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Foreword

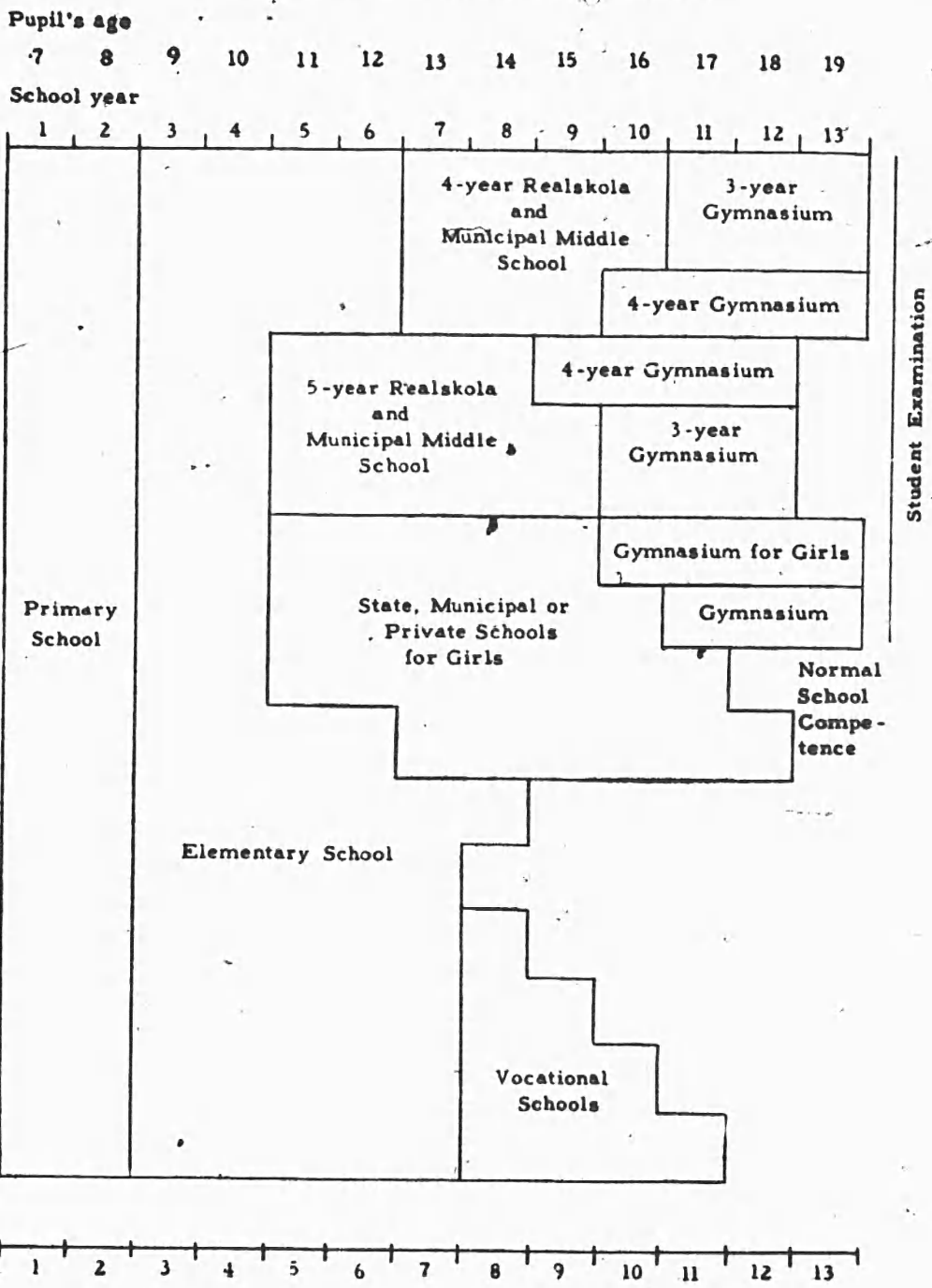
IN NOVEMBER 1948 the United States Office of Education received an invitation through the Embassy of Sweden, Washington, D. C., from the Sweden-America Foundation in Stockholm for Dr. Alina M. Lindegren, Specialist in European Education to visit Sweden for three weeks in January, February, or March 1949 as a guest of the Foundation. The idea behind the invitation was to give Dr. Lindegren an opportunity to meet people working in the education field in Sweden and to discuss with them matters of mutual interest to educators in Sweden and in the United States, particularly the question of the evaluation of Swedish student credentials. Arrangements were made for her also to visit schools and to talk with teachers and pupils. The present study is based on data gathered by the author during her visit to Sweden in January 1949 and supplemented since then through documentation.

To the Embassy of Sweden, Washington, D. C., the Sweden-America Foundation of Stockholm, Sweden, and the many persons and organizations in Sweden and in the United States who have aided in bringing this study to completion, the United States Office of Education expresses its gratitude.

BUELL G. GALLAGHER,

Assistant U. S. Commissioner for Higher Education.

Organization of Elementary and Secondary Schools in Sweden



Introduction

SWEDISH SCHOOL REFORM ACT OF 1950

The passage on May 26, 1950, by the Swedish Parliament (Riksdagen) of the Swedish School Reform Act of 1950 (Royal Proposition No. 70 of February 3, 1950, concerning lines of guidance in the development of the Swedish School system) climaxed, with reference to elementary education in Sweden, more than a century of progress since Sweden's first compulsory education act of June 18, 1842.

The first section of the Reform Act provides that "Measures shall be taken to introduce, within a period to be later determined, a 9-year compulsory comprehensive school, designed—insofar as the projected experiments demonstrate its expediency—to replace the elementary school, continuation school, the upper elementary school; the municipal middle school, and the realskola (lower secondary school).

All-round experiments shall be carried out concerning suitable forms of work for the comprehensive school, as for instance concerning differentiation of the pupils and the curriculum into lines of study in view of differences of bent among the pupils, concerning the work inside the school, and concerning the acceptance of pupils into the comprehensive school on the basis of a school maturity examination. Experiments shall also be conducted with different forms of practical middle schools.

The comprehensive school shall comprise 3 levels of 3 years each. Instruction at the lowest level shall, as a rule, be in charge of primary school teachers trained for service in classes 1-4; on the middle level in charge of middle school teachers with training for classes 3-6; and on the highest level, classes 7-9, in charge of subject teachers. Instruction in English shall begin in the fifth class. Preparatory trade instruction shall be given in class 9.

The following summary of the first few paragraphs of the introduction to the Royal proposition as presented gives the underlying educational philosophy not only of the School Reform of 1950 but also of much of the long-range educational development in Sweden:

Public concern with reference to education can never be limited to present needs. Instruction given at our teacher training schools should be the basis also for work one generation ahead in the schools of the future. It is not enough that

young teachers be prepared for work in the present school system, as far as possible they must be made familiar also with the development of the school system, its most immediate future goal, and with the changed demands that may be placed upon them by a reformed school system. The many school buildings to be constructed during immediate years, must, even they, serve the instructional needs of one or more generations to come. They must be planned with the future in mind as far as school conditions can be foretold in order to avoid poor investments. The municipalities need to know the intentions of the State concerning education in planning for their local organization problems of various types. For the State it is no less necessary to understand clearly the trends of educational development and at the right time to formulate its goal, that is one of the assumptions in order that public expenditures in the different fields of activity may be weighed against each other and in line with public resources.

Demands for long-range planning in education were made long before our time. Already in the so-called "Committee of geniuses" which presented its recommendations in December 1828, C. A. Agardh pleaded for such procedure. In his final statement he complained that the committee had limited its efforts too much to immediate needs. It should have asked itself what was back of the uneasiness of the time concerning educational matters. The whole should have been investigated, not merely the parts. It should have been more incumbent on the committee to determine in general the direction in which all improvement in the educational system should be made, rather than to determine specific changes; to draft a coherent conception of a school system to which the Swedish system finally, if ever so slowly, could approximate itself, rather than propose improvement only for the present or for the next 5 to 10 years.

In the field of elementary education the statute of June 18, 1842, implied such a program, the realization of which had to extend itself over decades. The statute was vague in many respects: the duration of study was not prescribed; the educational attainment required was defined only for children who had to leave school after the minimum course; and if they wished, parents could substitute instruction at home—often inadequate—for their children's school attendance. . . .

The speed of the work of organization was dependent upon what was economically possible, but already by 1853 two-thirds of the children of school age were receiving some school instruction. . . .

The lines of direction of 1842 have been followed gradually. The framework of organization has attained its concrete content and broadened in response to new needs. In 1858 the primary school was established to give beginners their first preparatory education, in 1878 the first plan of elementary school instruction was prescribed with the 6-class school as the normal type, and in 1882 the compulsory school age was defined by a decision that the school age should be calculated from the year in which the child attained the age of 7 to the year in which he attained the age of 14, both inclusive. Finally, according to a parliamentary decision of 1936 the compulsory elementary school was extended by a 7th class; this development was practically completed by the opening of school year 1948-49.

Concurrently, post-elementary school education was expanding; the outstanding year for this development was 1918, when practical schools for young people now in use were established by parliament.

Moreover the originally quite independent school system centered around the old grammar school was linked gradually more closely to the elementary school. A beginning was made in 1894 when the entrance requirements to class I of the

State secondary school were related to the curriculum of the elementary school. In 1909 the municipal middle schools were established with the 6-year elementary school as a basis, and after further reforms in secondary education in 1927 and 1928 all types of the realskola were based on either the 4- or 6-year elementary school course. A final step has been taken recently by which, as of the present school year (1949-50) entrance examinations to State secondary schools and to corresponding types of schools are abolished for pupils who have reached the prescribed standards in the appropriate class of the elementary school.

The Swedish Reform Act of 1950 was preceded by more than 10 years of preparatory work. In November 1940 the Minister of Education authorized a committee in which he himself served as chairman to study the organization of education in Sweden. The committee was mainly one of experts representing the different types of schools and educational interests in Sweden. In January 1946 this was followed by a second committee consisting mainly of laymen, representing the political parties in Parliament. In this committee also the Minister of Education served as chairman.

The following pages of this bulletin are devoted to an account of the Swedish educational system for which the School Reform of 1950 was planned and in which experimental work is already in progress.

ADMINISTRATION

Sweden is a constitutional monarchy in which the principle of parliamentary supremacy has long been accepted and in which the King rules after taking counsel with his ministers. The Swedish Cabinet (Statsråd) comprises at present 11 ministers or department chiefs (departementschefer) and 5 ministers without portfolio (konsultativa statsråd). As from July 1, 1947, the regular departments are the Department of:

- Justice (Justitiedepartementet)
- Foreign Affairs (Utrikeshandlingsdepartementet)
- National Defense (Försvarsdepartementet)
- Social Welfare (Socialdepartementet)
- Interior (Inrikesdepartementet)
- Communications (Kommunikationsdepartementet)
- Finance (Finansdepartementet)
- Education (Ecklesiastikdepartementet)
- Agriculture (Jordbruksdepartementet)
- Commerce (Handelsdepartementet)
- Supply (Folkhushållningsdepartementet)

Each regular minister is assisted in the direction of his department by an under-secretary (statssekreterare) and an executive under-secretary (expeditionschef). Further, each department comprises normally three or four bureaus each under the direction of a principal assistant secretary (kansliråd). Thus the Department of Education has four bureaus, one each for (1) church matters; (2) universities, academics, museums, archives, etc.; (3) schools; (4) adult education, vocational training, etc.

In addition to the departments which transact only the important affairs of the Crown such as matters pertaining to government bills in Parliament and the translation into practical administrative form of legislation enacted by Parliament there are the independent central agencies. From an organizational viewpoint the central agency operates under the department concerned, but is responsible only for the proper administration of the duties assigned to it by its Letter of Instruction from the Crown. These instructions generally outline the organization of the agency, the qualifications and duties of its officers, the work of the agency, and the extent of its authority in making decisions and in inspecting and controlling subordinate offices. The instructions charge each agency with a general responsibility for all developments within its individual administrative field. Each agency is also supposed to take the initiative in seeing that its sphere of government is properly administered.

Another important function of the central agencies is to submit formal opinions on the legislative proposals and reforms put forward by the government.

Each central administrative agency is in charge of a director-general (generaldirektör). Like the departments, the agencies are organized into bureaus. The chiefs of these bureaus aid the director-general and comprise the "board" of the agency.

The three most important agencies in the Department of Education are the National Archive (Riksarkivet), the Board of Education (Skolöverstyrelsen), and the Vocational Training Board (Överstyrelsen för yrkesutbildning). The national Archive serves partly as archives of national administrative records and partly as a central authority over smaller public archives throughout the country.

Between them the Board of Education and the Vocational Training Board supervise the educational system as a whole except for special institutions, such as agricultural, military, and navigation schools. The Board of Education is in charge of elementary and secondary education and also of adult education programs insofar as they receive government subsidies. Except for the research libraries at Stockholm, Uppsala, and Lund it also superintends the State-supported library system.

The universities and other institutions of higher education enjoy a relatively large degree of autonomy and are not under the direction of a central authority. The Faculties of the State Universities of Uppsala and Lund and the Caroline Surgical Medical Institute choose a university Chancellor who has a certain controlling authority over these institutions, and in some respects over the private Universities of Stockholm and Gothenburg.

Elementary Education

Organization of elementary education

According to a royal regulation of June 12, 1936, the elementary school beginning with the school year 1948-49 comprised seven 1-year classes. Until then it could be a 6- or 7-year school. At the beginning of school year 1948-49 this development was completed to the extent that only 9 out of a total of 2,449 school districts had been granted temporary extension of the period of transition. Further, 60 school districts, including 30 in rural areas had extended their period of compulsory school attendance beyond 7 years and established 8-year elementary schools.

The two lower classes of the elementary school comprise the primary school (literally "small school"—småskola); and the remaining classes, the elementary school proper (egentliga folkskola).

Sweden has four types of elementary schools. The two main types, A and B, offer full-time instruction throughout the school year. At type A schools each class is in charge of a separate teacher. At type B schools one teacher has charge of two or more classes.

Exceptional types C and D may be established only in special instances where local conditions make a main type out of the question. Type C is found in areas of sparse population and resulting long distance to school. It is a half-time elementary school with 1- or 2-teacher divisions. Each teacher division comprises at least two instruction divisions receiving instruction alternately, either every second day during the entire school year, or every day during half of the year.

Exceptional type D is a minor elementary school found only in remote areas with few children. It is a 1-teacher school with classes forming either one instruction division with full-time teaching or two half-time instruction divisions with the pupils of each division attending school every second day throughout the school year, or daily for half of the year. Instruction on both elementary and primary school levels is offered usually by a teacher who has passed only the examination for primary school teachers (p. 20).

In 1950 a total of 611,869 children attended elementary and primary school in Sweden. Of these, 237,813 lived in cities; 372,705, in rural areas; and, 1,351, in areas of sparse population. The city schools had a total of 9,677 teachers; the country schools, a total of 19,476 teachers.

Duration of study

The majority of school districts have a school year of 39 weeks, the remaining districts a school year of 36½ weeks. The school week comprises 6 days of instruction. In the primary school the school day cannot exceed 5 hours for each pupil, and in the elementary school, in general, not over 6 hours. The total number of class hours a week, including the morning religious service should not exceed a total of 36 class hours.

Compulsory school attendance

Compulsory school attendance begins with the calendar year in which the child attains the age of 7 years and ends with that in which he attains the age of 14 years. A child who has not acquired the information necessary for a leaving certificate by the time he attains the school-leaving age must continue in school until the close of the school year in which he becomes 15 years of age. A child who has earned his leaving certificate before attainment of the school-leaving age may be exempt from school attendance but not until the calendar year in which he becomes 13 years of age.

A child may begin school during the calendar year in which he attains the age of 6 years before July 1 if the parents so desire and if he is found sufficiently mature through examination by a physician and by testing. On the other hand, the beginning of school attendance may be postponed a year in the case of a child who is immature.

Plan of studies

Some idea of the work offered each year in the primary and elementary school as expressed in subjects and the number of class hours a week may be obtained from the following table:

Table 1.—Plan of studies for the 7-class elementary school form A

Subject	Hours a week per school year						
	Primary school		Elementary school				
	I	II	III	IV	V	VI	VII
1	2	3	4	5	6	7	8
Religion.....	2	2	2	2	2	2	2
Swedish:							
Speech and reading.....	7	7	6	5	5	4	3
Composition and grammar.....	4	5	5	5	5	5	5
Arithmetic and geometry.....	3	4	4	5	5	5	5
Community study.....	2	2	4				
Geography.....				3	2	2	2
Natural science.....				2	2	2	2
History.....				2	2	2	2
Handwork.....	3	2	2				
Drawing.....				1½	2	2	2
Singing.....	1	1	2	1½	1	1	1
Gymnastics with play and sports.....	1	2	3	3	2	2	2
Gardening.....							
Total.....	24	26	28	30	30	29	29

Secondary Education

General Data

State secondary schools in Sweden are called *högre allmänna läroverk*. They comprise a 4- or 5-year lower secondary school called a *realskola* and a 3- or 4-year upper secondary school called a *gymnasium*. A boy or girl who is planning to attend a university leaves the elementary school normally on completion of either the fourth or the sixth year. If he leaves the elementary school on completion of the fourth year he enters a 5-year *realskola* followed by a 3-year *gymnasium*. If he leaves the elementary school on completion of the sixth year he enters a 4-year *realskola* followed by a 3-year *gymnasium*. Those who leave *realskolan* on completion of the next to the highest class attend a 4-year *gymnasium*.

Realskolan

In February 1950 the State secondary schools included 67 *högre allmänna läroverk* each comprising a *gymnasium* with an attached *realskola*, and 152 *realskolor* not attached to a *gymnasium*. Of these 219 *realskolor* 65 comprised both a 4-year and a 5-year *realskola*, 139 a 4-year *realskola* only, and 15 a 5-year *realskola* only.

Realskolan offers a general education type of instruction. In addition some *realskolor* offer in their two highest classes one or more practical lines of instruction comprising a 2-year commercial, technical, or home economics course. The general education line closes with an examination called the *realexamen*; the practical line closes with the practical (*praktisk*) *realexamen*. A summary of the preparation for the *realexamen* as expressed in subjects and hours a week per school year, beginning with the autumn of 1948, is given in table 2 for the 5- and the 4-year *realskola*.

Municipal middle school (*kommunala mellanskola*)

These schools are identical as to type, curricula, and study plan with the State *realskola*. They differ only in administration and economic position. In accordance with a Parliament decision of 1944 a total of 61 municipal middle schools became State *realskolor* during the period 1944 to 1950.

Table 2.—Curricula for the 5- and 4-year realskola
(Hours in parentheses are for girls only)

Subject of instruction	Hours a week per school year								
	5-year realskola					4-year realskola			
	I	II	III	IV	V	I	II	III	IV
	2	3	4	5	6	7	8	9	10
Religion	2	2	2	2	2	2	2	2	2
Swedish	6	7	4	3	3	7	4	3	3
English	6	6	3	3	4	6	4	4	4
German			6	4	5		6	4	5
French				4	3			4	3
History and civics	3	4	3	3	2	4	3	3	2
Geography	2	2	2	2	2	2	2	2	2
Mathematics	4	5	4	3	4	5	4	3	4
Biology and hygiene	2	2	2	2	2.5	2	2	2	2.5
Physics			2	2	2		2	2	2
Chemistry				3	1.5		3		1.5
Penmanship	1	1							
Drawing	2	2	2	2(1)	2	2	2	2(1)	2
Music	2	2	2	(1)	1	2	2	(1)	1
Gymnastics with play and sports	4	4	4	4(3)	3	4	4	4(3)	3
Manual training									
Boys	2	2	2	3		2	2	3	
Girls	(2)	(2)	(2)			(2)	(2)		
Homemaking				(4)				(4)	
Total	36	39	38	36	34	38	39	37	34

¹ Optional except for students planning to attend the gymnasium.

Municipal schools for girls (kommunala flickskolor)

These schools offer a 7-year course for girls who leave the elementary school on completion of class 4, and a 6-year course for girls who leave on completion of class 6. Pupils of the 6-year line generally receive instruction together with the pupils of the 6 highest classes of the 7-year line. During the first year, however, pupils of the 6-year line receive separate instruction in English.

The lower division of the 7-year line includes classes 1-5, and of the 6-year line classes 1-4. The two highest classes in each line comprise the higher division which offers a theoretical and a practical line of study. The subjects of instruction in the lower division are the same as in the realskola. The added required subjects in the theoretical line of the upper division are hygiene and economics with psychology as optional. The practical line includes a series of homemaking subjects: Sewing, weaving, household work, and child care.

Completion of the theoretical line is marked by a leaving certificate with normal school competence. In 1947 this certificate was attained by 1,288 girls. During the same year 41 girls received leaving certificates from the practical line.

Study at schools for girls is marked by a slower work tempo than at the realskola. Transfer to the 4-year gymnasium, which occurs on completion

of class 4 at the 5-year *realskola* occurs on completion of class 5 at a school for girls. In addition, the pupil from a school for girls must take an individual examination called a *tentamen* in mathematics and chemistry. Transfer to the 3-year gymnasium generally occurs on completion of class 6. At this time also tentamina are required, depending in part on the subjects the pupil selected in class 6. Approximately one-fourth of the pupils who complete the upper division of the school for girls later go to a gymnasium.



Pupils in Realskola Class III (Grade 7) at a secondary school in Stockholm.

Practical middle schools (*praktiska mellanskolor*)

These are 4-year schools with pupils generally divided in commercial, technical, and homemaking lines. All three lines are represented at the schools in Stockholm, Gothenburg, Hälsingborg, Örebro, Borås, and Kalmar. In addition to the usual mechanical technical line the Technical Middle School of Stockholm has also a chemical technical line. Studies of the fourth year at a practical middle school close with the practical realexamen.

Private secondary schools (*privatläroverk*)

There are three types of private secondary schools: (1) Secondary schools for boys and coeducational schools (*högre goss-och samskolor*)

which generally have a 4- or 5-year *realskola* combined with a gymnasium; (2) private middle schools which have a 4-year *realskola*; and (3) private secondary schools for girls (*enskilda högre flickskolor*) which lead to normal school competence, to the *realexamen*, or to the student examination. *Höglandsskolan*, a State subsidized private school, offers the possibility for men to attain normal school competence.

In 1948 private secondary schools under the supervision of the Royal Board of Education were attended by 2,969 pupils in lines comparable to those of the 5-year *realskola*, 898 in lines comparable to the 4-year *realskola*, and 1,329 in lines comparable to those of the secondary school for girls. During the same year 233 pupils took the *realexamen* and 161, including 8 boys, received certificates of normal school competence.

The enrollment at various types of lower secondary schools during the fall semester 1948 is given in table 3.

Table 3.—Number of pupils at lower secondary schools, fall semester 1948

Type of school	Number of schools	Enrollment		
		Boys	Girls	Total
1	2	3	4	5
<i>Real schools</i>				
Municipal middle schools		34,217	25,801	60,018
Municipal schools for girls	32	1,929	2,541	4,470
Practical middle schools	47		16,254	16,254
Private secondary schools:	18	2,240	3,863	7,103
(1) Secondary schools for boys and coeducational schools		2,077	1,247	3,324
(2) Private middle schools		278	230	508
(3) Private secondary schools for girls			1,386	1,386
Total	97	41,759	31,908	98,641

Gymnasium

The gymnasium offers two lines of study: a Humanities line called *Latinlinje* (Latin line) and a modern or science line stressing science and mathematics called *Reallinje*. The distribution of pupils between these two lines is given in table 4. Of the 67 State gymnasiums 9 are for boys, 7 for girls, and the remaining 51, coeducational.

Municipal gymnasium (kommunala gymnasium).—Nine of the 26 schools of this type in 1948 had both a Latin line and a *reallinje*. One had only a Latin line. The remaining 16 were *realgymnasiums*. Except for the gymnasium in Solna which offers a 4-year course, municipal gymnasiums are 3-year schools.

Private gymnasium.—In 1948 there were 23 of these schools. In addition to the pupils in the Latin line and the *reallinje* indicated in table 4, 5 gymnasiums had also a modern language line with a total of 126 pupils.

Most of the schools in this group have a 4-year gymnasium. Some have a 3-year gymnasium; and 3, a 2-year gymnasium for gifted pupils. The total number of pupils in these 3 schools in 1948 was 55, and the maximum number of pupils per class ranged from 15 to 20.

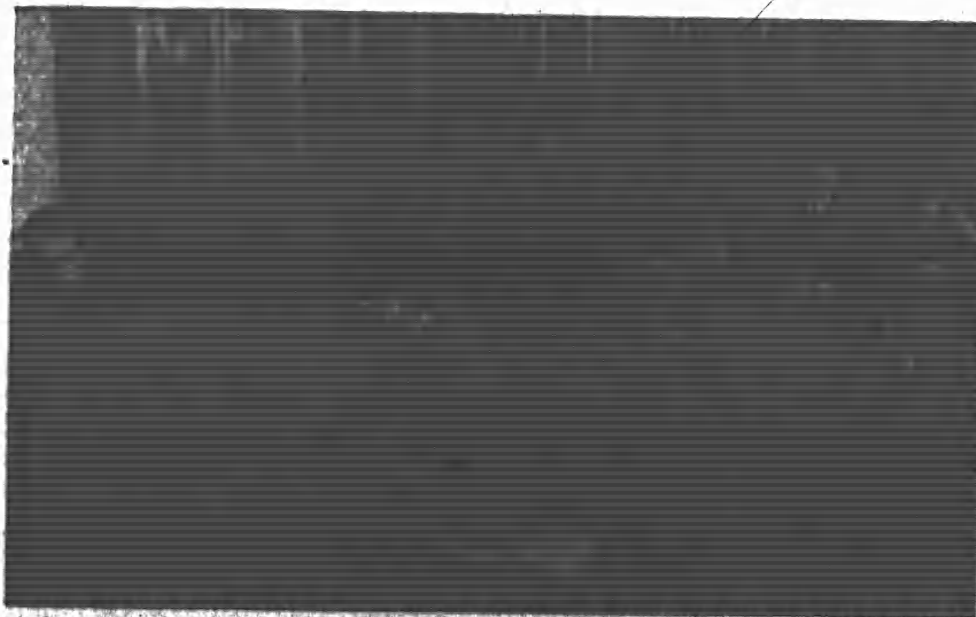
Curricula and plan of studies

The gymnasium, according to the Statute for secondary schools, aims to give a broader and more deepened civic training and at the same time lay the foundation for scientific knowledge to be developed further at the university and other institutions of university rank. Study at the gymnasium as expressed in subjects and number of hours a week per school year is given in tables 5 and 6.

During the first 2 years of the 4-year gymnasium and during the first year of the 3-year gymnasium all subjects of the prescribed curriculum are compulsory. The classes of the last 2 years of the gymnasium have a system of electives and comprise the "differentiated gymnasium" (differentierade gymnasium).

Differentiated gymnasium

The *differentiated gymnasium* had its origin in the secondary school statute of 1928 which provided for required and optional subjects in the two upper classes of the gymnasium. The required subjects for all pupils were religion, Swedish, history and civics, a modern foreign language, plus Latin in the Latin line, and mathematics in the reallinje. The three



Physics in Gymnasium Class III at the Selma Secondary School of Stockholm.

Table 4.—Number of pupils in the gymnasium, fall semester 1943

Type of school and course	Enrollment					
	Latin line (Latinlinje)			Reallinje		
	Boys	Girls	Total	Boys	Girls	Total
1	2	3	4	5	6	7
<i>State:</i>						
4-year gymnasium.....	1,889	2,961	4,750	2,909	837	3,746
3-year gymnasium.....	311	597	908	3,305	1,191	4,496
Total.....	2,200	3,458	5,658	6,214	2,028	8,242
<i>Municipal</i>			150			964
<i>Private</i>			1,048			1,682
Total.....			7,756			10,888

Table 5.—Curricula for the 3-year Latin and Realgymnasium

Subject of instruction	Hours a week per school year					
	Latin-gymnasium			Realgymnasium		
	I	II	III	I	II	III
1	2	3	4	5	6	7
Religion.....	2	2	1	2	2	1
Swedish.....	4	5	4	4	5	4
Latin.....	8	7	7			
Greek.....		7	7			
German.....	3	2	2	3	2	2
English.....	3	2	2	3	3	4
French.....	3	4	5	3	3	3
History and civics.....	4	3	4	3	4	4
Geography.....	1.5	2	2	1.5	2	2
Philosophy.....		2	2		2	2
Mathematics.....		4	3	6	6	6
Mathematics (advanced).....					2	2
Biology and hygiene.....		3	2		2	2
Physics.....		3	3	2	5	4
Chemistry.....		2	3	2	3	3
Drawing.....	2	1	1	2	1	1
Music.....	2	2	2	2	2	2
Gymnastics with play and sports.....	4	4	3	4	4	3
Total.....	36.5	(¹)	(¹)	37.5	(¹)	(¹)

¹ Totals not fixed since the programs are adjusted to fit the student's ability and desire for specialization.

optional subjects could be selected as the pupil wished from among the remaining subjects of his line of study. In 1933 the selection of optional subjects became somewhat restricted.

The present method of selection dates from 1946 with religion, Swedish, and history including civics as required subjects for all pupils. In addition, Latin and French are required subjects in the Latin line, and English and mathematics (general course) in the reallinje. In the Latin line the pupil selects his electives from among 11 prescribed subject combinations.

and in the reallinje from among 7 similar subject combinations. The prescribed subject combinations for each line and the percentage of elective frequency for the fall semester of 1948 may be seen in table 7. With the consent of the rector (principal) of the gymnasium and subject conference, the pupil may take an additional supplementary subject (tillägsämnet).

Student examination (Studentexamen)

Completion of the gymnasium is marked by a certificate of having passed the student examination. In the Latin line the written examination includes Swedish, Latin, and French; in the reallinje, Swedish, English, and mathematics (general course). If he wishes, the examinee in the Latin line may take a written examination also in German, English, and mathematics. The examinee in the reallinje may do the same in German, physics, and in either French or special mathematics. The oral examination is concerned mainly with the work of the last 2 years and includes 4 or 5 subjects. At least one-quarter but not more than one-half hour is devoted to each subject.

Examinees from secondary schools not authorized to give the student examination may be examined as privatists (privatister) before a special examination committee. One who has passed the student examination may take a supplementary examination according to the requirements of the student examination. The supplementary examination may cover a subject already included in the student examination to raise the mark made, or it may be taken in a subject not included in the original examination.

Table 6.—Curricula for the 4-year Latin and Realgymnasium

Subject of instruction	Hours a week per school year							
	Latin gymnasium				Realgymnasium			
	I	II	III	IV	I	II	III	IV
1	2	3	4	5	6	7	8	9
Religion.....	2	2	2	1	2	2	2	1
Swedish.....	2	4	5	4	2	4	5	4
Latin.....	6	6	6	6				
Greek.....			7	7				
English.....	3	3	2	2	3	3	3	4
German.....	3	3	2	2	3	3	2	2
French.....	3	4	4	5	3	3	3	3
History and civics.....	2	4	3	4	2	4	3	4
Geography.....	2	1.5	2	2	2	1.5	2	2
Philosophy.....			2	2			2	2
Mathematics.....	3		4	3	5	4	5	6
Mathematics (advanced).....							2	2
Biology and hygiene.....	2		3	2	2		3	2
Physics.....		2	3	3	2	3	4	3.5
Chemistry.....			2	3	2	2	2	3
Drawing.....	2	2	1	1	2	2	1	1
Music.....	1	2	2	2	1	2	2	2
Gymnastics with play and sports.....	4	4	4	3	4	4	4	3
Total.....	35	37.5	(1)	(1)	35	37.5	(1)	(1)

¹Totals not fixed since the programs are adjusted to fit the student's ability and desire for specialization.

Following is the system of marks used:

Mark	Number of points	Interpretation
A.....	3	Praiseworthy
a.....	2.5	Approved with outstanding praise
AB.....	2	Approved with praise
Ba.....	1.5	Approved without praise
B.....	1	Approved
C.....	0	Not approved

Technical Secondary schools (högre tekniska läroverk)

Technical secondary schools include the technical gymnasiums (tekniska gymnasier) and the technical vocational schools (tekniska fackskolor). Admission to either type of school requires a certificate of having passed the realexamen or evidence of equivalent schooling. In addition to a general technical line of study these schools offer instruction also in machine and building techniques, electrotechnics, and chemical technology; and to a less extent in mercantile-technical lines and special lines in teletechniques, in cellulose, textile and dyeing techniques, aeronautics, and shipbuilding.

Technical gymnasiums (tekniska gymnasier).—In 1948 Sweden had 12 technical gymnasiums, one each at Borås, Gävle, Gothenburg, Hälsing-

Table 7.—Elective subject combination frequency in the differentiated gymnasium, fall semester 1948

Subject combination	Selection percentage		
	Boys	Girls	Total
1	2	3	4
<i>Latin Line</i>			
1. German, English, geography.....	22.0	20.8	21.8
2. German, English, philosophy.....	31.2	21.4	25.4
3. English, geography, biology.....	12.4	22.7	18.5
4. Greek, German.....	1.2	.6	.9
5. Greek, English.....	7.8	4.3	5.5
6. Greek, philosophy.....	6.4	1.2	3.3
7. German, English, mathematics.....	10.8	10.6	10.6
8. English, mathematics, physics.....	2.2	.5	1.2
9. Mathematics, physics, chemistry.....	1.0	.3	.6
10. German, English, biology.....	2.8	9.4	6.7
11. English, biology, chemistry.....	3.2	8.2	6.1
Total.....	100.0	100.0	100.0
<i>Realinje</i>			
1. German, French, geography.....	13.5	13.5	13.5
2. German, French, philosophy.....	3.5	4.7	3.8
3. French, German, biology.....	10.3	35.1	17.4
4. German, French, physics.....	.9	.5	.8
5. French, physics, chemistry.....	.6	.6	.6
6. Biology, physics, chemistry.....	23.6	27.1	25.2
7. Mathematics (special course), physics, chemistry.....	22.6	5.7	20.7
Total.....	100.0	100.0	100.0

borg, Härnösand, Karlskrona, Luleå, Malmö, Norrköping, Skellefteå, Stockholm, and Örebro. For admission the applicant had to be at least 15 years of age and in addition to the aforementioned requirement as to schooling had to have at least 2 months of pertinent practical work. Completion of the 3-year course offered by a technical gymnasium is marked by the engineer's examination (*ingenjörsexamen*).

One who has passed the engineer's examination of a technical gymnasium is qualified for admission to an Institute of Technology (p. 45). He also may be admitted to the mathematics natural-science division of a university provided he made at least the mark approved in German and English and has a knowledge of French corresponding to that required for the realexamen.

A final examination taken at one of the now closed *tekniska elementarskolor* of Borås, Härnösand, Malmö, Norrköping, and Örebro is considered as corresponding to the *ingenjörsexamen* of the technical gymnasium.

Technical vocational schools (tekniska fackskolor).—These schools are located at Eskilstuna, Karlskrona, Malmö, Stockholm, Vesterås, Örebro, and Filipstad. They aim to give technical training which in addition to industrial experience is necessary for foremen at shops, factories, and other industrial concerns as well as for draftsmen and laboratory assistants in architectural and building construction offices. The course is generally 2 years in duration and ends with the *ingenjörsexamen*. If the instruction is confined in part or in its entirety to evening courses, it extends over a period of 3 to 4 years. For admission, the applicant must be at least 17 years of age, have schooling corresponding to the requirements of the realexamen, and have completed at least 2 years of practical experience.

Technical lower secondary schools (lägre tekniska läroanstalter).—Mention should be made also of a group of technical lower secondary schools

School	Location	Auspices
Technical Institute of Gothenburg (<i>Göteborgs Tekniska Institut</i>)	Gothenburg.....	Private.
Nettlers Technical Institute (<i>Nettlers Tekniska Institut</i>)	do.....	Do.
Hälsleholms Technical School (<i>Hälsleholms Tekniska Skola</i>)	Hälsleholm.....	Municipal—State subsidized.
Karlskoga Practical School (<i>Karlskoga Praktiska Läroverk</i>)	Karlskoga.....	Private—State subsidized.
Katrineholms Technical School (<i>Katrineholms Tekniska Skola</i>)	Katrineholm.....	Municipal—State subsidized.
Kristinehamns Practical School (<i>Kristinehamns Praktiska Skola</i>)	Kristinehamn...	Private—State subsidized.
Köpings Technical Institute (<i>Köpings Tekniska Institut</i>)	Köping.....	Private.
School for Mining Foremen and Technicians (<i>Bergslagens Verkmästare-och Teknikerskola</i>)	Sala.....	Do.
Municipal Technical Evening School of Stockholm (<i>Stockholms Stads Tekniska Aftonskola</i>)	Stockholm.....	Municipal—State subsidized.
Stockholms Technical Institute (<i>Stockholms Tekniska Institut</i>)	do.....	Private.
Technical Institute of Stockholm (<i>Tekniska Institutet Stockholm</i>)	do.....	Do.
Technical Vocational School (<i>Tekniska Fackskolan</i>)	Sundsvall.....	Do.
Municipal Technical Evening School of Örebro (<i>Örebro Stads Tekniska Aftonskola</i>)	Örebro.....	Municipal—State subsidized.
Örnsköldsviks Technical School (<i>Örnsköldsviks Tekniska Skola</i>)	Örnsköldsvik....	Municipal—State subsidized.

whose instruction is based on completion of the elementary school. These technical lower secondary schools offer courses varying in duration from 1 semester to 5 semesters. The 5-semester course closes with the examination for technicians (teknikerexamen). The schools of this type as of March 1948 are given on page 15. Not included are the technical lines of the realakola and the technical middle schools (p. 9).

Commercial gymnasium (handelsgymnasium)

The 13 commercial gymnasiums which were under the supervision of the Royal Board of Vocational Education in 1948 were municipal commercial secondary schools and in some instances private institutions with State subsidy. They offered a 2-year course based on schooling corresponding to that required for the realexamen (p. 7). Some also offered a 1-year course for students, that is, for secondary school graduates who had passed the student examination (p. 13). During the fall term of 1948 they had a total of 1,802 pupils of whom 338 were in the 1-year course for students. Table 8 gives the program of studies for the 2-year course in commerce and for the 1-year course for students at the Commercial Gymnasium of Malmö as given in the annual report for 1947-48.

Table 8.—Plan of studies for the 2-year course in commerce and for the 1-year course for students

Subject of instruction	Hours a week per school year		
	2-year course		1-year course for students
	I	II	I
I	2	3	4
Swedish.....	3½	3½	
English.....	5	5	4
French.....	4-5		
German.....	5		4
Commercial Science.....		5	
Commercial Science and Swedish correspondence.....		2	
Salesmanship and advertising.....			2½
Bookkeeping and Office practice.....		2	2
Commercial arithmetic.....	4	5	6
Economics.....	3	2	2
Economic geography and merchandise.....		2	2
Commercial law.....	2	2	2
Civics.....		2	3
Penmanship.....	1		
Shorthand.....	1		
Typing.....	2	2	3
Total.....	22½	22½	22½
<i>Optional subjects</i>			
French.....		4	4
Spanish.....		3	3
Special knowledge of merchandise.....	1		1
Total.....	1	7	8

Education of Elementary School Teachers

General Data

Teachers for each of the two divisions of the elementary school receive their education respectively at seminaries for the education of primary school teachers and at seminaries for the education of elementary school teachers. The seminaries are State institutions governed by Royal statutes issued January 21, 1938, for the primary school seminaries and June 18, 1937, for those of the elementary school and by regulations supplementary to these statutes.

The aim of instruction at both types of seminaries—"shall be to educate the students to be skillful, broad-minded, and sympathetic teachers of elementary school children. It shall give the general education and professional information which the students need for their future calling, aim to arouse a desire for further information and skill through continued education, and imbue them with loyalty to their chosen profession."

The school year at both types of institutions comprises a fall-semester of 17 weeks beginning in August and a spring semester of 22 weeks ending in June. The school week has 6 days and each hour of instruction, 45 minutes. No student may attend more than 7 classes in any one day.

Entrance requirements

In addition to the specific requirements for admission to each line of study the applicant for admission to either type of seminary must be a member of the Swedish Church, have a good reputation as to conduct, be of good health and free of any ailment that would hinder progress at the seminary or be detrimental later to effective work as teacher.

Admission to the first class of a seminary for the education of primary school teachers or to the first class of a seminary for the education of elementary school teachers is open to one who has passed the realexamen not earlier than 4 years prior to the calendar year in which he desires admission to the seminary and in this examination or in a supplementary examination made at least the mark "approved" in religion, Swedish, mathematics, history and civics, geography, biology and hygiene, physics and

chemistry; or passed with success an entrance examination according to the requirements in force. In addition the applicant must make at least the mark approved in aptitude tests and pass an entrance examination in drawing, penmanship, singing, and manual training.

In 1947 the number of applicants for admission to the seminaries for the education of elementary school teachers for men was 1,630 of which 856 were admitted. The corresponding figures for the seminaries for women elementary school teachers were 1,154 and 662.

Practice school (övningskolan).—Attached to each seminary and under the supervision of its rector is a practice school. It is coeducational and aims as far as circumstances allow to be a model school as well as a place for the practical education of the students of the seminary. For the 2-year line at the seminaries for the education of primary school teachers it comprises a primary school and the two lower classes of the elementary school. At the seminaries for the education of elementary school teachers it includes a primary school and the elementary school proper, supplemented when possible by a higher division of the elementary school and a continuation school. In the higher division of the elementary school instruction for each pupil shall not exceed 7 class hours a day.

Individual work (enskilt arbete)

General regulations for the two types of seminaries are similar. Thus at both types all students in the 2-year line and in the two highest classes of the 3- and 4-year lines must work out independently a project or individual work suited to his talents and interest in addition to the regular work of the class. In the highest class of the line concerned the individual work comprises a more profound study of some phase of a subject of instruction offered at the seminary.

Guidance and direction for each project is given by the instructor of the subject concerned. To allow additional time for the individual work, students of the next to the highest class in each line at the elementary school seminaries are exempt for 12 days from instruction in courses not directly connected with the project; students at the primary school seminaries are exempt in a similar manner for 10 days. Further, students in the highest class of each line at the elementary school seminaries are allowed 4 hours a week throughout the school year for the individual work; those in the highest class of the primary school seminaries are allowed 3 hours a week.

Exemption from class instruction does not include any phase of work or conference connected with practice teaching. A brief statement with reference to the individual work is entered on the certificate of having passed the final examination of the school.

Promotion (flytting).—Included also among identical regulations for the two types of seminaries are those governing promotion and leaving. At the end of each semester the student receives a report of the marks he has made in conduct, orderliness, and in information and skill in his various subjects of instruction. For promotion the student must make at least the mark "approved" in each of the required subjects of instruction. An exception may be made in one of the subjects music, manual training and, if due to illness, in gymnastics. Promotion to the next higher class is decided by the Faculty Council at the end of the school year for each student. In all lines promotion to the highest class requires, in addition to success in other work, a passing mark in practice teaching.

When the Faculty Council finds that a student is obviously unsuited for teaching but does not come within the prescribed causes for dismissal it may present the case to the Royal Board of Education for final decision.

Seminaries for primary school teachers (småskolseminarierna)

In the fall of 1951 Sweden had 10 seminaries for the education of primary school teachers. Nine, those of Falun, Härnösand, Landskrona, Lycksele, Norrköping, Skara, Stockholm, Strängnäs, and Växjö offered a 2-year line (2-årig linje); and one, that of Haparanda, a 3-year line.

The seminaries for the primary school teachers are open to women only. In addition to the requirements given on p. 17 the applicant for admission to class I of the 2-year line must be at least 17, but less than 28 years of

Table 3.—Plan of studies for the seminaries for the education of primary school teachers

Subject of instruction	Hours a week per school year				
	2-year line		3-year line		
	I	II	I	II	III
1	2	3	4	5	6
Religion.....	3	3	3	3	3
Swedish.....	6	4	6	5	5
Mathematics.....	2	1½	3	2	1
History and civics.....	2	2	2	2	2
Geography.....	2	1	2	2	1
Biology and hygiene.....	3	1	2	2	2
Physics and chemistry.....	1	1	1	1	2
Psychology and pedagogics.....	4	4	1	3	4
Drawing.....	2	3	2	2	2
Penmanship.....	½		½		
Music.....	2	2	2	2	2
Gardening.....	1½	¾	1	¾	
Manual training.....	3	3	3	3	
Home economics.....	2	2	2	2	
Gymnastics with games and sports.....	4	3	3	4	4
Professional education; Methods.....	½	2		1	3
Practice teaching.....	½	3		2	4
Total.....	39	35½	33½	36½	34

age. The corresponding ages for class I of the 3-year line are 16 and 27 years.

Plan of studies.—Some idea of the work offered each year in the 2- and 3-year lines as expressed in subjects and number of hours a week may be obtained from table 9 on page 19.

Examination for primary school teachers (småskollärarexamen).—Each of the two lines of instruction offered by the primary school seminaries closes with the examination for primary school teachers. The examination is given the latter part of April at a time fixed by the Royal Board of Education on the recommendation of the rector of the seminary concerned. It begins with the writing of a theme on one of several given subjects of a pedagogical nature to be completed within 6 hours. The themes are read and graded by at least 2 seminary instructors.

The oral examination and the examination in teaching are supervised and directed by a member of the Royal Board of Education or his representative. The examination in teaching is held at the practice school and includes a lesson in at least one subject. The assignment is made by the rector in consultation with the teacher or teachers concerned and given to the examinee 24 hours before the examination.

Success in all three parts of the examination is marked by a certificate of having passed the examination for primary school teachers (betyg över avlagd småskollärarexamen). In 1950 the examination was passed by 878 women. The total enrollment for the year at the 10 seminaries was 1,856.

A student who has not passed the final examination of a seminary may, if she wishes, receive a term report (terminsbetyg) or a leaving certificate (utskrivningsbetyg).

Seminaries for the education of elementary school teachers (folkskoleseminarierna).

In the fall of 1951 Sweden had 19 seminaries for the education of elementary school teachers. Of the 8 coeducational seminaries, those of Jönköping, Kristianstad, Luleå, Lund, and Umeå offered both the 4-year line and the 2-year line for students; that of Hälsingborg offered the 2-year line for students; and those of Gävle and Härnösand the 4-year line. Of the 6 seminaries for men those of Gothenburg, Karlstad, Linköping, Stockholm, and Uppsala offered the 4-year line and the 2-year line for students while that of Växjö offered only the 4-year line. The seminaries for women were located at Falun, Gothenburg, Kalmar, Linköping, and Stockholm and offered both the 4-year line and the 2-year line for students.

The requirements for admission to the 4-year line are the same as those for admission to the 2-year line at the seminaries for the education of

primary school teachers (p. 19) except that the limitations as to age are 16 and 26 years.

The age limitations for admission to the 2-year line for students are 18 and 28 years. Further, unless the applicant has passed also a university examination the student examination (p. 13) must have been passed not earlier than 4 years prior to the calendar year in which he wishes to enter the seminary. The entrance requirements with reference to the examination in drawing, penmanship, music, and manual training, and in the aptitude tests are identical with the corresponding requirements for the 4-year line.

Plan of studies.—The prescribed plan of studies for the 4-year line and for the 2-year student line expressed in subjects and number of hours a week for each school year is given in-table 10.

Not included in the study plan are for both lines: Swimming, 1 hour a week; chorus singing, 1 hour a week; instrumental music (piano, organ, violin), 4 hours a week for each class division. Additional optional hours a week for both lines may be selected from among drawing, 2 hours; orchestra, 1 hour; gymnastics with games and sports, 1 hour. Optional

Table 10.—Plan of studies for the seminaries for the education of elementary school teachers

(Hours in parentheses are for girls only)

Subject of instruction	Number of Hours a week per school year					
	4-year line				2-year student line	
	I	II	III	IV	I	II
1	2	3	4	5	6	7
Religion.....	2	2	2	2	2	1½
Swedish.....	3	3	3	3	3	1
Mathematics.....	2½	2	2	2		
History and civics.....	3	3	2	3		
Civics.....						4
Geography.....		2	2	2		
Biology and hygiene.....	2½	2	3		2	
Physics.....	2	2½	2			
Chemistry.....	2½	2				
English.....	4	3	2			
Psychology and pedagogy.....			4	4	4	4
Library care.....	½				½	
Drawing.....	2	2	2	2	2	1½
Penmanship.....	½				½	
Music.....	2	2	2	2	2	2
Gardening.....	1	2	2		2	1½
Manual training.....	4(2)	4	2		5(2)	4
Homemaking.....	(4)				(4)	
Gymnastics with games and sports.....	5(4)	5	5	5	5(4)	5
Professional education:						
Methods.....		½	1	1	4½	3
Practice teaching.....		½	1½	2½	2	3½
Total.....	39½	32½	37½	29½	34½	31

also for students in the 4-year line is French or German for a total of 5 hours a week in classes I and II.

In the 2-year line for students 3-hour supplementary courses (*kompletteringskurser*) are arranged each year in 2 of the subjects—geography, biology and hygiene, physics and chemistry, to the extent necessary. Supplementary courses are compulsory for students who did not make in the subjects concerned at least the mark "approved" in the student examination or in an examination supplementary to the student examination (p. 13). Without approval of the Royal Board of Education a student may not take more than two supplementary courses during his period of semi-ary attendance.

Psychology and pedagogy.—Following is a summary of the prescribed work in psychology and pedagogy for the 4-year line:

CLASS III. General psychology, including phases of child psychology important from the viewpoint of instruction. Main elements of logic. History of education in connection with the development of society and general culture. Consideration of the more important didactic questions in connection with the instruction in psychology and in practice teaching.

CLASS IV. Child and youth psychology with particular attention to sections that are significant from the viewpoint of education. Main elements of child and youth psychopathology. Psychic health care. Continuation and completion of the history of education. Modern pedagogic currents with particular attention to the actual problems of education and instruction. Aims and means of moral education. Personality of the teacher, school hygiene. The school system of Sweden with particular attention to the organization and administration of the elementary and continuation school. Social pedagogical arrangements including vocational guidance. Social legislation concerning children and youth. Voluntary work in public education in Sweden. Special theory of instruction with regard to the prescribed plan of instruction for the elementary school of Sweden and to the various types of elementary and continuation schools.

In the student line the work in psychology and pedagogy in classes I and II is identical with that of classes III and IV, respectively, in the 4-year line.

Practical education (praktisk Lärarbildning).—Practical education comprises whole day observation (literally "whole day visits"—*heldagabesök*) at the practice school by individual students, group practice teaching (*gruppövningar*), teaching of a series of lessons in the same subject (*serioövningar*), consideration of questions of method (*metodiska frågor*),

conferences, and visits at other schools. At the Elementary School Seminary of Stockholm (Folkakolseminariet i Stockholm), which may be regarded as typical, group practice is arranged for 6-week periods. The members of a group teach in rotation and attend all resulting conferences with the supervising teacher. On completion of the 6-week period in one subject each group proceeds to another subject and class.

Following is a brief outline of the prescribed work in practice teaching in the 4-year line:

- CLASS II.** *Whole day observation* at the practice school, particularly in the primary classes: 6 days for each student. During the fall term this should include 2-4 lessons in teaching.
Methods and didactics 1 hour a week during the fall term.
Group practice 1 hour a week during the spring term for each group of 4-5 students.
- CLASS III.** *Whole day observation* in the practice school, preferably in the lower classes: 4 days for each student, including at least 2 days in succession. Practice teaching in connection with whole day visits.
Group practice 1½ hours a week for each group of 3-4 pupils.
Methods 1 hour a week in connection with the group practice teaching.
- CLASS IV.** *Whole day observation*, preferably in the elementary school proper, and if there is opportunity, in the advanced and continuation school divisions: 6 days for each student, including at least 3 days in succession in the same division. Practice teaching in connection with whole day visits.
Group practice 3½ hours a week for each group of 3-4 students.
Methods 1 hour a week in connection with group practice.
Series practice a series of lessons in each of 2 subjects, about 16 hours for each student during the school year.
Visits to other schools.

In class I of the student line each student has a total of 10 days of whole day observation, including some practice teaching. Each group of 3-4 students has an average of 2 hours a week of group practice, and 4½ hours a week of methods, including 2 hours of general methods, and 2½ hours in methods of teaching various subjects. In class II the work in practice teaching is similar to that of class IV in the 4-year line, except that 3 hours a week instead of 1 hour are devoted to methods.

Examination for elementary school teachers (folkskollärarexamen).—Each of the two lines of study offered by the elementary school seminaries closes with the examination for elementary school teachers. The regulations governing this are practically identical with those for the examination for primary school teachers (p. 20). Success in the examination is marked by a certificate of having passed the examination for elementary school teachers (betyg över avlagd folkskollärarexamen).

Statistics

In 1950 the 19 seminaries for the education of elementary school teachers had a total enrollment of 4,656 of whom 2,585 were men and 2,071 were women. Of these 749 men and 765 women were in the 2-year line for students. During the same year the examination for elementary school teachers was passed by 644 men and 623 women making a total of 1,267 graduates from the seminaries for the education of elementary school teachers.

Institutions of University Rank

These include:

- I. Two national universities—
 - a. Royal University of Uppsala (Kungl. universitetet i Uppsala)
 - b. Royal University of Lund (Kungl. universitetet i Lund)
2. Caroline Medico Surgical Institute at Stockholm (Karolinska mediko-kirurgiska institutet)
3. Two private universities—
 - a. University of Stockholm (Stockholms högskola)
 - b. University of Gothenburg (Göteborgs högskola)
4. Two institutes of technology—
 - a. The Royal Institute of Technology at Stockholm (Kungl. tekniska högskolan i Stockholm)
 - b. Chalmers Institute of Technology at Gothenburg (Chalmers tekniska högskola) i Göteborg
5. At least 12 other institutions offer advanced scientific training in trade and professional subjects—
 - a. Institute of Dentistry in Stockholm (Tandläkarinstitutet)
 - b. Institute of Dentistry in Malmö
 - c. Royal Pharmaceutical Institute in Stockholm (Kungl. farmaceutiska institutet)
 - d. Royal Central Institute of Gymnastics (Kungl. gymnastiska centralinstitutet) Stockholm
 - e. Veterinary College of Stockholm (Veterinärhögskolan i Stockholm)
 - f. Royal College of Agriculture (Kungl. lantbrukshögskolan)
 - g. The Agricultural Dairy and Gardening Institute of Alnarp (Alnarps lantbruks, mejeri- och Trädgårdsinstitut)
 - h. Royal College of Forestry (Skogshögskolan)
 - i. Institute of Commerce in Stockholm (Handelshögskolan i Stockholm)
 - j. Institute of Commerce in Gothenburg (Handelshögskolan i Göteborg)
 - k. Royal Conservatory of Music (Kungl. musikhögskolan)
 - l. Institute of Arts (Konsthögskolan)

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NATIONAL UNIVERSITIES

Administration and organization

The University of Uppsala was founded in 1477 through a bull of Pope Sixtus IV authorizing the establishment of a studium generale on the pattern of the University of Bologna, Italy. Since 1625 it has comprised the four faculties of Theology, Law, Medicine, and Philosophy. In 1876 the Faculty of Philosophy was divided into two sections: Humanistic and Mathematics—Natural Science.

The University of Lund was founded in 1666 and opened 2 years later. Its faculties, including the subdivisions of the Faculty of Philosophy, are the same as those of the University of Uppsala.

National supervision of the universities is exercised by a Chancellor (Kansler) who is appointed by the King after election by the national universities and the Caroline Medico-Surgical Institute. The Chancellor is represented at the University of Uppsala by the Archbishop of Uppsala and at the University of Lund by the Bishop of Lund. The local administration of each university is in charge of its rector and faculty. At the head of each faculty and section there is a dean (dekanus).

Admission

A student wishing to enter one of these universities must present his original certificate of having passed the student examination (student-examen) and his birth certificate to the rector of the university he wishes to enter. With a satisfactory record of conduct the student is admitted immediately, but if the rector finds the record of conduct unsatisfactory he refers the question of admission to the Lesser Consistory (Mindre Konsistoriet). The admission of a student presenting a certificate received more than 2 years prior to the date of the application is referred also to the Lesser Consistory. The student then must present a special application accompanied by certificates covering his activities and conduct since the date of his student examination certificate.

Admission without a certificate for the student examination is open to one who:

- (a) Presents valid evidence that he has been admitted to another Swedish university or to the Caroline Medico-Surgical Institute in the prescribed manner.
- (b) Has been a student at a foreign university and been granted permission for admission by the Lesser Consistory.
- (c) Has passed an approved leaving examination from the Higher Seminary for Women Teachers or a corresponding leaving examination from a private seminary for women teachers.

The universities were opened to women in 1870. Three years later women were given the right to take the same examinations as men except for the licentiate examination in law in the case of subjects which require

practical experience as a judge, and the doctorate in theology which requires the performance of clerical duties not open to women.

Immediately upon admission to the University of Uppsala or Lund the student must apply for membership in 1 of the 13 nations into which the student body of these universities is organized. Each nation represents some section of Sweden and the student may select the nation he wishes to enter on the basis of (a) his place of birth, (b) the place of residence of his parents, (c) the location of the secondary school he attended, (d) the nation in which his mother or father was registered while attending the university. Membership in a nation is compulsory and evidence of good standing in the nation to which a student belongs is one of the regular requirements for admission to a university examination.

On admission to the nation the student completes his registration through inscription in the faculty in which he wishes to pursue his studies. Special requirements for admission to a faculty beyond presentation of the student examination certificate are given in the individual accounts for each faculty.

A student who wishes to withdraw from the university should notify the rector in order that an entry of the fact may be made in the matriculation record. After 4 consecutive semesters of non-attendance at the university the student is dropped automatically.

Academic year

The academic year begins on June 1 and comprises 2 semesters: a fall semester from September 1 to December 15, and a spring semester from January 15 to May 31.

Easter vacation may extend from 3 days before to 3 days after Easter Sunday. Further, after due consideration by the faculty concerned at most 1 week at the close of the fall semester may be devoted to examinations and other academic tests.

Study plans (studieplaner)

By Royal statute the universities are charged with the task of scientific research and instruction. Each faculty and section is responsible for the maintenance of academic instruction in the subjects within its own field and vested with the right to hold examinations for various degrees. For the guidance of students preparing for these degrees and examinations each faculty must prepare and present to the Chancellor for inspection and approval its study plans containing detailed information as to the requirements to be fulfilled for each examination within the faculty.

The plans of study usually indicate the normal period of study for the examination concerned; the subjects of the examination; and, when advisable, the order in which the subjects should be taken and the tentamina passed. They should give also the examination requirements for the mark

approved in each subject and for higher marks when these are necessary in order to pass the examination. During each spring semester the plans undergo the scrutiny of the faculty concerned. Any resulting changes are submitted to the Chancellor for approval.

Study handbook (studiehandbok)

On registration in a faculty the student receives a copy of the faculty handbook which gives him complete information about the instruction offered and the examinations he may take. For this purpose it contains pertinent sections of the university statutes, the examination regulations, the current study plans of the faculty and any other suggestions and advice that the faculty may consider essential for the proper academic guidance of its students.

Tentamen

In preparation for a regular university examination such as the candidate examination or the licentiate examination the student must take a private examination called a *tentamen* in each subject included in the examination. The tentamen may be written, or (and) oral; and public, if either the student or the examiner so wishes. Not more than three students may be examined at the same time. The student decides for himself as to when he is ready for the tentamen in a subject and unless the examiner has announced previously in a regularly prescribed manner that he will give tentamina at definitely stated periods the student is entitled to take the tentamen within 14 days after making application. A student who applies for a tentamen prior to a fixed tentamen period receives admission to tentamen within that period.

Application for a tentamen is made in writing and should give the subject in which the student wishes to be examined, the instruction he has received in the subject since the student examination, particularly the lectures he has attended and the propaedeutic courses, exercises, and seminars in which he has participated with the dates of attendance or participation in each. A student may not present himself for a tentamen in the same subject more than twice within the same semester.

Tentamensbook (tentamensbok)

When a student has passed a tentamen a dated record of the fact with the mark made and the signature of the examiner is made in the tentamensbook which he received at the time of his admission to the faculty. In it are recorded also the date of admission to the faculty, memoranda of the completion of courses, of substitutions allowed, and of any other fact of importance concerning examination requirements. At any given time, therefore, the tentamensbook gives the exact status of the student's scholastic progress at the university.

Marks and credit units (betyg och betygsenheter)

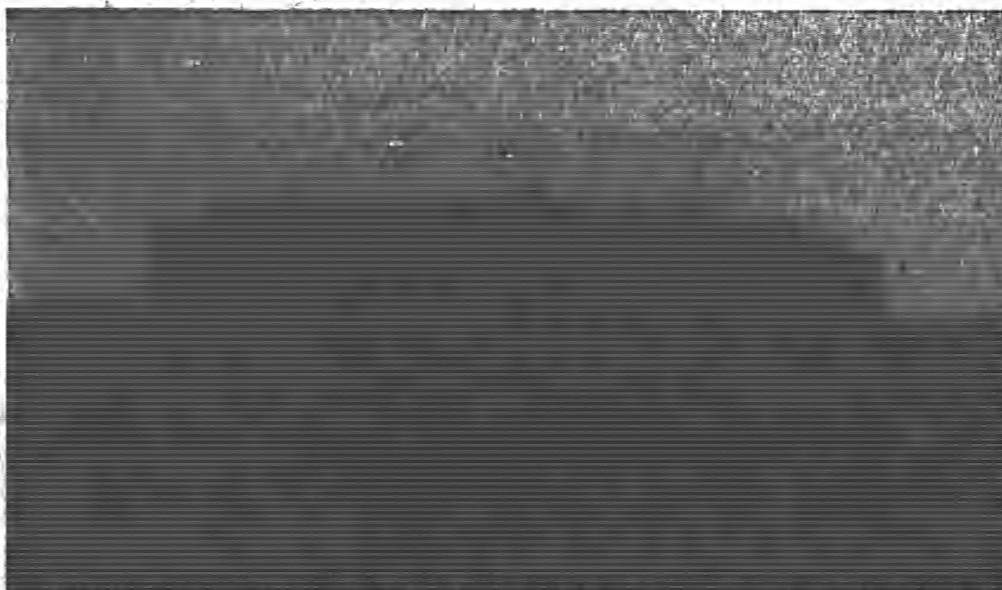
According to the study handbooks the student may work for any one of three levels of achievement of knowledge in each examination subject. Each level has its own fixed value with reference to credit units. The three marks with translations in Swedish and Latin and the value of each in credit units are:

Mark	Swedish	Latin	Credit units
Approved.....	godkänd.....	aprobatur.....	1
Approved with praise.....	med beröm godkänd.....	cum laude.....	2
Praiseworthy.....	berömlig.....	laudatur.....	3

Generally, particularly in the Faculty of Philosophy, the lowest mark, "approved," requires approximately 1 semester of university study, the mark "approved with praise" 2 semesters, and the mark "praiseworthy" 3 semesters. The approximate period of study, therefore, for each of these marks in the Faculty of Philosophy corresponds in general to the number of credit units that the mark earned stands for. In actuality the time varies with the ability of the student and with the nature of the subject studied.

In the Faculty of Law the time required for each subject is shorter so that a student may earn up to $1\frac{1}{2}$ credit units each semester. This is offset, however, by the greater number of required subjects in the examination requirement in law (p. 35).

In addition to the three marks of achievement in terms of credit units there are the half way marks of $1\frac{1}{2}$ and $2\frac{1}{2}$ which do not determine



The Royal University of Uppsala founded in 1477 is Sweden's oldest university.

achievement but the quality of achievement. Thus the marks that a student may earn in a subject with the number of points for each from the viewpoint of quality are as follows. The marks may also be expressed in letters.

Mark	Letter	Number of points
Praiseworthy (<i>berömlig</i>)	A	3
Approved with outstanding praise (<i>med utmärkt beröm godkänd</i>)	a	2½
Approved with praise (<i>med beröm godkänd</i>)	AB	2
Approved not without praise (<i>icke utan beröm godkänd</i>)	Ba	1½
Approved (<i>godkänd</i>)	B	1
Not approved (<i>icke godkänd</i>)	BC,C	0

FACULTY OF PHILOSOPHY (Filosofiska Fakulteten)

Degrees.—The degrees conferred by the Faculty of Philosophy are:

Candidate in philosophy (filosofie kandidat), usually written "fil. kand."

—This requires from 6 to 8 semesters of university study beyond the student examination and success in the candidate examination in philosophy.

Master of philosophy (filosofie magister), usually written "fil. mag."—This requires from 7 semesters to 8 semesters of preparation beyond the student examination and success in the professional examination in philosophy.

Master of political science (politices magister), usually written "mag. pol."—This requires approximately 8 semesters of preparation beyond the student examination and success in the political science examination in philosophy.

Licentiate in philosophy (filosofie licentiat), usually written "fil. lic."—This degree requires about 2 years of preparation beyond the candidate examination and may be taken by one who has passed the examination for fil. kand., fil. mag., or mag. pol.

Doctor of philosophy (filosofie doktor), usually written "fil. dr."—The degree of doctor in philosophy may be attained by a licentiate in philosophy after preparation, publication, and public defense of a thesis covering some phase of his studies for the licentiate examination. The thesis must be approved by the faculty both as to content and defense.

Candidate examination in philosophy (filosofie kandidatexamen).—This examination is open to one who has a certificate of having passed the

student examination (p. 13). It includes at least three of the examination subjects of the faculty. To pass the examination the student must make a total of at least 6 credit units and at least the mark "approved with praise" in two of the subjects.

Professional examination in philosophy (filosofie ämbetsexamen).—Like the candidate examination the professional examination in philosophy is open to one who has passed the student examination. In the Humanistic Section of the faculty it comprises one of the following subject groups:

- 1-4. Nordic languages, history of literature with poetics, and one of the following: Latin, German, English, history.
5. Latin, Greek, classical antiquity, and ancient history.
6. Latin, history.
- 7-9. German, English, Romance languages. (any two)
10. History, geography.

The prescribed subject groups of the mathematics—natural science section are:

11. Geography, botany, zoology.
12. Mathematics, physics.
13. Physics, chemistry.
14. Chemistry, botany, physics.

With a group of two subjects a third subject must be selected from among those of the same faculty section except in the case of mathematics which may serve as a third subject in either section. If botany or zoology is selected as a third subject the examination includes both of these subjects. The same applies in the selection of either Nordic languages or history of literature with poetics. Further, students who do not include pedagogics as a subject of study must take a semester course in psychology and the history and theory of pedagogics.

To pass the professional examination in philosophy the student must make a total of at least 7 credit units (betygsenheter). If the student selects a group of two subjects, he must make at least the mark "approved with praise" in each of these subjects. Including the credit units made in his selected group the student must arrange the selection of his additional subject or subjects so as to have a total of at least 6 points in the following subject area: Theological philosophy, history of literature with poetics, history, classical antiquity and ancient history, political science, Latin, Greek, Nordic languages, German, English, Romance languages, pedagogics, geography, mathematics, astronomy, physics, mechanics, chemistry, geology and mineralogy, botany and zoology.

Since success in the professional examination in philosophy qualifies for appointment as adjunct (adjunkt) or lower teacher at a gymnasium (p. 10) the information requirements in subjects corresponding to those of the secondary school are determined by the requirements for qualification as teacher at this school and by the prescribed regulations concerning

such qualification. Thus, Romance languages means French; Nordic languages and literature with poetics means Swedish; while botany and zoology correspond to biology.

Licentiate examination in philosophy (filosofie licentiatexamen).—Qualified for admission to this examination is one who has passed the professional examination in philosophy, the candidate examination in philosophy, or the examination in political science. The examination includes at least one of the examination subjects of the faculty in which the student must make at least the mark "approved with praise" and in which he must write a thesis approved by the examiner.

Supplementary examination (efterpröving).—A student who has passed the professional examination in philosophy, the candidate examination in philosophy, or the licentiate examination in philosophy may take a supplementary examination according to the requirements of the examination concerned in a subject not included in the examination, or in order to obtain a higher mark in a subject included in the examination. Only one supplementary examination may be taken in the same subject. The mark made in a supplementary examination carries the same weight as the mark made in the original examination.

Examination in political science (statsvetenskaplig examen).—The examination in political science may be taken either in the Faculty of Philosophy or in the Faculty of Law. In the Faculty of Philosophy it is called the political science examination in philosophy; in the Faculty of Law the political science examination in law. For admission to the examination the student must have made at least the mark "approved" in history and in at least one modern language in the student examination, or in an examination supplementary to the student examination. Qualified also is one who has passed the professional examination in philosophy, the candidate examination in philosophy, or the candidate examination in law.

Political science examination in philosophy (statsvetenskaplig-filosofisk examen).—The subjects of the political science examination in philosophy are economics, statistics, political science, geography, history, practical philosophy, and mathematics. Of these the examination always includes the first three. In addition the student may select any subject or subjects he may wish from those of the Faculty of Philosophy.

To pass the political science examination in philosophy the student must pass satisfactorily the 1-semester propædeutic course in law (p. 35) and make a total of 7 credit units in at most 4 subjects. In meeting the latter requirement the student has three optional arrangements. He may arrange to earn all 7 credit units in the 3 required subjects—economics, statistics, and political science. In which case he would have to make

the mark "praiseworthy" in one subject and at least "approved with praise" in each of the other two; or earn 6 credit units in the 3 required subjects and make at least the mark approved in one of the remaining 4 examination subjects (history, geography, practical philosophy, mathematics) or earn 5 credit units in the three required subjects with at least the mark "approved with praise" in 2 of them, and make at least 2 credit units in one of the 4 remaining examination subjects.

Theological philosophical examination (teologisk-filosofisk examen).—This examination constitutes the shortest and most usual route to theological study in preparation either for the ministry or for teaching. The examination is offered by the Faculty of Philosophy but is connected closely with theological study. Qualified for admission to the theological philosophical examination is one who in the student examination or in an examination supplementary to the student examination made at least the mark "approved" in Latin and in history.



**Klasas Tegner (1782-1846), Professor of Greek at Lund
and Sweden's greatest poet.**

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The examination includes an oral examination in Greek and Hebrew, and in either Latin or theoretical philosophy. In addition to these required subjects the student may include both Latin and theoretical philosophy and (or) history. To pass the examination the student must make at least the mark "approved" in each of the three required subjects.

The normal period of preparation for the examination, including only the required subjects, is about 3 semesters.

An examination supplementary to the theological philosophical examination may be given in a subject not included in the examination, or for attainment of a higher mark in a subject already included in the examination. A supplementary examination, however, may be taken only once in the same subject.

Special examination for candidates and licentiates in theology (särskild prövning för teologie kandidater och teologie licentiater).—A student who has passed an examination in the Faculty of Theology and who wishes to qualify for the year of probational training prescribed for secondary school teachers may take a special examination in the Faculty of Philosophy according to the requirements of the professional examination in philosophy insofar as they are applicable. Such examination should comprise either Nordic languages and history of literature with poetica, or one of the subjects Greek, Latin, history. If he wishes, the student may include also one or more of the examination subjects of the faculty. Unless pedagogics is included in the examination the student must take in addition the course in psychology and theory and history of pedagogics. In special instances and for valid reasons the faculty may on request grant the student permission to take the prescribed tests for the course without having attended the course.

FACULTY OF LAW

(Juridiska Fakulteten)

General.—According to the Royal regulations of June 20, 1935, the Faculty of Law is charged with the duty of providing for its students instruction with due regard to the examinations of the faculty and to the compulsory military service. For this purpose lectures are offered each year and to the extent the faculty finds it purposeful, scientific exercises and courses of instruction adapted to the requirements of the approved examination concerned.

For each of his examination subjects each instructor must present to the faculty his requirements for the mark approved in the candidate examination in law and in the political science examination in law indicating the extent of informational attainment expected, the list of required reading, as well as the lectures, courses of instruction and exercises

in which he expects the student to participate. If the faculty finds the examination requirements too high, it should reduce them to what it considers the proper level. Should the faculty member concerned so wish, the decision of the faculty will be presented to the Chancellor for approval.

Degrees in law.—The degrees conferred by the Faculty of Law are:

Candidate in law (juris kandidat), usually written "jur. kand."—This requires 9 semesters of preparation beyond the student examination and success in the candidate examination in law.

Master in political science (politices magister), usually written "mag. pol."—This requires 8 semesters of preparation beyond the student examination and success in the political science examination in law.

Licentiate in law (juris licentiat), usually written "jur. lic."—This requires about 3 years of preparation beyond the candidate examination in law and success in the licentiate examination.

Doctor of law (juris doktor), usually written "jur. dr.", may be attained by a licentiate in law after the preparation, publication, and public defense of an approved dissertation on some phase of his licentiate examination major.

Examinations.—The examinations in law are the candidate examination in law, the political science examination in law, and the licentiate examination in law.

Candidate examination in law (juris kandidatexamen).—Qualified to take this examination is one who in his student examination or in an examination supplementary to his student examination made at least the mark "approved" in each of history, introduction to philosophy, Latin, and a modern language.

The subjects of the examination are divided into two groups represented by Parts I and II of the following plan of studies. Among the subjects of Part I the student may omit either Roman law or economics. The tentamen in a subject may be taken at the end of the semester indicated or at the beginning of the following semester. The period of semesters of validity of the tentamen in each subject is indicated by the number in parentheses.

Before taking his tentamen in any of the examination subjects except economics and State law with common law the student must have completed a 1-semester propaedeutic course in civil law comprising a total of 64 class hours, including 42 hours of the fundamentals of judicial procedure and 24 hours of penal law. After completion of his tentamina in Part I and before admission to a tentamen in Part II he must have completed also a practical course aiming to acquaint him with various types of legal transactions and to furnish him with the necessary illustrative material. With the approval of the faculty the student may substitute practical experience for this practical course.

Table 11.—Plan of studies for the candidate examination in law

Semester	Subject	Tentamen
PART I		
I.	Propaedeutic course with final examinations Juridical encyclopedia History of law	Juridical Encyclopedia (10)
II.	History of law: Source writings Roman law Economics	History of law (10) Roman law (10)
III.	State and international law Law of finance	Economics (10) State law and common law (10)
PART II		
IV—V.	Civil law I, II	Civil law I, II, (7)
VI.	Civil law III Penal law Practical course	Civil law III (7)
VII.	Penal law International private law	Penal law (5) International private law (4)
VIII.	Administrative law Law of procedure	Administrative law (4)
IX.	Law of procedure Practical course continued	Law of procedure (1)

Political science examination in law (statsvetenskaplig-juridisk examen).—This examination comprises two sections: political science and law. The subjects of the political science section are economics, statistics, and political science of which economics and either statistics or political science must be included in the examination. In addition the student may select any subject or subjects he wishes from the Faculty of Philosophy.

The subjects of the law section are private law, law of finance, State and international law, and administrative law. All four subjects are included in the examination. If he wishes, the student may include also juridical encyclopedia and history of law. In private law the examination includes only the main elements of civil law and special private law.

To pass the political science examination in law the student must (a) pass satisfactorily the 1-semester propaedeutic course in law (p. 35); (b) make at least 4 credit units in the economics section of the examination, including 2 units, that is, the mark "passed with praise" in economics, and at least 2 units in either statistics or political science or 1 credit unit, that is, the mark "passed" in each of these two subjects; (c) make at least 5 credit units in the 4 subjects of the law section, including 2 credit units in at least 1 of the subjects law of finance, State and international law, and administrative law.

Licentiate examination in law (jurislicentiatexamen).—This examination may be taken only by one who has passed the candidate examination in law. The examination subjects are history of law; juridical encyclopedia;

Roman law; economics; law of finance; State law; civil law I, II and III; penal law; administrative law; law of procedure; international law; international private law. The examination comprises at least one of the

Table 12.—Plan of studies for the political science examination in law

Semester	Subject
I.	Propaedeutic course in law with final examination. Bookkeeping. Completion course in mathematics.
II.	Instruction and tentamen in private law.
III.	Instruction and tentamen in law of finance. Instruction and tentamen in State and international law.
IV.	Political science course in Descriptive economics.
V.	Instruction and tentamen in political science. Course in economic theory with final examination.
VI.	Instruction and tentamen in administrative law.
VII.	Statistics. Seminar and special lectures in economics.
VIII.	Tentamen in statistics. Seminar exercises and special lectures in economics. Tentamen.

examination subjects in which the student must make at least the mark "approved with praise" and prepare an approved dissertation. If the examination includes any one of the subjects penal law, law of procedure, or civil law I, II, or III the student must complete at least 1½ years of court service or equivalent practical legal work before admission to his tentamen.

FACULTY OF MEDICINE

(Medicinska Fakulteten)

Organization of instruction.—Medical study in Sweden is governed by the Statute of June 28, 1907, concerning medical examinations and by regulations supplementary thereto. According to this Statute the examinations in medicine may be taken in the faculties of medicine at the Universities at Uppsala and Lund or at the Caroline Medico Surgical Institute, of Stockholm. These Faculties and Institute are charged with the responsibility of making available to the students, with due regard to the period of military training, scientific instruction suitable for the education of physicians. The instruction should be offered in the form of lectures, courses, exercises, and service, depending on the character of the subject concerned.

To participate in a course of instruction or practicum prescribed for an

examination in medicine the student must register in the Faculty of Medicine at Uppsala or Lund, at the Caroline Medical Institute, or at the recently opened Medical College of Gothenburg (*Medicinska Högskolan* in Göteborg). Qualified for such registration is one who in the student examination or in an examination supplementary to the student examination made at least the mark "approved" in biology and mathematics at a Latin—or realgymnasium and also at a realgymnasium, in physics and chemistry.

Degrees.—The degrees in medicine are:

Candidate in medicine (medicine kandidat), usually written "med. kand."—This may be attained after 5 to 6 semesters of university study beyond the student examination and success in the candidate examination in medicine.

Licentiate in medicine (medicine licentiat), usually written "med. lic."—This degree may be attained after 7 to 8 semesters of university study beyond the student examination and success in the licentiate examination.

Doctor of medicine (medicine doktor), usually written "med. dr."—This degree may be attained by a licentiate in medicine after the preparation, publication, and public defense of a thesis approved by the faculty both as to content and defense.

Examinations.—The examinations in medicine are the candidate examination in medicine and the licentiate examination in medicine.

Candidate examination in medicine (Medicine Kandidatexamen).—The subjects of the candidate examination are:

- (a) *Anatomy*, comprising normal anatomy and related parts of embryology as well as the elements of comparative anatomy
- (b) *Histology*, comprising normal histology and related parts of embryology
- (c) *Physiology*, comprising general and special physiology
- (d) *Medical chemistry*, comprising physiological and pathological chemistry
- (e) *Pharmacology*, comprising pharmaco-dynamics and prescriptions as well as the necessary knowledge for this of the Swedish Pharmacopia
- (f) *Pathology*, comprising general pathology and bacteriology.

For admission to the individual examination (*tentamen* p. 28) in any of these subjects the student must present evidence of having completed the courses and exercises prescribed for the subject concerned as follows:

Anatomy—Exercises in dissection at the Anatomical Institute

Histology—Practical exercises in the Histological Institute

Physiology—Laboratory course in the Physiological Institute

Medical chemistry—Laboratory course in the Institute of Medical Chemistry.

Prerequisites for admission to this is a course in general chemistry including also the most general elements of pharmaceutical chemistry

Pharmacology—A course of instruction with demonstrations, and exercises in prescription writing

Pathology—Pathology—Practical exercises in general pathology and bacteriology, and practice in post-mortem examinations.

Licentiate examination in medicine (Medicine licentiatexamen).—The licentiate examination in medicine includes the following subjects:

- (a) *Medicine*, comprising medical pathology and therapeutics
- (b) *Pediatrics*, comprising child physiology as well as the pathology and therapeutics of children's diseases
- (c) *Surgery*, including surgical pathology and therapeutics
- (d) *Ophthalmology*, including the pathology and therapeutics of eye diseases and eye refraction difficulties
- (e) *Obstetrics and gynecology*, including the physiology, pathology, and therapeutics of pregnancy, child birth, and confinement; and the pathology and therapeutics of women's diseases
- (f) *Pathological anatomy*, comprising special pathological anatomy
- (g) *Legal and State medicine*, comprising the application of medical science to legislation, and Swedish legislation and administration concerning health and the care of the sick.

The protocol for the licentiate examination should include also the marks made by the examinee in psychiatry, dermatology, venereology, and hygiene.

After passing the candidate examination in medicine and before admission to the regularly prescribed instruction and work in preparation for the licentiate examination the student must complete either in the medical or surgical clinics during a total period of 2 months propaedeutic courses in the most important clinical examination methods, in general surgery, and in the general technique of nursing. Following this he must complete simultaneously during a period of 4 months' basic service in the medical and surgical clinics of the university and in the Pathological Anatomical Institute, show his industry and skill in these courses and services, and make at least the mark approved.

On completion of this preparatory work the student for admission to tentamen in each of the examination subjects must complete the prescribed courses and clinical work for the subject concerned as follows:

Medicine.—Four months' service at the Medical Clinic of the Caroline Institute; simultaneously or later, 2 months' course in neurology at the Caroline Institute; 2 months' service as assistant in the medical clinic either of the university or of the Caroline Institute; and 1 month of service at an epidemic hospital.

Pediatrics.—Two months' service in the pediatric clinic either at the Caroline Institute or at the University; included also are a course in inoculation and 1 month of service at an epidemic hospital;

Surgery.—Four months' service at the Surgical Clinic of the Caroline Institute; a 2 months' course in otology, rhinology, and laryngology either at the University or at the Caroline Institute; and 1 month of service as

assistant in the surgical clinic either at the university or the Caroline Institute;

Ophthalmology.—Two months of service at the ophthalmology clinic either at the university or the Caroline Institute;

Obstetrics and gynecology.—Four months of service in the obstetrics and gynecology clinics of the university or at the Caroline Institute.

Pathological anatomy.—Four months' service at the pathological Institute of the Caroline Institute simultaneous with the service at the medical clinic of the Institute; 2 months of service in the Pathological Institute either of the university or the Caroline Institute simultaneous with the service as assistant at the medical clinic; and 2 months of optional additional service either at the university or the Caroline Institute.

Legal medicine and State medicine.—Three months of service at the Institute of Legal Medicine at the Caroline Institute taken in the form of a course after completion of the prescribed clinical work in medicine and surgery—however, not including the service as assistant in each of these subjects—and in obstetrics and gynecology and the 6 months of clinical service in the pathological institutes.

Dermatology and venereology.—Two months of service at the Dermatology-venereology clinic of the Caroline Institute followed by 2 weeks of service as assistant at the same clinic;

Hygiene.—Two months' course of instruction either at the university or at Caroline Institute;

The student should complete also:

Psychology.—Two months of service in the psychiatric clinic of the university or the Caroline Institute:

Completion of the clinical service in each of psychology, dermatology, and venereology and hygiene is followed by examination.

During the period of clinical service in medicine and surgery at the Caroline Institute instruction is given every other day at the clinic and every other day at the polyclinic. In connection with the remaining clinical service polyclinical instruction and guidance should be given also insofar as this is possible.

For the aforementioned clinical work the student should be given one of the following marks in each of industry and skill: praiseworthy, approved with praise, approved, not approved.

The application for admission to the examination for licentiate in medicine is accompanied by a:

1. Certificate of having passed the candidate examination in medicine
2. Certificate showing that the applicant is a member in good standing of the nation to which he belongs

3. The applicant's tentamens book

4. Evidence that the applicant has the necessary knowledge about the arrangements in drug stores in general, as well as of the general principles concerning the supervision of drug stores, and how the investigations thereof should be conducted

5. Fee of 15 kronor.

In addition to this prescribed instruction the faculty may arrange for instruction which may be considered desirable for the education of a physician in special lines.

FACULTY OF THEOLOGY**(Teologiska Fakulteten)**

Admission.—Admission to the Faculty of Theology is open to one who has passed the theological philosophical examination or to one who made at least the mark "approved" in Latin either in the student examination or in a supplementary examination and in addition passed one of the following examinations offered by the Humanistic Division of the Faculty of Philosophy: Professional examination in philosophy, candidate examination in philosophy, licentiate examination in philosophy.

For those whose student examination did not include Latin and Greek, supplementary courses in Latin and Greek are offered each year provided a sufficient number of students present themselves for classes in these subjects.

Degrees.—The degrees in the Faculty of Theology are:

Candidate in theology (teologie kandidat), usually written "teol. kand."—This degree may be attained after 6 semesters of university study beyond the student examination and success in the candidate examination in theology.

Licentiate in theology (teologie licentiat), usually written "teol. lic."—This requires from 8 to 10 semesters of university study beyond the student examination and success in the licentiate examination.

Doctor of theology (teologie doktor), usually written "teol. dr."—The degree of doctor in theology may be attained by a licentiate in theology through the preparation, publication and public defense of a thesis based on research on some phase of one of the subjects of the licentiate examination. The dissertation must be approved by the faculty both as to content and defense.

Examinations.—The two main examinations in theology are the candidate examination in theology and the licentiate examination in theology. Other examinations include the supplementary examination, disputation for qualification as lektor, the academic disputation and promotion for the degree of doctor of theology, and the practical theological examination.

Candidate examination in theology (teologic kandidatexamen).—The subjects of this examination are history and psychology of religion, Old Testament exegetics, New Testament exegetics, church history, dogmatics and symbolism, theological ethics and philosophy of religion, practical theology and canon law, and—at the University of Uppsala—a special course and tentamen in history of missions. Since, according to the study plan, the study of theology comprises an organic whole, it is urged that the studies be pursued according to the following plan. The plan is arranged for a normal period of 6 semesters and presupposes that the student is preparing for the mark "approved."

Table 12.—Plan of studies for the candidate examination in theology

Semester	Subjects	Tentamen	Period of validity in years
I.	History and psychology of religion Old Testament exegetics	History and psychology of religion	3½
II.	New Testament exegetics	Old Testament exegetics	3
III.	New Testament exegetics Church history	New Testament exegetics	2½
IV.	Church history Dogmatics and symbolism	Church history	2
V.	Theological ethics and philosophy of religion	Dogmatics and symbolism	1½
VI.	Practical theology and canon law	Theological ethics and philosophy of religion Practical theology and canon law	1 ½

Special instruction in the history of missions when offered should be taken during the fourth semester.

Although the candidate examination in theology can be passed with the mark "approved" in each of the subjects it is advisable for one who is planning either to teach or to enter the ministry to have more profound knowledge of some phase of his field of study by working for a higher mark in one or more subjects. This is of value also in competition for appointment to a position. In actual practice, therefore, the usual period of time in preparation for the examination varies from 8 to 10 semesters depending on the marks the student wishes to attain.

Lectures and seminar exercises are offered in each subject. Information

concerning these are given in the Catalogue of Lectures (*föreläsning-katalogen*) which is issued at the beginning of each semester.

Licentiate examination in theology (Teologie licentiatexamen).—Qualified for admission to the licentiate examination in theology is one who has passed the candidate examination in theology. The licentiate examination includes at least 2 of the examination subjects of the faculty in which it presupposes deeper and more comprehensive information. To pass the examination the student must make at least the mark approved in each of the subjects of the examination and write a thesis approved by the committee concerned on a phase of one of his examination subjects. The application for admission to the licentiate examination in theology should indicate the subjects of the examination. It should be accompanied by (1) the student's tentamenabook, (2) his certificate for having passed the candidate examination in theology and for any examination he may have passed supplementary thereto, and (3) evidence that he is a member in good standing in the nation to which he belongs.

Supplementary examination (Efterprövning).—A student who has passed the candidate examination in theology or the licentiate examination in theology may take a supplementary examination according to the requirements of the examination he has passed in order to make a higher grade in a subject of the examination he has passed or in the case of the licentiate examination be examined in a subject not included in the examination he passed. A supplementary examination may be taken only once in a subject with reference to the requirements of one and the same examination. A mark made in a supplementary examination carries the same rights as a mark made in the examination whose requirements were met by the supplementary examination.

Practical theological examination (Praktisk-teologiska prov).—One who has passed the candidate examination in theology is entitled to take the 1-semester course in practical exercises preparatory for the practical theological examination. On completion of the course a student wishing to take the examination may apply in writing to the Dean of the faculty.

The practical theological examination comprises (1) a written homiletic examination; (2) examination showing the student's catechetical, liturgical, and homiletical skill; and (3) an examination in church law.

The mark in written homiletics is given by the teacher of homiletics as approved or not approved. In order to continue the practical theological examination the candidate must make the mark approved. In each of the catechetical, oral homiletical, and church law examinations, as well as in the liturgical sermon and liturgical singing the mark is given by the instructor concerned. To pass the examination the candidate must

make at least the mark approved in the catechetical, oral homiletical, and church law examinations and in the liturgical sermon.

On passing the examination the candidate is informed of the fact through an excerpt from the examination protocol.

Statistics.—During the fall semester of 1950 the University of Uppsala had a total of 3,813 students of whom 30.6 percent or 1,165 were women. The enrollment by faculties was in that of Theology, 221; Law, 588; Medicine, 496; Philosophy: Mathematics-Natural Science Section, 783 and in the Humanistic Section, 1,725.

During the same semester the University of Lund had a total of 2,920 students of whom 28.7 percent or 838 were women. The enrollment by faculties was in that of Theology, 181; Law, 474; Medicine, 502; Philosophy: Mathematics-Natural Science Section, 591; Humanistic Section, 1,172.

CAROLINE MEDICO-SURGICAL INSTITUTE

(Karolinska Mediko-Kirurgiska Institutet)

The Caroline Medico-Surgical Institute, generally known as the Caroline Institute (Karolinska Institutet) was organized in 1663 as a "collegium medicum" by a group of physicians in Stockholm. Through a Royal decision of 1810 it was charged with the training of army surgeons. It attained the status of a complete medical faculty through a Royal letter of June 13, 1923. The Institute is under the supervision of the University Chancellor. Its local administration is in charge of its rector and faculty.

The Caroline Institute participates with the medical faculties of the Universities of Uppsala and Lund in the theoretical and practical training of physicians. The requirements for admission to medical study at the Caroline Institute are identical with those for admission to the medical faculties of the Universities of Uppsala and Lund. Regulations concerning the academic year and examinations are in the main the same as for the medical faculties of the national universities.

The student body is organized into a medical association in which membership is compulsory. The regulations governing the association are practically identical with those governing the nations at the national universities. During the fall semester of 1950 the Caroline Institute had a total of 864 students including 174 women (20.1 percent).

PRIVATE UNIVERSITIES

General data.—The private universities are the University of Stockholm (Stockholms Högskola) founded in 1877 by the University Association of Stockholm and opened in the fall of 1878, and the University of Gothenburg (Göteborgs Högskola) founded in 1889 and opened in 1891. Each is governed by a board of directors and both are under the supervision of the Chancellor for the universities of the Kingdom.

Regulations concerning the academic year and requirements are practically identical with those for the national universities. At each institution membership in the student corps is compulsory.

The University of Stockholm (has the three faculties of Humanities (Humanistiska Fakulteten), Mathematics-Natural Science (Matematisk-Naturvetenskapliga Fakulteten), Political Science and Law (Stats- och Rättsvetenskapliga Fakulteten), while the University of Gothenburg has a Humanistic Faculty only. The study plans used by these faculties are similar to those approved by the Chancellor for the national universities.

Degrees.—The degrees conferred by the University of Stockholm are candidate, licentiate, and doctor in each of the Faculties of Philosophy and Law. In addition it also confers the degree of master of philosophy (filosofie magister) in the Faculty of Philosophy.

The University of Gothenburg confers the degrees of candidate, licentiate, doctor, and master in philosophy. It also offers the theological philosophical examination, the political science examination in philosophy, and the political science part of the political science examination in law.

THE INSTITUTES OF TECHNOLOGY

(De Tekniska Högskolorna)

Sweden has two institutes of technology: The Royal Institute of Technology of Stockholm, (Kungl. Tekniska Högskolan i Stockholm) and Chalmers Institute of Technology (Chalmers Tekniska Högskola) at Gothenburg. Both are State institutions and devoted by Royal statute to research and instruction in technological science. The Royal Institute of Technology of Stockholm began in 1697 as a *Laboratorium Mechanicum*. Through a Royal letter of May 18, 1825, it was reorganized and opened in 1827 as a Technological Institute. Fifty years later, in 1877 it became the Royal Institute of Technology.

Chalmers Institute of Technology of Gothenburg opened in 1829 as Chalmerska Slöjdskolan (Chalmers Slöjd School) and became in 1833 Chalmers Technical Institute. In 1914 Chalmers Technical Institute was changed to comprise two divisions. On July 1, 1937, the upper division became Chalmers Institute of Technology; the lower division, a State technical gymnasium.

Since July 1, 1947, the Royal Institute of Technology of Stockholm and Chalmers Institute of Technology have been governed by the same Board of Directors (överstyrelse) comprising a chairman and eight other members. The chairman and six members are appointed by the King to serve for a period of 4 years. The rector of each of the two institutes are ex-officio members of the Board.

The immediate supervision of each Institute is in the hands of its rector, faculty council (lärarkollegium), faculty committee (kollegienämnd), and—in the case of Chalmers Institute of Technology—of a local board (lokalstyrelse). The rector and pro-rector are elected by ballot by the faculty council to serve for 4 years. Qualified for election is a professor who has held a position as professor for at least 3 years on the day his duties begin, that is, on July 1.

The Faculty Council comprises all the professors of the Institute with the rector as chairman and the pro-rector as vice chairman. It meets at least twice a semester on the summons of the rector and otherwise as often as the affairs of the Institute require. The Faculty Committee is comprised of the chairman of the various departments of the Institute with the rector as chairman and the pro-rector as vice-chairman. It meets on the summons of the rector in accordance with the needs of the current affairs of the Institute.

Within each department the professors, demonstrators, and special teachers form a department council (avdelningskollegium) which through the cooperation of its members works for the up-to-date development of the department and of the subject fields it represents. The chairman of each department council is appointed by the Faculty Council from among the professors of the department on the recommendation of the department council concerned to serve for a period of 4 years.

Each department has a department committee (avdelningsråd) comprised of as many members as it may deem necessary. The members are appointed by the King to serve for a period of 4 years on the recommendation of the Board of Directors. The committee is charged with the duty of seeing that the activities of the department concerned are conducted in a purposeful manner from the viewpoint of industrial life, to give its opinion about recommendations made by the department council with reference to study plans and major changes concerning studies, and on request to give its opinion concerning the research and instruction of the department to the Faculty Council and to the Faculty Committee.

Instruction at the institutes of technology is carried on by professors, demonstrators, special teachers, docents, assistant teachers, first assistants, and assistants.

The student body at each of the two institutes of technology comprise:

- (a) Regular students (*ordinarie studerande*) who are pursuing instruction for a prescribed examination.
- (b) Special students (*specialstuderande*) who follow instruction in one or more subjects of their own selection for the purpose of receiving a certificate (*kunskapsbetyg*).
- (c) Extra students (*extra studerande*) who follow instruction in one or more subjects of their own choice but are not eligible for a certificate.

Entrance requirements.—Admission as a regular student is open to one who:

1. Has passed the student examination with at least the mark approved and in the examination or an examination supplementary to it made at least the mark approved in mathematics (general and special course), physics and chemistry according to the requirements of the student examination of the realgymnasium, and in addition presents due evidence of skill in drawing to the extent necessary for the mark approved in the latter examination; however, one who has passed an examination in mathematics, physics, or chemistry at a university or other institution of university rank is exempt from supplementary examination in these subjects; or

2. Received a leaving certificate from a State technical gymnasium or from some other corresponding or technical secondary school, and made at least the mark approved in mathematics, physics, chemistry, drawing, Swedish and two modern languages, including English or German. The mark in Swedish and foreign languages may be substituted by approved evidence of corresponding information therein from the Faculty Council; or

3. Received a certificate from a commercial college or from a State supervised commercial gymnasium and can show through evidence approved by the Faculty Committee that he has information and skill in mathematics, physics, chemistry, and drawing corresponding to the requirements in these subjects under items 1 and 2; or

4. Through evidence of at least 2 years of practical work completed after attainment of 18 years of age show outstanding aptitude for one of the lines of work for which the Institute offers preparation; and through evidence approved by the Faculty Committee have information and skill corresponding in mathematics, physics, chemistry, and drawing to the requirements in these subjects indicated in items 1 or 2, and in Swedish and two modern foreign languages, including English or German, corresponding to the requirements of the student examination or to those of the leaving examination of a technical gymnasium.

The aforementioned certificates and evidence must have been issued within 5 years of the beginning of the course to which admission is desired. Exception from this may be granted in special instances and in the case of Swedish and foreign languages the student may have until 1 year after admission to the course to make up the prescribed requirements.

Admission as a special student is open to one who has passed examination at a university, other institution of university rank, or at a secondary school, or who after attainment of 18 years of age has completed at least 2 years of successful practical work of a nature approved by the rector. In addition the applicant must present evidence of information necessary to pursue the studies to which he desires admission.

For participation as a special student in the prescribed course for agricultural engineering at the Institute of Technology in Stockholm the applicant must in addition have the qualifications required of regular students according to a recommendation of the Agricultural Department.

Admission as an extra student may be granted to the extent space is available to one who has sufficient information to follow the instruction offered.

Application for admission as a student at the Institute of Technology is presented to the Rector in writing and should be accompanied by a certificate of birth and the prescribed evidence of qualification for admission.

Student corps (studentkåren).—Each student at the Institute of Technology must be a member of the student corps. The purpose of the corps is to bring the students together to further the study of technical science and to promote and foster a spirit of good comradeship. The student corps is under the supervision of an inspector selected by the corps in the presence of the rector from among the members of the Faculty Council.

Academic year.—The academic year comprises a fall semester beginning September 22 and ending on February 8, and a spring semester from February 9 to June 22. In addition to a summer vacation from the end of one academic year to the beginning of the next vacations are scheduled at Christmas from December 22 to January 6 and at Easter for 17 days.

Tentamen periods.—These are arranged for the different departments for times determined by the Faculty Council. For each department the tentamen periods may not comprise more than a total of 40 days a year, including Sundays and holidays. During the tentamen periods instruction in the department concerned ceases.

Examinations.—Qualified for admission to the studies of the third year is a student who has made at least the mark "approved" in all the required subjects and exercises of the first and second year of his course, and except for students in the Department of Surveying, completed 3

months of practical work approved by the department council. Except for the Department of Surveying which requires a total of 4 months, each department of the Institute requires for admission to its leaving examination completion of a total of at least 6 months of practical work approved by the department council.

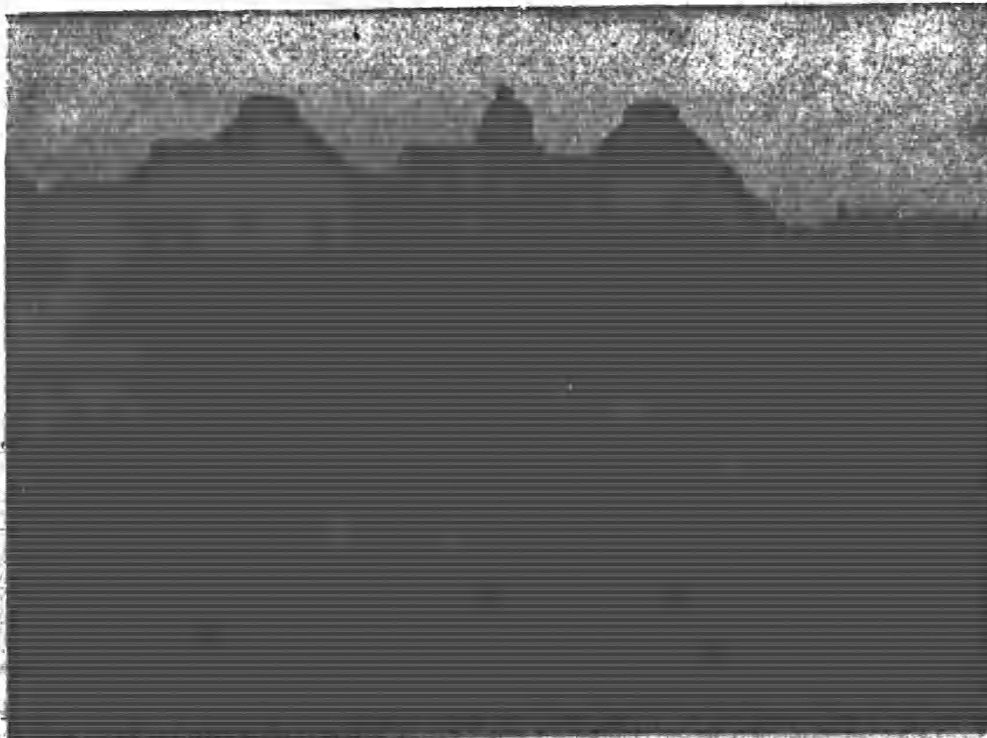
The examinations offered by the Institutes of Technology are the leaving examination comprising the examination for civil engineers, the examination for mining engineers, the examination for architects, and the examination for surveyors; and a higher examination called the licentiate examination in engineering.

ROYAL INSTITUTE OF TECHNOLOGY OF STOCKHOLM

(Kungl. Tekniska Högskolan i Stockholm)

The Royal Institute of Technology of Stockholm comprises the following nine departments. Each department offers a 4-year course except that of Mining and Metallurgy which offers a 4½-year course.

Engineering Physics (Avdelningen för teknisk fysik)
Mechanical Engineering (Avdelningen för maskinteknik)
Aeronautics and Shipbuilding



A view of the Royal Institute of Technology of Stockholm.

EDUCATION IN SWEDEN

- (Avdelningen för flygteknik och skeppsteknik)
- Electrical Engineering (Avdelningen för elektroteknik)
- Civil Engineering (Avdelningen för väg- och vattenbyggnad)
- Chemical Engineering (Avdelningen för kemi)
- Mining and Metallurgy (Avdelningen för bergsvetenskap)
 - A. Division of Mining (Underavdelningen för gruvvetenskap)
 - B. Division of Metallurgy (Underavdelningen för metallurgi)
- Architecture (Avdelningen för arkitektur)
- Surveying (Avdelningen för lantmäteri)

Some idea of the work of each of these departments may be obtained from tables 14 through 18 which give the program of studies for the 4-year course of the Department of Mechanical Engineering taken from pages 4-7 of the Plan of Studies for Academic Year 1949-1950 (Läro- och Timplaner för Läroåret 1949-1950) at the Royal Institute of Technology of Stockholm.

Table 14.—Plan of study in Mechanical Engineering for academic year 1949-50—First and second years

Subjects of instruction	Average number of hours a week			
	Fall semester		Spring semester	
	Lecture	Laboratory	Lecture	Laboratory
1	2	3	4	5
FIRST YEAR				
Mathematics.....	3	6	4	7
Descriptive geometry.....	1	1½		
Methods of numerical estimates, general course.....	2	3		
Vector algebra, general course.....	2	3		
Physics II.....				3
Physics III.....	3		3	
Mechanics.....	2	3		3½
Chemistry.....	(2)		(2)	
Drawing techniques.....	½		1	
Law.....			1½	
Economics.....			1½	2
Strength of materials.....	2½			
Total of the maximum number of required hours.....	16	16½	19	19½
SECOND YEAR				
Vector analysis, general course.....			1	1½
Physics III.....	3	3		
Mechanics.....	4	5	2	3
Machine elements, general course.....	3	4	3	6
Mechanical theory of heat.....			4	1
General engineering and production techniques.....	2			
Theory of combustion I.....			2	2
General metallurgy.....	4		1	
Strength of materials, general course.....	3	2	1	3
Electrical engineering.....			3	
Total of the maximum number of required hours.....	19	16	17	18½

Degrees.—The degrees conferred by the Royal Institute of Technology of Stockholm are:

Civil Engineer (Civilingenjör).—The diploma of civil engineer may be attained in one of the Departments of Engineering Physics, Mechanical Engineering, Aeronautics and Shipbuilding, Electrical Engineering, Civil Engineering, Chemical Engineering after 4 years of study and success in the examination for civil engineers (civilingenjörsexamen).

Mining Engineer (Bergsingenjör).—The diploma for mining engineer may be attained in the Department of Mining and Metallurgy after 4½ years of study and success in the examination for mining engineers (bergsingenjörsexamen).

Architect (Arkitekt).—A diploma qualifying the holder to use the title of Architect may be attained in the Department of Architecture after 4 years of study and success in the examination for architects (arkitekt-examen).

Surveyor (Lantmätare).—A diploma qualifying the holder to use the title of Surveyor may be attained in the Department of Surveying on completion of 4 years of study and success in the examination for surveyors (lantmäterixamen).

Table 15.—Plan of study in Mechanical Engineering for academic year 1949-50—Third year, groups I and II

(Numbers in parentheses are for optional subjects, those in brackets for elective subjects)¹

Subjects of instruction	Average number of hours a week								
	Group I Power techniques				Group II Engineering construction				
	Fall semester		Spring semester		Fall semester		Spring semester		
	Lec.	Lab.	Lec.	Lab.	Lec.	Lab.	Lec.	Lab.	
I	2	3	4	5	6	7	8	9	
THIRD YEAR									
Mathematical statistics, general course.....	1	1			1	1			
Machine elements, continuation course.....	2	4		1½	2	4			1½
Mechanical technology, general course.....	2	1	2		2	1	2		
Tool machines, general course.....							4	4	
Steam technique:									
Lemon course.....					2		1	2	
General course.....	2	3	3	3					
Combustion motor techniques, general course.....	2		2	6	(2)		(2)	(2)	
Water motor and pumps, general course.....	3	1	3	4	(2)	(1)	(2)	(2)	
Casting and moulding techniques.....			2	½			2	½	
Mechanical technology of wood ²							(2)	(2)	
Transportation arrangements, general course.....	2½	3			2½	3			
Strength of materials, continuation course.....					2	2½			
Electrical engineering.....	2	3			2	3			
Total of the maximum number of required hours.....	15½	16	12	15	15½	15½	12	13	

¹ Optional subjects may be included or omitted from the study plan according to the wishes of the student. Elective subjects are included in various combinations from among which the student must make a choice.

² Students planning to enter a wood industry after passing the final examination of the school are urged to do special practical work between the third and fourth years of study.

Licentiate in Engineering (Teknisk Licentiat) (Tekn. L.).—The degree of licentiate in engineering may be attained by the holder of a diploma from any one of the nine departments of the Institute of Technology of Stockholm on completion of 2 years of supplementary study in two engineering subject fields, the presentation of a satisfactory research paper in one of these fields, and success in the examination for licentiates in engineering (teknisk licentiatexamen).

Doctor of Technology (Teknologie Doktor) (Tekn. D.).—The degree of doctor of technology is conferred on a licentiate in engineering after the preparation of an approved dissertation on some phase of his major field of study and success in the public defense of this dissertation.

Examination for licentiate in engineering (Teknisk licentiatexamen).—This examination includes at least two subjects in engineering each of which must be represented by a professor at the Institute. In his major

Table 16.—Plan of study in Mechanical Engineering for academic year 1949-50—Third year, groups III and IV

(Numbers in parentheses are for optional subjects, those in brackets for elective subjects)¹

Subjects of instruction	Average number of hours a week								
	Group III Production techniques				Group IV Heat and ventilation				
	Fall semester		Spring semester		Fall semester		Spring semester		
	Lec.	Lab.	Lec.	Lab.	Lec.	Lab.	Lec.	Lab.	
1	2	3	4	5	6	7	8	9	
THIRD YEAR									
Mathematical statistics, general course	1	1							
Machine elements, continuation course	2	4		1½	1	1			
Mechanical technology, general course	2	1	2	2	2	1	2		
Industrial economics and organization, general course		1							
Machine tools, general course				4					
Steam techniques:									
Lesser course	2		1	3					
General course									
Water motors and pumps, lesser course	2	1	1	1	2	3	3	3	
Combustion techniques:									
Lesser course	(2)				(2)				
General course			(2)	(3)			(2)	(3)	
Heating and ventilation, general course			3	4			3	4	
Casting and moulding techniques			2	½			2	½	
Mechanical technology of wood ²			(2)	(2)½			(2)	(2)½	
Transportation arrangements, general course	2½	3			2½	3			
Surface treatment of wood and metals			1						
Electrical engineering	2	3			2	3			
Water and sewage system, general course					(2)	(2)			
Building	(2)	(3)			2	3			
Building hygiene and sanitation	(2)	(2)	(2)	(2)	2	2	2	2	
Total of the maximum number of required hours	15½	16	14	18	15½	17	15	16½	

¹ Optional subjects may be included or omitted from the study plan according to the wishes of the student. Elective subjects are included in various combinations from among which the student must make a choice.

² Students planning to enter a wood industry after passing the final examination of the school are urged to do special practical work between the third and fourth years of study.

subject the student must make at least the mark "approved with praise." Qualified for admission to study for the licentiate examination in engineering is one who has passed the examination for civil engineer or corresponding leaving examination (p. 49) offered either by the Royal Institute of Technology of Stockholm or by Chalmers Institute of Technology.

Assuming that the student made at least the mark "approved with outstanding praise" in the examination for civil engineer or corresponding leaving examination in each of the two subjects to be included in the licentiate examination in engineering his work with reference to courses in preparation for the licentiate examination should be arranged for a normal period of 4 semesters of full-time study beyond his leaving examination.

The requirements for the mark approved in the licentiate examination in engineering correspond with reference to information to those for the mark "approved with outstanding praise" and "praiseworthy" in the examination for civil engineer or corresponding leaving examination. In

Table 17.—Plan of study in Mechanical Engineering for academic year 1949-50—Fourth year, groups I and II

(Numbers in parentheses are for optional subjects, those in brackets for elective subjects)¹

Subjects of instruction	Average number of hours a week							
	Group I Power techniques				Group II Engineering construction			
	Fall semester		Spring semester		Fall semester		Spring semester	
	Lec.	Lab.	Lec.	Lab.	Lec.	Lab.	Lec.	Lab.
1	2	3	4	5	6	7	8	9
FOURTH YEAR								
Methods of numerical estimates, continuation course			(2)	(2)			(2)	(2)
Engineering physics		(1½)	(1½)			1½	1½	
Engineering hygiene	1		1		1		1	
Refrigeration techniques	[2]	[4]						
Industrial economics and organization, general course	5	1			5	1		
Machine tools, continuation course					4	4		2
Steam technique:								
Greater general course	[2]	[3]						
Continuation course		[3]		[3]				
Water motors and pumps:								
Greater general course	[2]	[3]						
Continuation course		[3]	[1]	[3]				
Construction course						[2]		[2]
Combustion motor techniques:								
Greater general course	[3]	[3]						
Continuation course						2		2
Construction course						2		2
Welding techniques	1½	1		1	1½	1		1
Mechanical technology of wood					(2)	(2)		
Transportation arrangements, continuation course					[1]	[4]		
Transport vehicles					[3]	[4]		
Paper production	(3)	(4)						
Metallurgy and heat treatment					2	1		2
Light metals and alloys							(2)	
Maximum number of required hours	15	12	3½	4	19	14½	4	7

¹ Optional subjects may be included or omitted from the study plan according to the wishes of the student. Elective subjects are included in various combinations from among which the student must make a choice.

some instances there are additional special requirements, such as a bibliography on the literature of the subject area concerned.

The requirements for the mark "approved with praise" usually include the preparation of a theme worthy of acceptance by a professional publication in engineering.

For the mark "praiseworthy" there are generally no requirements beyond those for the mark "approved with praise." With reference to the licentiate examination in engineering "praiseworthy" is a mark of quality determined by the scientific worth of the theme required for the mark "approved with praise."

Statistics.—According to *KTH, Its Organization, Staff, Laboratories and Current Research Work*, issued in March, 1949 by the Royal Institute of Technology of Stockholm the Institute at that time had a staff of 435 members comprising 56 professors, 2 demonstrators, 79 associate professors, 33 lecturers (docents), 72 assistant teachers, and 193 instructors. The student body comprised: Regular students, 1,686; special students, 220; extra students, 129; and students preparing for the licentiate examination, 34; making a total of 2,069 students.

Table 12.—Plan of study in Mechanical Engineering for academic year 1949-50—Fourth year, groups III and IV

(Numbers in parentheses are for optional subjects, those in brackets for elective subjects)¹

Subjects of instruction	Average number of hours a week							
	Group III Production techniques				Group IV Heat and ventilation			
	Fall semester		Spring semester		Fall semester		Spring semester	
	Lec.	Lab.	Lec.	Lab.	Lec.	Lab.	Lec.	Lab.
1	2	3	4	5	6	7	8	9
FOURTH YEAR								
Methods of numerical estimates, cont. course			(2)	(2)			(2)	(2)
Engineering physics		(1½)	(1½)					
Engineering hygiene	1		1		1		1	
Refrigeration techniques					2	4		
Mechanical technology, continuation course	3	4	1	2				
Industrial economics and organization:								
General course					5	1		
Continuation course (industrial engineering)	1		1	1				
Continuation course (engineering economics and administration)	1		1	1				
Machine tools, continuation course	4	3						
Steam techniques, greater general course					2	3		
Heating and ventilating, general course					4	6	1	4
Welding	1½	1		1	1½	1		1
Mechanical technology of wood	(2)	(2)			(2)	(2)		
Transportation arrangements, cont. course	(1)	(4)						
Paper production	(3)	(4)						
Metallography and the production heat treatment	(2)	(1)		(2)				
Technique of light metals and alloys			(2)					
Maximum number of required hours	17	12	5½	5	12	15	3½	5

¹ Optional subjects may be included or omitted from the study plan according to the wishes of the student. Elective subjects are included in various combinations from among which the student must make a choice.

CHALMERS INSTITUTE OF TECHNOLOGY**(Chalmers Tekniska Högskola)**

Departments (Avdelningar).—Chalmers Institute of Technology at Gothenburg comprises the following 6 departments. Instructors in general subjects are grouped in the Department of General Sciences which, however, has no students of its own.

General Sciences (Avdelningen för allmänna vetenskaper)

Shipbuilding (Avdelningen för skeppsbyggnad)

Electrical Engineering (Avdelningen för elektroteknik)

Civil Engineering (Avdelningen för väg—och vattenbyggnad)

Chemical Engineering (Avdelningen för kemi)

Architecture (Avdelningen för arkitektur)

Instruction and Examinations.—Instruction and examinations are governed by the same regulations as at the Royal Institute of Technology of Stockholm. Except for the Department of Architecture in which instruction leads to the examination for architects (p. 51) instruction in the five remaining departments leads to the examination for civil engineers (p. 51). The Institute also offers the licentiate examination in engineering (p. 53). Further, one who has attained the licentiate in engineering at either of the two institutes of technology in Sweden may after the preparation, presentation, and public defense of an approved doctoral dissertation attain the degree of doctor of technology at the Institute.

Each of the departments offers a 4-year course. With reference to practical work the requirement for admission to the leaving examination in the Department of Shipbuilding is completion of at least 12 months of practical work, in the Department of Chemical Engineering at least 4 months, and in each of the four remaining departments at least 6 months.

Statistics.—During academic year 1951-52 the student body at Chalmers Institute of Technology comprised: Regular students, 1,089; special students, 78; and extra students, 93; making a total of 1,260 students.

The distribution of students by departments was: Mechanical Engineering, 235; Shipbuilding, 77; Electrical Engineering, 329; Civil Engineering, 244; Chemical Engineering, 109; Architecture, 95; Special and extra students, 171.

THE COLLEGES OF DENTISTRY

(Tandläkarhögskolorna)

The College of Dentistry in Stockholm (Tandläkarhögskolan i Stockholm) had its origin in a polyclinic established in 1865 by the Swedish Dental Society and a polyclinic for teeth diseases of 1877. The College opened as a State dental polyclinic in 1884 and in 1898 became a dental institute under the control and management of the Caroline Medico-Surgical Institute. The charge of its affairs was transferred to its own faculty in 1924 when it came under the direct supervision of the Chancellor of the Universities of the Kingdom.

In 1945 Riksdagen (Swedish Parliament) decided to establish two additional dental colleges. The first of these was opened in Malmö in the spring of 1947 with temporary location at the General Hospital and is intended to accommodate the admission of 80 new students each year.

According to regulations issued in the fall of 1947 the dental colleges of Stockholm and Malmö are organized as independent institutions, each under the direction of its Faculty Council comprised of the professors of odontological subjects, two representatives from the Caroline Medico-Surgical Institute in the case of the College of Dentistry in Stockholm and from the Faculty of Medicine of the University of Lund in the case of the College of Dentistry of Malmö (Tandläkarhögskolan i Malmö), and of the holders of independent laboratory positions in odontological subjects. At each of the two colleges the Faculty Council selects one of its professors to serve as rector for a period of 3 years at a time.

Entrance requirements.—According to regulations effective as of January 1, 1949, application for admission as a student at a dental college should be directed to the University Chancellor the latest by January 2 and August 5, and sent to the college which the applicant wishes to attend. The application should be accompanied by evidence that the applicant is a Swedish citizen, and has passed the student examination with at least the mark "approved" in (1) physics and (2) chemistry according to the requirements of the realgymnasium, and in (3) mathematics, and (4) biology and hygiene according to the requirements of the Latin or the realgymnasium. The requirements in mathematics at the realgymnasium are those of the general course. At the time of admission to the College of Dentistry the student is given a study and service book (Studie och Tjänstgöringsbok) in which is kept a complete record of his courses, examinations, practical work, and the marks made.

At each college the student body is organized into an Odontological Association in which membership is compulsory.

Examinations.—The examinations in dentistry are the candidate examination in dentistry and the dental examination.

Candidate examination in dentistry (tandläkarkandidatexamen).—Preparation for this examination is given in the form of courses which may be completed within 1 year. The main subjects of the examination in each of which a tentamen must be taken, are (a) anatomy, (b) histology and embryology, (c) chemistry, (d) physics and physiology; and the following special courses, each of which ends with *slutförhör* (test) (a) special dental anatomy, (b) special dental histology, (c) propaedeutic bite study, (d) general bacteriology.

To pass the candidate examination in dentistry the student must make a passing mark in each tentamen and *slutförhör* in the required subjects of the examination.

The first semester is devoted to the study of anatomy, special dental anatomy, histology and embryology and special dental histology, and to beginning study of physics and physiology. The second semester is devoted to the completion of physics and physiology, and to the study of chemistry, propaedeutic bite analysis, and general bacteriology.

Except for special dental anatomy and propaedeutic bite analysis which are studied at the Dental Colleges of Stockholm and Lund, respectively, the instruction is carried on mostly at the institutes of the Caroline Medico-Surgical Institute for the Dental College of Stockholm and at the Institutes of the Medical Faculty of the University of Lund for the Dental College of Malmö.

Dental examination (tandläkarexamen).—After passing the candidate examination in dentistry preparation for the dental examination may be completed normally in 4 years. The dental examination comprises the following subjects in each of which an individual examination (tentamen) must be taken: tooth decay, prosthesis, dental surgery, odontological orthopedics, dental x-ray diagnosis, general pathology, pharmacology; and the following subjects, each of which closes with a test (*slutförhör*): general surgery, internal medicine, histopathology of teeth, care of children's teeth, bite analysis and paradontoprosthesis (paradontoprotetik), materials. In addition the student must present evidence that each of the following courses have been completed: special bacteriology; topographic anatomy; ear, nose, and throat diseases; social odontology.

A student who has received a work certificate from the polyclinics and laboratories of the Dental Institute shall take a tentamen or *slutförhör* (depending on which is required) in the subject in which the work was performed. Admission to the dental examination requires at least the mark approved in the tentamen or *slutförhör* in each of the subjects of the examination, and evidence of having attended courses in the remaining subjects.

Each term has a total of 90 days of instruction and of laboratory and clinical work except the tenth which comprises a total of 62 days of instruction and laboratory and clinical work, 10 days of home study, and a tentamen period of 18 days.

The *third* term is devoted to instruction and practical work in prosthesis and in bite analysis and paradontoprosthesis and to courses in study of materials and general pathology.

The *fourth* term is devoted to instruction and practical work in prosthesis and in dental surgery; and to courses in topographic anatomy and pharmacology.

The *fifth* term is devoted to instruction and practical work in tooth decay, dental x-ray diagnosis and odontological orthopedics; and to general surgery part I through a series of lectures.

The *sixth* term is devoted to instruction and practical work in tooth decay, dental surgery, dental x-ray diagnosis, bite analysis with paradontoprosthesis and histopathology of teeth; and to general surgery II and a course in internal medicine.

The *seventh* and *eighth* terms are devoted to instruction and practical work in tooth decay and in prosthesis. In addition lectures are given in x-ray diagnosis.

The *ninth* semester is devoted to instruction and practical work in tooth decay, prosthesis, odontological orthopedics, child care, and to bite analysis and paradontoprosthesis; and to a course in special pathology.

The *tenth* term is devoted to instruction and practical work in tooth decay, dental surgery, and in odontological orthopedics; and to courses on ear, nose, and throat diseases and on social odontology.

ROYAL PHARMACEUTICAL INSTITUTE

(Kungl. Farmaceutiska Institutet)

The Royal Pharmaceutical Institute at Stockholm was established in 1837 by the Apothecaries Society. In 1901 it was reorganized and attained its present name. The Institute is under the general supervision of a Board of Directors and under the immediate direction of its Rector and Faculty Council. Its purpose is to give theoretical and practical instruction to those who wish to pursue pharmaceutical work and to further the development of sciences within the area of a complete pharmaceutical education.

The academic year comprises 2 semesters, a fall term from September 1 to December 15, and a spring term from January 15 to May 31 with a vacation extending from 3 days before Easter to 3 days after Easter.

The pharmaceutical examinations are the candidate examination in pharmacy and the pharmaceutical examination. The candidate examination in pharmacy serves two functions. It serves as a preparatory examination for those who are planning to take the pharmaceutical examination and as a final examination for those planning to serve in positions in drug stores which may be filled by candidates in pharmacy. Prior to 1945 preparation for the candidate examination in pharmacy was uniform regardless of the purpose for which the examination was taken. Since 1945, applicants planning to prepare for the pharmaceutical examination have been placed in group A and those not planning to take the pharmaceutical examination in group B. After completion of at least 1 year of practical work in a drug store group B pupils take a modified course in preparation for the candidate examination. This modified course differs from the regular course mainly in that the requirements in physics and chemistry are somewhat lower. Those who take the candidate examination in pharmacy in group B are not qualified for admission to study in preparation for the pharmaceutical examination.

Candidate examination in pharmacy (farmacie kandidatexamen).— Pharmaceutical training begins with 2 years of work at a drug store as an *apotekselev* (drug store pupil). Admission for this is granted each year by the Medical Board (Medicinal Styrelsen) to a limited number of applicants. For admission the applicant must be of good health and reputation, free of any ailment that might interfere with work in a drug store, and not more than 25 years of age. In his maturity examination or in a supplementary examination he must have made at least the mark approved in biology and hygiene in the Latin- or realgymnasium; and in mathematics (general course), physics and chemistry in the realgymnasium. The training is under the direction of the manager of the drug

Table 19.—Plan of studies for the candidate examination in pharmacy

Subject	Total number of hours for—	
	Lectures	Laboratory
1	2	3
Chemistry.....	60	120
Pharmaceutical chemistry.....	15	50
Botany.....	50	()
Pharmacognosy.....	25	()
Pharmaceutical technology.....	25	
Pharmaceutical law.....	25	
Pharmaceutical sterilization technique.....	8	15

Plus 20 hours for excursions.

store concerned and under the general control of the Medical Board. On completion of this prescribed training at a drug store the student is qualified for admission to the course for the candidate examination in pharmacy at the Pharmaceutical Institute. The course is 2 semesters in duration and closes with the candidate examination in pharmacy. Some idea of the work of the course may be attained from the program of studies given in table 19.

Pharmaceutical examination (apotekarexamen).—A candidate in pharmacy who wishes to continue his studies in preparation for the pharmaceutical examination must serve in a drug store for at least 12 months after passing the candidate examination. On completion of this 1 year of service he is entitled to admission to the course for the pharmaceutical examination at the Pharmaceutical Institute. This course is 4 semesters in duration and closes with the pharmaceutical examination. The subjects of the course with the approximate total number of hours of lectures and laboratory work are given in table 20.

Table 20.—Plan of studies for the pharmaceutical examination

Subject	Number of hours per school year			
	I		II	
	Lecture	Laboratory	Lecture	Laboratory
1	2	3	4	5
Inorganic and physical chemistry and inorganic pharmaceutical chemistry.....	110	430		
Organic chemistry and organic pharmaceutical chemistry.....			110	430
Analytical chemistry.....	25		25	
Botany.....	110	100		
Pharmacognosy.....			110	100
Physics.....	40	40	25	25
Pharmaceutical microbiology.....		30		30
Pharmaceutical technology.....			55	72
Pharmaceutical law and history of pharmacy.....	80			

CENTRAL INSTITUTE OF GYMNASTICS

(Gymnastiska Centrallinstitutet)

The Central Institute of Gymnastics at Stockholm was established through a Royal letter of May 5, 1813. Its first director was Per Henrik Ling, the founder of the Swedish or Ling system of gymnastics. According to Royal regulations of June 22, 1934, instruction at the Institute is di-

vided between a 2-year course for teachers of gymnastics leading to the title of Director of Gymnastics (*Gymnastikdirektör*), and a 2-year course for physiotherapists.

The academic year comprises 2 semesters. The fall semester begins on September 1 and ends on December 20. The spring semester extends from January 8 to June 21 in the course for teachers of gymnastics, and to May 31 for physiotherapists.

Instruction at the Institute is free, but students may be required to pay a fee for the materials they use. The students also furnish their own outfits as prescribed by the school and pay for any travel necessary in connection with their instruction.

Course for teachers of gymnastics (Gymnastiklärarlinjen).—For admission to the course for teachers of gymnastics the applicant must have a strong and healthy physique, a marked aptitude for work in gymnastics, and must not be more than 29 years of age at the beginning of the calendar year in which entry is sought. With reference to educational requirements the applicant must have:

1. Made in the realexamen or in an examination supplementary thereto at least the mark approved in all subjects, except French, included in the study plan for the highest class of the realskola and, in addition, made in accordance with the prescribed regulations for examinations supplementary to the student examination at least the mark approved in physics, chemistry, and in biology including hygiene, according to the requirements of the student examination; or
2. Attained an approved leaving certificate from a municipal or private school for girls with normal school competence (p. 10) showing that he made in the leaving examination or in a supplementary examination at least the mark approved in each of two modern foreign languages; and, in addition, qualified as mentioned in item 1 in physics, chemistry, and biology including hygiene; or
3. Passed the student examination with success and in this or in subsequent supplementary examination made at least the mark approved in physics, chemistry, biology including hygiene; or
4. Passed the examination for elementary school teachers (p. 23) and, in this or subsequent supplementary examination made at least the mark "approved with praise" in each of physics, chemistry, biology including hygiene, mathematics, German, and English; or
5. Attained the leaving certificate of the Higher Seminary for Women Teachers qualifying the holder as secondary school teacher of theoretical subjects and made at least the mark approved in zoology, botany, physics

including astronomy, and in chemistry including mineralogy and geology.

Because of the large number of applicants presenting certificates for the student examination admission in recent years, with few exceptions, has been granted only to those who have passed the student examination.

Examination for teachers of gymnastics (Gymnastiklärarexamen).—The subjects of this examination with a brief summary of the work offered in each are:

1. *Anatomy.*—Elements of normal human anatomy, particularly the organs of movement.
2. *Physiology.*—Elements of the functions of the human body and the physiological theory of movement.
3. *Theory of gymnastics.*—Basic principles of gymnastics, aim, movement apparatus, methods and application. The main outline of its history.
4. *Theory of games and athletics.*—Purpose, organization, methods, and practical use of games and athletics. The main outline of their history.
5. *Psychology and pedagogics.*—Elements of pedagogical psychology and pedagogics.
6. *Hygiene.*—Principles of home, school, athletic, racial, and personal hygiene.

Table 21 which follows gives the curriculum of studies for the 2-year course in preparation for the examination for teachers of gymnastics.

Table 21.—Curriculum of studies for the 2-year course for teachers of gymnastics

(Numbers in parentheses are for women only)

Subject	Number of hours a year	
	I	II
I	2	3
<i>Theoretical subjects</i>		
Psychology.....	108(157)	64
Gymnastics.....	160	158(172)
Games and athletics.....	84(75)	65(61)
Psychology and pedagogics.....	52	56
Posture.....	25	
Anatomy.....		96
Samaritan course.....		16
<i>Practical subjects</i>		
Pedagogical gymnastics:		
Personal training.....	160(155)	165(169)
Practical teaching.....	158(189)	164(177)
Games and athletics.....	382(340)	390(355)
Voice training.....		12

Course for physiotherapists (Sjukgymnastiklinje).—For admission to the course for physiotherapists the applicant must have a strong and healthy physique, good aptitude for handling patients, and must be at least 19 but less than 30 years of age at the beginning of the calendar year in which admission is sought. In addition he must have worked for at least 3 months in a public hospital assisting in the care of the sick. With reference

to educational qualifications a woman must have passed either the real-examen or the student examination; or attained the leaving certificate from a municipal or a private school for girls with normal school competence. Again the prospects of admission for one who has not passed the student examination are small because of the large number of applicants able to present certificates for the student examination.

The regular requirement for admission for men is success in the examination for teachers of gymnastics.

Examination for physiotherapists (Sjukgymnastexamen).—The subjects of this examination are anatomy, physiology, general pathology, hygiene, pathology, and physiotherapy. The number of hours devoted to each of these subjects during academic year 1947–48 and a brief summary of the work in each subject follows:

Theoretical subjects

1. *Physiology.*—Physiology of muscles, nervous system, blood circulation, breathing, digestion, skin, kidneys, organs of elimination, and inner secretions with special stress on phases of significance for physiotherapists. (96 hours)
2. *Anatomy.*—Survey of the descriptive and topographical anatomy of the human body. A more detailed study of the peripheral nerve system with special stress on the movement apparatus. Plastic anatomy with demonstration on a living model. A brief survey of constitutional anatomy, theory of heredity, and histology. (130 hours)
3. *General pathology.*—History, inner and external causes of disease with bacteriology, digestive and circulatory disturbances, inflammations, degeneration, swellings. (32 hours)
4. *Samaritan course.*—Treatment of sores and study of bandaging, first aid, sudden attacks of illness, poisonings, injuries caused by freezing, burns, and war. Artificial breathing. (15 hours)
5. *Hygiene.*—Vital statistics, infectious diseases, technical hygiene. Hygiene of the home, school, and place of work. Accidents in connection with work. Hygiene of nutrition and of bodily movements. Personal hygiene. (32 hours)
6. *Propaedeutics of physiotherapy.*—Lectures in history of massage and movement treatment, means and forms, technique, medical use. Physiotherapy ethics. Social and legal status of the physiotherapist. Exercises in massage. (Second year—60 hours)
7. *Physiotherapy clinic and polyclinic.*—Work with patients in physiotherapy clinic. Keeping of the patient's progress record and performance of other duties connected with the work of a physiotherapist. (Hours not given).
8. *Diseases.*—Lectures illustrated with lantern slides and demonstrations with patients particularly injuries and diseases of the motor apparatus and other ailments indicating physiotherapy. Lectures on the more important groups of other ailments. (Hours not given)
9. *Special courses.*—(a) Nerve diseases: (20 hours) Presentation of the physiology and pathology of the nerve system from the viewpoint of physiotherapy. (b) Plaster casts, bandaging and prosthesis: (10 hours). (c) Methods of treatment such as heat, light, hydrotherapy, and diathermy: (20 hours).

Practical subjects

10. *General gymnastics, games, and athletics.* (96 hours)

11. *Physiotherapy practice.*—First year—630 hours, second year—216 hours.

Foreign students.—Insofar as accommodations are available foreign students may be admitted to the Institute either as regular or as special students. For this they either must have passed the student examination or possess corresponding academic qualification. In practice, it is difficult for a foreigner to obtain admission to the Institute unless he already has studied physical education or physiotherapy in his own country. Admission to examination by a foreign student requires Royal approval. The application for admission for a foreign student must be presented to the Institute by the diplomatic representative of the country concerned.

Table 22.—Student enrollment, 1945-46 through 1947-48

	1945-46	1946-47	1947-48
1.	2	3	4
Course for teachers of gymnastics:			
Men	37	48	45
Women	58	66	59
Course for physiotherapists:			
Men	5	5	2
Women	52	71	68
Total	152	190	174

The Royal University of Lund was founded in 1666 and opened 2 years later.

COLLEGE OF VETERINARY MEDICINE**(Veterinärhögskolan)**

The College of Veterinary Medicine in Stockholm was opened on February 16, 1821, and became a Veterinary Institute in 1867. It attained its present name in 1914. The school is governed by a board of directors and is under the immediate direction of its rector and faculty. The academic year comprises a fall term from September 1 to December 20 and a spring term from January 12 to May 31. Clinical work is continuous throughout the calendar year.

Admission.—Admission is dependent upon a certificate of having passed the student examination and made either in that examination or in a supplementary examination at least the mark approved in biology with hygiene in the Latin or real line; and at least the same mark in mathematics (general course), physics and chemistry in the real line. Each year about 30 students are admitted from among 50 to 60 applicants.

Examinations.—The examinations offered by the school are the candidate examination in veterinary medicine and the examination in veterinary medicine. Each of these two examinations requires about 2½ years of preparation. Ordinarily, however, preparation for admission to the examination in veterinary medicine requires a total of at least 6 years.

Candidate examination in veterinary medicine (veterinärkandidatexamen).—The subjects of this examination are anatomy, histology, medical chemistry, physiology, pharmacology, general pathology. To pass the examination the student must make at least the mark approved in each of the examination subjects.

Examination in veterinary medicine (veterinärexamen).—After passing the candidate examination in veterinary medicine the student must complete the following practical work: 234 days of service in the surgical clinics, 234 days of service in the medical clinic for non cud-chewing animals, 72 days of service in the obstetrics and gynecology clinic, and 50 days of service in the medical clinic for cud-chewing animals. Simultaneously he must attend lectures and courses in the various subjects of the examination in veterinary medicine. These subjects are pathological anatomy, horseshoeing, riding and driving, medicine for non cud-chewing animals, surgery, obstetrics and gynecology, medicine for cud-chewing animals, hoof diseases, breeding biology and hygiene of domestic animals, veterinary State medicine, food hygiene, parasitology and bacteriology, epizootiology.

Statistics.—During academic year 1950-51 the College of Veterinary Medicine had a total of 266 students.

ROYAL COLLEGE OF AGRICULTURE

(Kungl. Lantbrukshögskolan)

General data.—The Royal College of Agriculture of Uppsala was founded in 1840 as a central agricultural institute and opened in 1849. Work according to its present organization began in 1932. The academic year comprises a fall term extending from November 1 to about December 21, a spring term from January 13 to the middle of June, and a fall term from the first of August to the end of October.

Admission.—The student body comprises regular and special students. Regular students (ordinarie studerande) follow instruction in preparation for admission to an examination. Special students (specialstuderande) pursue instruction in one or more subjects according to their own choice with the right to take a tentamen and receive a report concerning their information.

Admission as a regular student is open to one who has:

1. Passed the student examination and in this or in a supplementary examination made at least the mark approved in Swedish, German, or English; biology with hygiene; mathematics, physics, and chemistry according to the requirements of the student examination in the realgymnasium; and who in addition can present evidence showing information corresponding to completion of requirements for promotion to the next to the highest class of a 4-year gymnasium in geography and in the above-mentioned foreign languages; or

2. Received a leaving certificate from the special gymnasium for agricultural, dairy, and forestry students at Hvilan, Åkarp.

With reference to experience the applicant should present evidence of completion of 2 years of well-recommended practical work in agriculture. The practical work may include a course at an agricultural school or at a *lantmanna* school with a school farm.

Admission as a special student is open to one who can show to the satisfaction of the Faculty Council that he has sufficient information to follow the instruction offered.

Examinations.—The examinations offered by the Royal College of Agriculture are the examination for agronomers and the licentiate examination in agronomy.

Examination for agronomists (agronomexamen).—This examination requires at least 3 years of study at the College of Agriculture and is offered in the four lines of: Agriculture (jordbrukslinjen), Domestic animals (hudadjurslinjen), Economics (ekonomiska linjen), and General line (allmänna linjen). Except for "forest care" (skogsskötsel) all the 28 examination subjects are included in each line. Specialization is brought about through a comparatively heavy concentration in subjects most important to the line concerned.

In each line the examination comprises two parts. Part I is devoted mainly to mathematics natural-science subjects; Part II to the special agricultural subjects. Thus Part I of the examination in the agricultural line comprises the tentamen subjects agricultural botany, agricultural chemistry, soil, and the test subjects physics and meteorology, law, anatomy and physiology of domestic animals, mathematics, microbiology, economics, statistics, and theory of inheritance.

Part II comprises the tentamen subjects agronomical hydrotechnics, general agriculture, machinery and implements, plant cultivation, and the test subjects housebuilding, breeding of domestic animals, hygiene and pathology of domestic animals, feeding and care of domestic animals, agricultural bookkeeping, agricultural economics, agricultural zoology, marketing and agricultural policies, milk economics, pedagogics and plant pathology.

Licentiate examination in agronomy (agronomie licentiatexamen).—Qualified for admission to this examination is one who has passed the



The Royal College of Agriculture at Ultuna

examination for agronomists. The licentiate examination includes two subjects each of which must be represented by a professor at the College of Agriculture. These subjects are: agricultural chemistry, anatomy and physiology of plants, systematic botany, study of inheritance, microbiology, anatomy and physiology of domestic animals, soil, agronomical hydrotechnics, general agriculture, plant cultivation, breeding of domestic animals, feeding and care of domestic animals, agricultural economics and marketing. One of the two subjects should be a major.

To pass the examination the examinee must make a total of at least 3 credit units in the two subjects of the examination, including at least 2 credit units in the major subject and at least 1 credit unit in the second subject. In addition to an oral examination in the major subject the student must prepare also an approved theme on some phase of the subject.

Degree of doctor of agronomy (agronomie doktorsgrad).—This degree may be attained by a licentiate in agronomy after the preparation, presentation, and public defense of an approved dissertation on a phase of one of the following subjects: agricultural chemistry, anatomy and physiology of plants, systematic botany, theory of inheritance, microbiology, anatomy of domestic animals, soil, agronomical hydrotechnics, general agriculture, plant cultivation, breeding of domestic animals, feeding and care of domestic animals, agricultural economics, and commercial science.

THE AGRICULTURAL DAIRY AND GARDENING INSTITUTE OF ALNARP

(Alnarps Lantbruks, Mejeri- och Trädgårdsinstitut)

The Agricultural Dairy and Gardening Institute of Alnarp generally known as the Institute of Alnarp (Alnarpsinstitutet) was founded as an agricultural institute through a Parliamentary decision of 1857. In 1861 it opened its first course for apprentices and in 1862 its first course in agronomy. A gardening school was added in 1876 and a dairy school with a higher and lower division in 1883. In line with these developments the Institute now comprises the three divisions of:

Agriculture (Lantbruksavdelning) comprising a Course for Farm Managers and the Agricultural School.

Dairying (Mejeriavdelning) comprising the Higher Course in Dairying and the Dairy School.

Gardening (Trädgårdsavdelning) comprising a Higher Course in Gardening, the School of Gardening, and the Course in Commercial Gardening.

In addition the Institute offers a 1-year practical and theoretical course for the training of farm foremen (*ladugårdsförmän*) and a 4 months' course in horseshoeing and machine repairing.

The student corps of the Institute is comprised of the students in its Higher Course in Dairying, its Course for Farm Managers, and its Higher Course in Gardening.

Higher Course in Dairying (Högre Mejerikursen).—Admission to the higher course in dairying as a regular student is open to one who is physically fit to undertake work at a dairy and can present a certificate from a physician dated not earlier than 30 days from the date of the beginning of the course showing that he has no ailment communicable to other people through milk, cream, or other dairy products; and who has:

1. Passed the student examination in the reallinje, the final examination of a technical gymnasium, or the leaving examination of the special gymnasium for students of agriculture, dairying, or forestry at the Folk High School of Vilan and in the examination concerned or in a supplementary examination made at least the mark approved in Swedish, mathematics, physics and chemistry, and in German or English.

2. Participated in barnyard work for at least 1 month.

3. After attainment of 17 years of age participated for at least 2 years as a pupil in at least 2 dairies authorized by the Department of Agriculture to take dairy students.

Admission as a special student is open to one who can show to the satisfaction of the Faculty Council of the Dairy Division that he has sufficient information to follow the instruction offered. Hospitants with no right to examinations are admitted to the extent that accommodations are available.

Engineer examination in dairying (mejeriingenjörsexamen).—Instruction in the higher course in dairying leads to the engineer examination in dairying and may be completed within 3 years. The tentamen subjects for the examination are dairy chemistry, dairy bacteriology, dairying, and dairy economics and commercial science.

The test subjects are mathematics and statistics, physics, anatomy and physiology of domestic animals, economics, machine theory, theory of house building, study of domestic animals, hygiene and nursing of domestic animals, dairy bookkeeping, law, pedagogics.

Course for Farm Managers (Driftsledarkursen).—This is a 1-year course beginning on November 1 and ending the latter part of the following October. It is intended mainly for those who wish to manage larger or medium large farms of their own or who wish to enter agricultural service. The course is limited to 30 students and is open to both men and women.

For admission to the course for farm managers the applicant must

be at least 22 years of age and present a certificate of good health signed by a physician not earlier than 3 months prior to the close of the application period. With reference to education the applicant must have completed a 1- or 2-year agricultural school with at least the mark approved with praise in agriculture, study of domestic animals, physics, chemistry, and botany; present evidence that he has a knowledge of Swedish and mathematics corresponding at least to the mark approved in the realexamen. If he has not taken the realexamen or an equivalent or higher examination he must present proof that the examinations in these subjects have been taken before a regular teacher of the subjects at a municipal middle school or at a public secondary school. As for experience, he must have participated in practical agricultural work for at least 3 years. The period of attendance at the agricultural school may be included as a part of this period of practical work.

Theoretical instruction in combination with exercises and demonstrations when such can be arranged is given in the following subjects: agricultural economics and labor, theory of agriculture, theory of domestic animals, hygiene and nursing of domestic animals, milk economics and work of the control association, cultivation techniques, farm implements and machinery, theory of housebuilding, agricultural chemistry, agricultural botany, agricultural zoology, economics, law, agricultural bookkeeping, commercial science, and forestry economics.

The student must observe the management of the Alnarp estate and keep a record of the way in which it is done.

Tentamen must be taken in each subject according to the plan of work for each term. To attain a leaving certificate the student must show to the satisfaction of the faculty council that he has made use of the instruction offered in subjects of the course. He also must make at least the mark approved in theory of agriculture, theory of domestic animals, agricultural economics and labor, cultivation techniques, farm machinery and implements, and agricultural bookkeeping.

One who has attained a leaving certificate from the course for farm managers may use the title *lantmästare*.

Higher Course in Gardening (Högre trädgårdskursen).—This course is 2 years in duration and is limited to 10 regular students. Special students and hospitants are admitted to the extent that accommodations are available. For admission the applicant must be at least 24 years of age and present a certificate of good health. The general education requirements are similar to those for the Course for Farm Managers. In addition the applicant must have completed the 2-year course of a State or State-subsidized gardening school and had at least 1 year of practical work in gardening after completion of the 2-year course in gardening.

The General Course in Gardening comprises a line in each of General

garden cultivation (Allmän trädgårdsodling) and Garden planning (Trädgårdsanläggning). Table 23 which follows gives the subjects common to both lines and the special subjects for each of the two lines. To pass the examination in either of these lines the student must make at least the mark "approved" in each subject checked with an X in the line concerned, and at least the mark "approved with praise" in the two subjects checked with XX. One who has passed the examination in either of the two lines may use the title of *Hortonom*.

Table 23.—Subjects of study in the Higher Course in Gardening

Subjects	General garden cultivation line	Garden planning line
<i>Subjects required in both lines</i>		
Mathematics.....		X
Physics and meteorology.....		
Chemistry.....	X	
Geology and marklära.....	X	X
Botany.....	X	X
Anatómy and physiology.....		
Ecology and plant geography.....		
Systematic and plant pathology.....		
Zoology.....	X	X
Cultivation techniques.....	X	X
Drawing.....	X	XX
Tools.....	X	X
Economic garden cultivation.....	XX	X
<i>Subjects required in the garden cultivation line only</i>		
Theory of inheritance and plant improvement.....		
Economics and commercial science.....		
Law.....		
Gardening economics.....	X	
Bookkeeping.....	X	
Garden planning (selected sections).....	XX	
Experiment techniques.....	X	
Use of garden products.....	X	
Pedagogics.....	X	
<i>Subjects required for the garden planning line only</i>		
House building and green house construction.....		X
Garden planning (entire subject).....		XX

THE ROYAL COLLEGE OF FORESTRY

(Kungl. Skogshögskolan)

The Royal College of Forestry was founded in Stockholm in 1826 as a private institute of forestry. It became a State institution in 1828 and was reorganized to a College of Forestry (literally "High School of For-

estry"—Skogshögakola) in 1915. Through a Royal statute of July 31, 1945, the school is charged with the task of imparting scientific and practical instruction in forestry and to further the development of forestry through scientific research.

Prior to 1936 the College of Forestry offered two courses, a higher course called "jägmästarkursen" which aimed to give training in forestry and to promote the science of forestry nationally, and a lower course called "forstmästarkursen" which in addition to imparting the necessary theoretical information aimed to give practical insight and readiness in woodcraft requisite for the position of assistant forester or for a minor position in forestry. In 1936 the lower course was dropped. To further scientific studies the College of Forestry offers also a licentiate examination in forestry. A proposal has been made for the establishment of a doctorate in forestry.

Requirements for admission.—For admission as a regular student at the College of Forestry the applicant must have a strong and healthy physique, a normal sense of color, and normal sight in both eyes either naturally or through correction with glasses. He cannot be more than 26 years of age. With reference to education and practical experience he must show that he has:

1. Passed an approved student examination or the engineer's examination at a technical gymnasium (p. 14) and in this or a supplementary examination made at least the mark approved in mathematics, physics, chemistry, biology and hygiene, and German or English. With reference to mathematics—general and special courses—physics and chemistry the requirements in the supplementary examination must have been those of the student examination at a realgymnasium; or

Received a leaving certificate from the special gymnasium for agricultural, dairy, and forestry students at Hvilan, Åkarp; or

2. Passed the realexamen or present evidence that he possesses corresponding knowledge and, in addition, in either case has passed in the prescribed manner a special examination according to the requirements of the student examination with at least the mark approved in mathematics, physics, chemistry, biology with hygiene, Swedish composition, and German or English. With reference to mathematics—general and special courses—physics and chemistry the requirements in the special examination must have been those of the realgymnasium.

3. Completed the State or corresponding charcoal school (kolarskola).

4. Participated with good marks in practical work in forestry for at least 10 months in the case of applicants who have passed the student examination or the technical student examination, and for at least 22 months in the case of other applicants, including for all applicants at least

5 months of practical work in forestry under the supervision of a higher trained forester approved by the Rector or by the Faculty Council; or Completed a State or corresponding school of forestry.

Admission as a special student is granted by the Faculty Council for 1 year at a time to one who has passed an examination at an institution of university rank or who can show otherwise that he possesses knowledge requisite for the studies he wishes to pursue. Extra students are admitted by the Rector to the extent that accommodations are available.

Examination for foresters (civiljägästarexamen).—Study in preparation for this examination begins with the 1-year preparatory course (förberedande kursen) conducted at the Crown lands of Garpenberg in South Dalarna from October 15 to September 15 of the following year. Instruction comprises the certificate subjects forest and field surveying, forest evaluation, hunting and game protection, map work; and the examination subjects forest technology, forestry, agricultural economics, and house building. In addition and to the extent that time permits, exercises in fish conservation, sports and skiing, camp work and forest technology, etc., are included.

One who has completed the preparatory course with approved marks is qualified for admission to the course for foresters called *jägästarkursen* which begins in October either the same or the following year. Instruction at the College of Forestry is divided into 3 terms: a fall term from October 1 to December 20 and a spring term from January 15 to May 15 intended mainly for lectures and practical courses; and a summer term of about 3½ months for practical exercises with work in the forest, and for travel. The course comprises 5 terms at the College in Stockholm and 2 summer terms. Instruction comprises:

1. *Certificate subjects (betygsämnen).*—Forestry, forest technology and drainage, forest evaluation and classification, forest economics, soils and forest botany, forest zoology, law and administration.

2. *Examination subjects (förhjärsämnen).*—Organic and technological chemistry, inspection of tenant farms and bookkeeping.

3. *Course subjects (kursämnen).*—Building drawing, shelter for workers, game protection, fish conservation, labor theory, estimation of the amount of water and drainage.

In addition optional instruction is offered in conservation, in the care of ancient monuments, and in other subjects that may arise.

On completion of the preparatory and regular course of the school the student is qualified to take the civil *jägästarexamen*. To pass the examination the student must have made at least the mark approved with praise in the tentamen in two of the subjects forestry care, forest technology and forestry drainage, forestry evaluation and classification, forestry economics, or in one of these subjects and in one of the basic

subjects forest soils or forest botany. The student must in addition have made at least approved in the remaining required subjects of the examination.

Licentiate examination in forestry (skoglig licentiatexamen).—Qualified to take the licentiate examination in forestry is one who after passing the *civiljägmästareexamen* has been engaged for at least 1 year in practical forest farming, forestry improvement industry (*träförädlingsindustri*), or at an institution for experimental forestry or wood techniques. The licentiate examination in forestry includes two of the following subjects of which one should be a major: forestry, forest technology and drainage, forest evaluation and classification, forest economics, soils, and forest botany.

To pass the licentiate examination the student must attain at least three credit units of which at least two must be in his major subject, and at least one in his minor. In addition to the oral examination in the major the student must prepare a dissertation on some phase of the subject. The dissertation must be approved by the examiner, and presented to the Faculty Council at least 14 days before its meeting to consider the application for the examination.

THE INSTITUTES OF COMMERCE

(Handelshögskolorna)

Sweden has two Institutes of commerce. The Institute of Commerce in Stockholm (*Handelshögskolan i Stockholm*) was founded by a Royal statute of May 29, 1909, at the request of the Commercial College Association of Stockholm, for the promotion through scientific instruction and research of commercial activity within Sweden. The Institute is governed by a board of directors comprising a chairman appointed by the King, three members selected by the Commercial College Association, and the Rector of the school. The immediate supervision of the Institute is in charge of a Rector and the Faculty Council. The Rector is appointed by the King for a period of 5 years at a time on the recommendation of the Commercial College Association. The Faculty Council is composed of the Rector and the professorial group of the faculty.

The Institute of Commerce in Gothenburg (*Handelshögskolan i Göteborg*) was founded by Royal statute of October 15, 1920, and opened October 1923. It is governed by a board of directors and aims to promote national commerce and industry through scientific instruction and research.

The academic year at the Institute of Commerce of Stockholm comprises three terms (fall, winter, and spring) and extends from the first part of October to the last part of June. The academic year at the Institute

of Commerce in Gothenburg comprises a fall semester from September 1 to December 15, and a spring semester from January 16 to June 1.

Admission.—The requirements for admission at the institutes of commerce are essentially the same. At the Institute of Commerce of Stockholm admission as a regular student is open to a man or woman of good character who has:

- (a) Passed the student examination; or
- (b) Been registered as a regular student at another college; or
- (c) Received an approved leaving (graduation) certificate from a commercial or from a technical gymnasium.

An applicant who does not have any of these qualifications but who can present complete evidence satisfactory to the Faculty Council that he is qualified to follow the instruction with advantage, may be admitted for one or more terms, with or without examination, as a "student in expectation" (*expektanselev*).

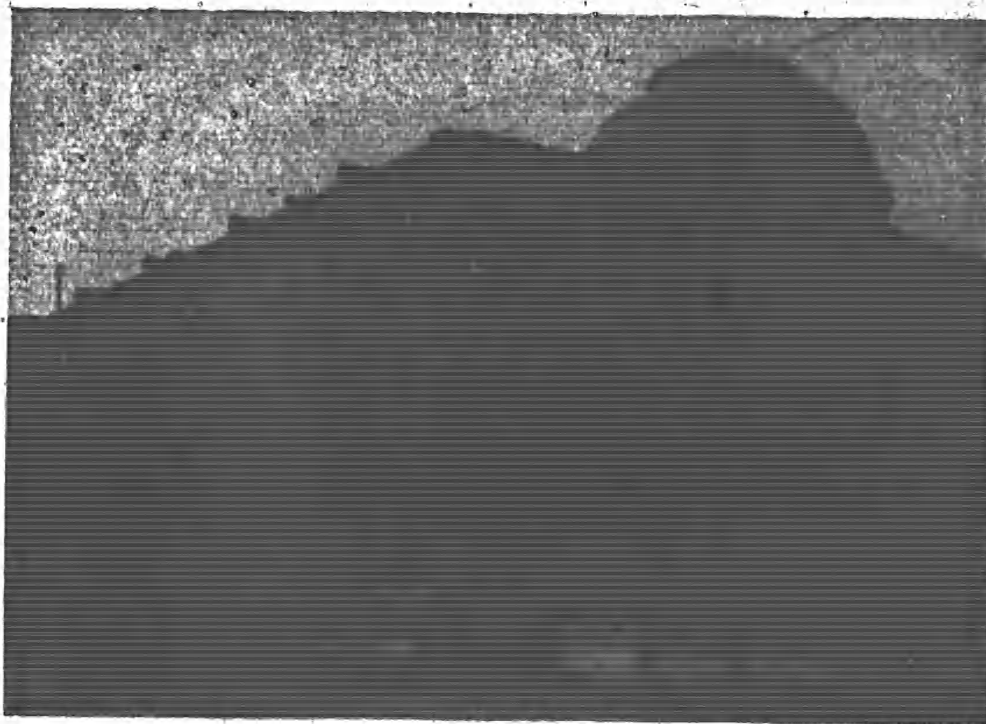
One who wishes to audit one or more subjects at the school without registration as a student may be admitted as an extra student (*extra elev*), if the rector and the instructor concerned find that accommodation is available.

Examinations.—The examinations offered by the Institutes of Commerce are the examination for economists and the licentiate examination in economics.

Examination for economists (Ekonomexamen).—The subjects of the examination for economists are: Economics; business administration; economic geography or law; and one or more of the languages: English, French, Russian, Spanish, German. The examination also includes economic history.

To pass the examination the student must make a total of at least 4 credit units in economics, business administration and economic geography or law; plus at least 1 credit unit in a language.

Licentiate examination in economics (ekonomie licentiatexamen).—This examination which is intended to show deeper and more comprehensive knowledge than the examination for economists includes one or more of the subjects economics, business administration, and economic geography. The examination is open to one who has passed the examination for economists with at least the mark "approved with praise" in each of economics and business administration, and in either economic geography or commercial law. The examination is open also to one who has passed a corresponding examination at the Commercial College of Stockholm or other Swedish Commercial College according to previous regulations.



The Institute of Commerce at Stockholm

To pass the licentiate examination in economics the student must make at least the mark "approved with praise" in one subject and write a dissertation approved by the Faculty Council on some phase of the same subject.

The doctorate in economics (ekonomie doktorsgrad).—One who has passed the examination for licentiate in economics may attain the degree of doctor in economics through the writing and public defense of a thesis on some phase of his studies in preparation for the licentiate examination. The dissertation may be written in Swedish, Danish, Norwegian, English, French, or German and shall be defended in Swedish. The Faculty Council may grant permission for the defense to be conducted in some other language, as well as for the dissertation to be published in a language other than those indicated.

ROYAL CONSERVATORY OF MUSIC

(Kungl. Musikhögskolan)

The Royal Conservatory of Music (literally "Royal High School of Music"—Kungl. Musikhögskolan) was founded in 1771 as an Academy of Music. In 1856 its school of instruction became independent and was

designated 10 years later as the Royal Conservatory of Music. It received its present name, Kungl. Musikhögskolan, in 1940. The purpose of the school is to impart a musical education to its students and to examine those who wish to qualify themselves for church music, for positions as teachers of music at State or municipal schools, or as military music directors.

Admission.—For admission the applicant must have musical talent and sufficient instruction in vocal, instrumental, or theoretical music to participate to advantage in the line of instruction he plans to pursue. For admission to the classes for organists, choristers, and music teachers, the applicant must present a certificate of having passed the real examination, or the examination for elementary school teachers, or a leaving certificate from a municipal school for girls or from a private school with normal school competence.

Further, the applicant must not be less than 15 nor more than 25 years of age except for the class in opera which accepts applicants up to 27 years of age.

Examinations.—The examinations offered by the Royal Conservatory of Music, with the number of semesters of study for each examination, and the subjects of the examination are:

1. *Examination for higher organist (högre organist examen).* 6 semesters. *Subjects:* organ, piano, harmony, tuning and care of organ, liturgy, counterpoint, form, ear training, history of music, choir singing, liturgical singing.

2. *Higher choristers examination (högre cåntors examen).* 6 semesters. *Subjects:* church singing, piano, harmony, liturgy and direction of choir, counterpoint, form, ear training, speech technique, reading, history of music, organ, choir singing, rhythm, and liturgical singing.

3. *Music teachers examination (musiklärarexamen).* 8 semesters. *Subjects:* singing, piano, violin, harmony, history of music, pedagogics, skill in teaching, direction of choir and orchestra, counterpoint, form, instrumentation, methods of school singing, ear training, speech technique, reading, cello, practice teaching, accompaniment, ensemble playing, choir singing solfege and rhythm, orchestra.

4. *Examination for military music directors (militär musikdirektörsexamen).* 8 semesters. *Subjects:* a woodwind instrument, a brass instrument, violin or cello, piano, harmony, instrumentation for military orchestra, direction of orchestra, ear training, history of music, ensemble and orchestra playing.

5. *Examination for piano tuners (pianostämmarexamen).* 4 semesters. *Subject:* piano tuning.

The title of director of music (musikdirektör) may be used by one who has passed the higher organist examination, the higher chorister examination, the examination for music teachers, or the examination for military music directors.

The school also offers a number of non-examination special courses in organ, solo singing, various instruments, such as violin, directing, and an opera course.

INSTITUTE OF ARTS

(Konsthögskolan)

General data.—The Institute of Arts at Stockholm was established in 1770 as a part of the Academy of Arts and attained its present name in 1908. The Institute is under the general supervision of the Academy of Arts and under the immediate direction of its own Director and Faculty Council.

The Institute comprises a School of Painting, a School of Sculpture, and a School of Architecture. Attached to the Institute are a School of Graphic Arts and an Institute for the Knowledge of Materials.

The academic year comprises a fall semester extending from October 7 (School of Architecture September 16) to December 20, and a spring semester from January 15 to June 1, including an Easter vacation of 1 week.

Admission.—Admission to the Schools of Painting and Sculpture is open to one who is at least 17 years of age, possesses sufficient general education to follow the instruction offered at the school, and who can:

1. Present samples of his own work in drawing, painting or sculpture indicating aptitude for the line of work he wishes to pursue.
2. Present drawings and certificates showing that he has completed a propaedeutic course in linear drawing and perspective.
3. Pass an entrance examination. In judging the entrance examination particular stress is placed on the applicant's artistic talent as shown by the examination and the samples of work presented.

The requirements for admission to the School of Architecture comprise a leaving certificate from the fourth year of the Department of Architecture at the Royal Institute of Technology of Stockholm, or at Chalmers Technical Institute, or of equivalent information; and at least 12 months of practical work in building or office work approved by the Faculty Council. The applicant should present in addition samples of his architectural and design drawings.

After acceptance as a student of the Institute and upon payment of the prescribed fees the student receives a diploma valid for the following years of study. At the beginning of each school year and upon payment of the fees for the year the diploma must be turned in to the Institute for signature by the Director and Secretary.

Schools of Painting and Sculpture (Målar- och Skulpturskolorna).—In the Schools of Painting and Sculpture the students have 3 hours of in-

struction daily in the major subjects painting and sculpture, respectively. In addition the students of each school must participate also in the instruction indicated for each of the following subjects.

Drawing.—2 hours each school day.

Architecture.—2-year course. Lectures 2 hours a week, practical work 4 hours. The first year is devoted to general architectural construction and form; the second to special architectural problems in the field of painting and sculpture, respectively.

Plastic Anatomy.—2-year course. Lectures 4 hours a week. The work of each year closes with a tentamen.

Perspective.—1-year course. Lectures and exercises together 2 hours a week. The work of the year closes with a tentamen.

History of Art.—3-year course giving a survey of world history of art. Lectures 2 hours a week. Students who wish may take a tentamen and receive a certificate.

Knowledge of Materials.—1-year course. Lectures and Seminar exercises 2 hours a week; practical exercises 6 hours a week. The work of the year closes with a tentamen.

Students in the Schools of Painting and Sculpture may be registered at the Institute of Art for at most 5 years. In the case of illness or other cause acceptable to the Faculty Council the student may be registered for at most 6 years.

At the time of leaving a student of the School of Painting or of Architecture may receive on request an excerpt from the matriculation record of his studies at the school signed by the Secretary of the Institute of Art.

School of Architecture (Arkitekturskolan).—The School of Architecture aims to prepare opportunity for its students through study and solution of building, municipal planning, and restoration projects, including a more comprehensive project in one of these fields, and through study of older building art to broaden their view of building problems and to further the development of architecture from the artistic and technical as well as civic viewpoint.

The plan of studies in the School of Architecture is arranged so that it may be completed within 1 year by a student devoting most of his working hours to the course as outlined. A part-time student must complete the course within at most 3 years. The work of the School of Architecture comprises:

1. The independent solution and working out of a prize project in architecture, municipal planning, or restoration planned each year by the Faculty Council.
2. The handling of some 10 lesser projects in architecture and municipal planning each one of which may be solved independently, through seminar exercises, or cooperatively, as the Director of the School may determine.

3. Seminar exercises in Swedish and comparative history of architecture.
4. Course in the restoration and care of historical buildings, including one practical restoration project.
5. Instruction in the art of municipal planning.

On completion of the course the student receives a certificate giving the mark he made in each of his subjects of instruction and indicating any prize he may have earned while a student of the School.

School of Graphic Art (Skolan for Grafisk Konst). — The School of Graphic Arts offers a 1-year course of 9 hours of instruction a week on the various methods of procedure in graphic arts. After completion of the course the student is given on request an excerpt from the matriculation records of the school signed by the Secretary of the Institute of Art.

Bibliography

Source Material

(Swedish)

Catalogues, study handbooks, examination regulations, reports, etc., from the State Universities of Uppsala and Lund, the Caroline Medico-Surgical Institute, the private Universities of Stockholm and Gothenburg, the Royal Institute of Technology of Stockholm, Chalmers Institute of Technology, and from various other institutes, colleges, and schools.

Ecklesiastikdepartementet. Bilaga 10 till Statsverkspropositionen År 1950. Åttonde huvudtiteln. Utdrag av protokollet över ecklesiastikärenden, hållet inför Hans Maj:st Konungen i statsrådet å Drottningholms slott den 4 januari 1950. Stockholm, Ivar Haeggströms Boktryckeri A. B., 1950. 471 p.

Ecklesiastikdepartementet. Statens Offentliga Utredningar:

1941:27. Betänkande med Utredning och Förslag angående Läkutbildningen. I. Utbildningen till Medicine Licentiatexamen. Stockholm, Tryckeri Aktiebolaget Thule, 1941. 376 p.

1943: 7. 1940 Års Skolutrednings Betänkanden och Utredningar. Bilaga I. Hygieniska Förutsättningar för Skolarbetet. Stockholm, Iduns Tryckeriak-tiebolag, 1943. 66 p.

1943:19. 1940 Års Skolutrednings Betänkanden och Utredningar. Bilaga II. Den Psykologiska Forskningens Nuvarande Ståndpunkt i Fråga om den Psykiska Utvecklingen hos Barn och Ungdom M. M. Stockholm, Iduns Tryckeriak-tiebolag, 1943. 81 p.

1943:34. Betänkande med Utredning och Förslag angående den Högre Tekniska Undervisningen. Stockholm, Ivar Haeggströms Boktryckeri A. B., 1943. 447 p.

1943:41. Betänkande med Utredning och Förslag angående Läkutbildningen. II. Föreläsning- och Repetitionskurser för Läkare. Stockholm, Tryckeri Aktiebolaget Thule, 1943. 55 p.

1944:20. 1940 Års Skolutrednings Betänkanden och Utredningar. I. Skolan i Samhällets Tjänst. Frågeställningar och Problemläge. Stockholm, Iduns Tryckeriak-tiebolag, 1944. 138 p.

1944:21. 1940 Års Skolutrednings Betänkanden och Utredningar. II. Samman-bandet mellan Folkskola och Högre Skola. Stockholm, Iduns Tryck-eriaktiebolag, 1944. 354 p.

1944:22. 1940 Års Skolutrednings Betänkanden och Utredningar. III. Utredning och Förslag angående Vidgade Möjligheter till Högre Undervisning för Landsbygdens Ungdom. Stockholm, Iduns Tryckeriak-tiebolag, 1944. 104 p.

1944:23. 1940 Års Skolutrednings Betänkanden och Utredningar. Bilaga III. Förhandlingarna vid Sammanträde den 15- den 17 juni 1943 med 1940 Års Skolutrednings Rådgiyande Nämnd. Stockholm, Iduns Tryckeriak-tiebolag, 1944. 148 p.

- 1945:43. 1940 Års Skolutrednings Betänkanden och Utredningar. Bilaga V. Skolungdomens Vägledning till Utbildning och Yrke. Iduns Tryckeriaktiebolag, 1945. 277 p.
- 1945:44. 1940 Års Skolutrednings Betänkanden och Utredningar. Bilaga IV. Lärjungurvalet till Studielinjer med den Nuvarande Realskolans Mål. Stockholm, Iduns Tryckeriaktiebolag, 1945. 123 p.
- 1945:45. 1940 Års Skolutrednings Betänkanden och Utredningar. V. Betyggsättning. Stockholm, Iduns Tryckeriaktiebolag, 1945. 89 p.
- 1945:56. Betänkande med Utredning och Förslag angående Läkarutbildningen. III. Utbildningen efter Medicine Licentiatexamen. Stockholm, Ivar Haeggströms Boktryckeri A. B., 1945. 171 p.
- 1945:57. Överarbetning av Förslag angående Läkarutbildningen. Stockholm, Ivar Haeggströms Boktryckeri A. B., 1945. 109 p.
- 1945:60. 1940 Års Skolutrednings Betänkanden och Utredningar. IV. Skolpliktidens Skolformer. 1. Allmän Organisationsplan. Stockholm, Iduns Tryckeriaktiebolag, 1945. 184 p.
- 1945:61. 1940 Års Skolutrednings Betänkanden och Utredningar. IV. Skolpliktidens Skolformer. 3. Realskolan. Teoretisk linje. Stockholm, Iduns Tryckeriaktiebolag, 1945. 428 p.
- 1945:62. 1940 Års Utrednings Betänkanden och Utredningar. Bilaga VI. Sammanfattning av Allmän Organisationsplan. Stockholm, Iduns Tryckeriaktiebolag, 1945. 35 p.
- 1946:11. 1940 Års Skolutrednings Betänkanden och Utredningar. IV. Skolpliktidens Skolformer. 2. Folkskolan. A. Allmän Del. Stockholm, Iduns Tryckeriaktiebolag, 1946. 341 p.
- 1946:14. 1940 Års Skolutrednings Betänkanden och Utredningar. IV. Skolpliktidens Skolformer. 4. Realskolan. Praktiska linje. Stockholm, Iduns Tryckeriaktiebolag, 1946. 193 p.
- 1946:15. 1940 Års Skolutrednings Betänkanden och Utredningar. IV. Skolpliktidens Skolformer. 2. Folkskolan. B. Förslag till Undervisningsplaner. Stockholm, Iduns Tryckeriaktiebolag, 1946. 253 p.
- 1946:30. Socialutbildningsakkuniga. II. Utredning och Förslag rörande Statsvetenskapliga Examina M. M. Stockholm, Ivar Haeggströms Boktryckeri A. B., 1946. 127 p.
- 1946:31. 1940 Års Skolutrednings Betänkanden och Utredningar. VI. Skolans Inre Arbete. Synpunkter på Fostran och Undervisning. Stockholm, Iduns Tryckeriaktiebolag, 1946. 194 p.
- 1946:72. 1940 Års Skolutrednings Betänkanden och Utredningar. VII. Radio och Film i Skolundervisningen. Stockholm, Iduns Tryckeriaktiebolag, 1946. 64 p.
- 1947:11. 1940 Års Skolutrednings Betänkanden och Utredningar. VIII. Utredning och Förslag rörande Vissa Socialpedagogiska Anordningar inom Skolväsendet. Stockholm, Iduns Tryckeriaktiebolag, 1947. 148 p.
- 1947:25. 1945 Års Akademikerutredning. Stockholm, P. A. Nordstedt & Söner, 1947. 64 p.
- 1947:49. 1940 Års Skolutrednings Betänkanden och Utredningar. X. Flickskolan. Stockholm, Iduns Tryckeriaktiebolag, 1947. 253 p.
- 1948:27. 1946 Års Skolkommisions Betänkande med Förslag till Riktlinjer för det Svenska Skolväsendets Utveckling. Stockholm, Ivar Haeggströms Boktryckeri A. B., 1948. 561 p.

- 1948:44. Betänkande med Förslag till Nya Grunder för Avlöningen av Präster, M. M. Del I. Stockholm, Iduna Tryckeriaktiebolag, 1948. 252 p.
- 1948:46. Utredning och Förslag rörande Organisationen av den Farmaceutiska Undervisningen och därmed Sammanhängande Frågor. Stockholm, Gummesons Boktryckeri Aktiebolag, 1948. 250 p.
- Kungl. Maj:ts Kungörelse angående ändring i vissa delar av förnyade stadgar den 17 mars 1933 (Nr 109) för rikets allmänna läroverk; given den 28 juni 1946. Svensk Författningssamling 1946, Nr 556-560. Stockholm, P. A. Nordstedt & Söner, 1946. p. 1114-1130.
- Kungl. Maj:ts Proposition 1950:70 Angående Riktlinjer för det Svenska Skolväsendets Utveckling. Stockholm, Ivar Haeggströms Boktryckeri A. B., 1950. 592 p.
- Kungl. Maj:ts Stadgar för de tekniska högskolorna givna den 30 juni 1947. Svensk Författningssamling 1947, Nr 488. Stockholm, P. A. Nordstedt & Söner, 1947. p. 1159-1190.
- Justitiedepartementet. Statens Offentliga Utredningar 1946:57. Betänkande angående Vissa Organisations-, Utbildnings- och Tjänstgöringsfrågor vid Domstolarna. Stockholm, P. A. Nordstedt & Söner, 1946. 330 p.
- WALLIN, RAGNAR och HOLMQUIST, HARALD. Folkskolestadgan och Fortsättnings-skolestadgan med dithörande Författningar jämte Anvisningar, Prejudikat och Lönetabeller. Stockholm, A. B. Magn. Bergvalls Förlag, 1949. 550 p.

Secondary Works

(Swedish)

- ARVIDSON, STELLAN. Skolreformen. En sammanfattning av 1946 års skolkommissions betänkande. Skrifter utgivna av Sveriges yngre läroverkslärares förening 5. Lund, C. W. K. Gleerups Förlag, 1948. 112 p.
- JONASSON, SVEN, *editor*. Svensk Studentkalender 1948-49. Utgiven av Sveriges Förenade Studentkårer. Tofte Årgången. Lund, C. W. K. Gleerups Förlag, 1949. xi+396 p.
- editor*. Svensk Student Kalender 1951-52. Utgiven av Sveriges Förenade Studentkårer. Trettonde Årgången. Lund, C. W. K. Gleerups Förlag, 1951. xi+420 p.
- SIVGÅRD GUSTAF. Skolor och Utbildningsvägar. Stockholm, Tidens Förlag, 1951. 272 p.
- Studier i U. S. A. Handbok utgiven av Sverige-Amerikastiftelsen. Stockholm, Sverige-Amerikastiftelsen, 1946. 96 p.
- WERNBERG, GUNNAR, *editor*. Läroverkslärares Riksförbunds Årabok 1947. Tjugo-första Årgången. Trollhättans Tryckeri A. B., 1947. 262 p.

(English)

- DURING, INGEMAR, *editor*. The Swedish School-Reform 1950. A summary of the Government Bill. At the Request of the 1946 School Commission. Uppsala, Appelbergs Boktryckeriaktiebolag, 1951. 171 p.
- TEGÉN, EINAR and MALMSTEN, KARL. Survey of Administration, Teaching and Examination at the Swedish Universities with Special Reference to the Humanities and the Social Sciences. 2nd Ed. (Mimeographed), Stockholm, 1951. 13 p.
- The Swedish Institute. Education in Sweden. Stockholm, The Swedish Institute, 1950. 36 p.
- ÖSTERGREN, BEATL, *compiler*. Higher Education in Sweden: A handbook for foreign students. Translation by Alan Blair. Stockholm, The Swedish Institute, 1952. 131 p.

Glossary of Terms

Institutions

- Alnarps Lantbruks, Mejeri-, och Trädgårdsinstitut—Agricultural, Dairy and Gardening Institute of Alnarp. Called also Alnarpsinstitutet.
- Chalmers Tekniska Högskola—Chalmers Institute of Technology.
- Egentliga folkskola—elementary school proper.
- Enskilda högre flickskolor—private secondary schools for girls.
- Folkskoleseminarierna—seminaries for the education of elementary school teachers.
- Folkskoleseminariet i Stockholm—Seminary for the Education of Elementary School Teachers in Stockholm.
- Gymnasium—A 3- or 4-year upper secondary school.
- Gymnastiska Centralinstitutet—Central Institute of Gymnastics.
- Göteborgs Högskola—University of Gothenburg.
- Handelsgymnasium—Commercial gymnasium.
- Handelshögskolan i Göteborg—Commercial College of Gothenburg.
- Handelshögskolan i Stockholm—Commercial College of Stockholm.
- Högre allmänna läroverk—State secondary schools.
- Högre goss- och samskolor—secondary schools for boys and coeducational schools.
- Högre tekniska läroverk—technical secondary schools.
- Karolinska Mediko-Kirurgiska Institutet—Caroline Medico-Surgical Institute.
- Kolarskola—Charcoal school.
- Kommunala flickskolor—municipal schools for girls.
- Kommunala gymnasium—municipal gymnasium.
- Kommunala mellanskola—municipal middle school; municipal lower secondary school.
- Konsthögskolan—Institute of Arts.
- Kungl. Farmaceutiska Institutet—Royal Pharmaceutical Institute.
- Kungl. Lantbrukshögskolan—Royal College of Agriculture.
- Kungl. Musikhögskolan—Royal Conservatory of Music.
- Kungl. Skogshögskolan—Royal College of Forestry.
- Kungl. Tekniska Högskolan i Stockholm—The Royal Institute of Technology of Stockholm.
- Kungl. Universitetet i Lund—The Royal University of Lund.
- Kungl. Universitetet i Uppsala—The Royal University of Uppsala.
- Lantmannaskola—agricultural secondary school.
- Lågre tekniska läroanstalter—technical lower secondary schools.
- Praktiska mellanskolor—practical middle (lower secondary) schools.
- Privatläroverk—private secondary school.
- Realgymnasium—a 3- or 4-year upper secondary school with reallinje.
- Realskola—a 4- or 5-year lower secondary school.
- Riksarkivet—The National Archives.

- Småskola—a 2-year primary school.
 Småskoleseminarierna—seminaries for the education of primary school teachers.
 Stockholms Högskola—University of Stockholm.
 Tandläkarhögskolan—College of Dentistry.
 Tekniska Elementarskolan i Borås—one of a group of technical upper secondary schools which included also the tekniska elementar skolorna of Härnösand, Malmö, Norrköping, and Örebro.
 Tekniska fackskolor—technical vocational schools.
 Tekniska gymnasier—technical gymnasiums.
 Veterinärhögskolan—College of Veterinary Medicine.
 Övningskolan—practice school.

Faculties, Departments, Special Courses, and Lines of Study

- Allmänna linjer—general lines.
 Arkitekturskolan—School of Architecture of the Institute of Arts.
 Avdelningen för Allmänna Vetenskaper—Department of General Sciences.
 Avdelningen för Arkitektur—Department of Architecture.
 Avdelningen för Bergsvetenskap—Department of Mining and Metallurgy.
 Avdelningen för Elektroteknik—Department of Electrical Engineering.
 Avdelningen för Flygteknik och Skeppsteknik—Department of Aeronautics and Shipbuilding.
 Avdelningen för Kemi—Department of Chemical Engineering.
 Avdelningen för Lantmäteri—Department of Surveying.
 Avdelningen för Maskinteknik—Department of Mechanical Engineering.
 Avdelningen för Skeppsbyggnad—Department of Shipbuilding.
 Avdelningen för Teknisk Fysik—Department of Engineering Physics.
 Avdelningen för Väg- och Vattenbyggnad—Department of Civil Engineering.
 Differentierade gymnasiet—the term "differentiated gymnasium" applies to the two highest classes of the 3- and 4-year gymnasium due to their system of electives.
 Driftledarkursen—Course for farm managers.
 Ekonomiska linjen—Economics line.
 Filosofiska Fakulteten—Faculty of Philosophy.
 Forstmästarkursen—a lower course for foresters offered prior to 1936 at the Royal College of Forestry.
 Förberedande kursen—preparatory course.
 Gymnastiklärarlinje—Course for teachers of gymnastics.
 Husdjurlinjen—Domestic animals line. Course on domestic animals.
 Högre Mejerikursen—Higher Course in Dairying.
 Högre Trädgårdskursen—Higher Course in Gardening.
 Institut för Material Kunskap—Institute on Knowledge of Materials attached to the Institute of Arts.

- Jordbrukslinjen—Agricultural line.
 Juridiska Fakulteten—Faculty of Law.
 Jägmästarkursen—Course for Foresters.
 Kompletteringskurser—supplementary courses.
 Lantbruksavdelning—Division of Agriculture.
 Latinlinje—Latin line.
 Medicinska Fakulteten—Faculty of Medicine.
 Mejeriavdelning—Division of Dairying.
 Målar ock Skulpturskolorna—Schools of Painting and Sculpture at the Institute of Arts.
 Reallinje—modern or science line.
 Skolan för Grafisk Konst—School of Graphic Art.
 Sjukgymnastiklinje—Course for Physiotherapists.
 Teologiska Fakulteten—Faculty of Theology.
 Trädgårdsavdelning—Division of Gardening.
 Två-Årig linje—2-year line.
 Underavdelningen för Gruvvetenskap—Division of Mining.
 Underavdelningen för Metallurgi—Division of Metallurgy.

Examinations

- Agronomexamen—Examination for agronomists.
 Agronomic licentiatexamen—Licentiate examination in agronomy.
 Apotekarexamen—Pharmaceutical examination.
 Arkitektexamen—Examination for architects.
 Bergingenjörsexamen—Examination for mining engineers.
 Civilingenjörsexamen—Examination for civil engineers.
 Civiljägmästarexamen—Examination for civil foresters.
 Efterprövning—Supplementary examination.
 Ekonomexamen—Examination for economists.
 Economic licentiatexamen—Licentiate examination in economics.
 Farmacie kandidatexamen—Candidate examination in pharmacy.
 Filosofie kandidatexamen—Candidate examination in philosophy.
 Filosofie licentiatexamen—Licentiate examination in philosophy.
 Filosofie ämbetsexamen—Professional examination in philosophy.
 Folkskolläraresexamen—Examination for elementary school teachers.
 Fyllnadsprövning—Supplementary examination.
 Gymnastiklärarexamen—Examination for teachers of gymnastics.
 Högre cantors examen—Higher examination for cantors.
 Högre organist examen—Higher examination for organists.
 Ingenjörsexamen—Examination for engineers.
 Juris kandidatexamen—Candidate examination in law.
 Juris licentiatexamen—Licentiate examination in law.

- Medicin kandidatexamen—Candidate examination in medicine.
 Medicin licentiatexamen—Licentiate examination in medicine.
 Mejeriingenjörsexamen—Examination for dairy engineers.
 Militär musikdirektörsexamen—Examination for military music directors.
 Musiklärarexamen—Examination for music teachers.
 Pianostämmarexamen—Examination for piano tuners.
 Praktisk realexamen—Leaving examination of the practical line at a realskola.
 Praktisk-teologiska prov—Practical theological examination.
 Realexamen—Leaving examination taken on completion of a 3- or 4-year realskola.
 Sjukgymnastexamen—Examination for physiotherapists.
 Småskollärarexamen—Examination for primary school teachers.
 Statsvetenskaplig examen—Examination in political science.
 Statsvetenskaplig-filosofisk examen—Political science examination in philosophy.
 Statsvetenskaplig-juridisk examen—Political science examination in law.
 Studentexamen—Student examination.
 Särskild prövning för teologie kandidater och teologie licentiat—Special examination for candidates and licentiates in theology.
 Tandläkarexamen—Dental examination.
 Tandläkarkandidatexamen—Candidate examination in dentistry.
 Teknisk licentiatexamen—Examination for licentiates in engineering.
 Tentamen—A tentamen is an individual examination. It may be written, oral, or both.
 Teologisk-filosofisk examen—Theological philosophical examination.
 Teologie kandidatexamen—Candidate examination in theology.
 Teologie licentiatexamen—Licentiate examination in theology.
 Veterinärexamen—Examination in veterinary medicine.
 Veterinärkandidatexamen—Candidate examination in veterinary medicine.

Terms Used in Grading the Examinations

- Berömlig—Praiseworthy
 Betygsenhet—Credit unit
 Godkänd—Approved. Passed.
 Icke godkänd—Not approved.
 Icke utan beröm godkänd—Approved not without praise.
 Med beröm godkänd—Approved with praise.
 Med utmärkt beröm godkänd—Approved with outstanding praise.

Terms in Latin Used in Grading

- Approbatur—Approved. Passed.
 Cum insigniori laude approbatur—Approved with outstanding praise.
 Cum laude approbatur—Approved with praise.
 Improbatur—Not approved.
 Laudatur—Praiseworthy.
 Non sine laude approbatur—Approved not without praise.

Degrees and Titles

- Agronomie doktorsgrad—Doctor of agronomy
 Arkitekt—Architect.
 Bergsingenjör—Mining engineer.
 Civilingenjör—Civil engineer.
 Ekonomie doktorgrad—Degree of doctor in economics.
 Filosofie doktor—Doctor of philosophy.
 Filosofie kandidat—Candidate in philosophy.
 Filosofie licentiat—Licentiate in philosophy.
 Filosofie magister—Master of philosophy.
 Forstmästare—Forester.
 Gymnastikdirektör—Director of gymnastics.
 Juris doktor—Doctor of law.
 Juris kandidat—Candidate in law.
 Juris licentiat—Licentiate in law.
 Jägmästare—Forester.
 Lantmästare—Farm manager.
 Lantmätare—Surveyor.
 Medicine doktor—Doctor of medicine.
 Medicine kandidat—Candidate in medicine.
 Medicine licentiat—Licentiate in medicine.
 Sjukgymnast—Physiotherapist.
 Politices magister—Master of political science.
 Teknisk licentiat—Licentiate in engineering.
 Teknologie doktor—Doctor of technology.
 Teologie doktor—Doctor of theology.
 Teologie kandidat—Candidate in theology.
 Teologie licentiat—Licentiate in theology.

Certificates

- Avgångsbetyg—Leaving certificate.
 Betyg—Certificate. Mark.
 Betyg över avlagd filosofie kandidatexamen—Certificate of having passed the candidate examination in philosophy.
 Betyg över avlagd filosofie licentiatexamen—Certificate of having passed the licentiate examination in philosophy.
 Betyg över avlagd folkskollärarexamen—Certificate of having passed the examination for elementary school teachers.
 Betyg över avlagd småskollärarexamen—Certificate of having passed the examination for primary school teachers.
 Betyg över avlagd studentexamen—Certificate of having passed the student examination.
 Betyg över undergången realexamen—Certificate of having passed the realexamen.
 Betyg över undergången studentexamen a realgymnasium—Certificate of having passed the student examination of the realgymnasium.
 Normalakolkompetens—Normal school competence.
 Tentamensbok—Tentamenbook.
 Terminsbetyg—Term report.
 Utskrivningsbetyg—Leaving certificate.

Administrative Bodies

- Avdelningskollegium—Department council.
 Avdelningsråd—Department committee.
 Ecklesiastikdepartementet—Department of Education.
 Finansdepartementet—Department of Finance.
 Folkshushållningsdepartementet—Supply Department.
 Försvarsdepartementet—Department of National Defense.
 Handelsdepartementet—Department of Commerce.
 Inrikesdepartementet—Department of Interior.
 Jordbruksdepartementet—Department of Agriculture.
 Justitiedepartementet—Department of Justice.
 Kollegienämnd—Faculty committee.
 Kommunikationsdepartementet—Department of Communications.
 Lokalstyrelse—Local board.
 Lärarkollegium—Faculty council.
 Medicinal Styrelsen—Medical Board.
 Mindre konsistoriet—Lesser consistory.
 Riksdagen—Swedish Parliament.
 Skolöverstyrelsen—Board of Education.
 Socialdepartementet—Department of Social Welfare.
 Statsråd—Swedish Cabinet.
 Utrikesdepartementet—Department of Foreign Affairs.
 Överstyrelse—Board of directors.
 Överstyrelsen för Yrkesutbildning—Board of Vocational Education.

Miscellaneous

- Allmän trädgårdsodling—General garden cultivation.
 Apotekslev—Druggist's pupil.
 Betygsenheter—Credit units.
 Betygsämne—Certificate subject.
 Departementschefer—Ministers or chiefs of departments.
 Enskilt arbete—individual work on some phase of a special subject.
 Expektanlev—Student in expectation.
 Expeditionschef—An executive undersecretary assisting a minister in the direction of his department.
 Extra studerande—extra student.
 Flyttning—Promotion.
 Förhållsämnen—Test or examination subjects.
 Generaldirektör—The director general of a central agency such as the Sweden Board of Education.
 Gruppövningar—Group practice teaching.
 Heldagsbesök—Whole day observation and participation in connection with practice teaching.
 Kansler—Chancellor.
 Kansliråd—A principal assistant secretary in charge of a bureau of a department.
 Läro- och timplaner—Plans of study.
 Läroåret—Academic year.

- Metodiska frågor—Questions of method.
- Ordinariestuderande—Regular students.
- Praktisk lärarbildning—Practical education of teachers as distinct from the theoretical.
- Privatist—One who takes an examination as a private pupil or as a pupil from a school not authorized to offer the examination concerned.
- Rector—The head of a school. Principal. President of a university.
- Ring—Class in a gymnasium.
- Serieövningar—Teaching of a series of lessons in the same subject in practice teaching.
- Skogsakötad—Forest care.
- Specialstuderande—Special students.
- Studentkåren—Student corps.
- Studiehandbok—Study handbook.
- Studieplaner—Study plans.
- Tillägsämnet—Supplementary subject.
- Trädgårdsanläggning—Garden planning.
- Träförädlingsindustri—Forestry improvement industry.