louvain. 1930.

— École de pédagogie et de psychologie appliquée à l'éducation. 1927.

— École des sciences politiques & sociales. Institut des sciences économiques. Règlement et programme. Avril 1930.

— École des sciences politiques et sociales. Règlement. 1930.

— École des sciences commerciales, financières, consulaires et coloniales. Diplômes reconnus par le gouvernement. 1930.

— Faculté des sciences. Institut agronomique et école supérieure de brasserie. 1928.

Université colonial de Belgique. Faculté des sciences politiques et administratives. Section commerciale annexée. Anvers. Imp. E. Stockmans & Co., 1928.

Université de Gand. Programme des cours. Année académique 1929-30. I. Personnel enseignant—Institutions universitaires, renseignements généraux. II. Facultés de philosophie et lettres et de droit et instituts y annexés. III. Facultés des sciences et de médecine et institut y annexé. IV. Écoles préparatoires et spéciales du génie civil des mines et des arts et manufactures. Imprimerie du Moniteur belge, 40, rue de Louvain, Bruxelles. 1929.

Université libre de Bruxelles. XCVII^e Année académique. Statuts organiques, programme des cours pour 1930-31. Renseignements divers. Édition de l'Université. 1930.

— Rapport de l'Université libre de Bruxelles sur l'année académique 1928-29. Édition de l'Université. 1930.