

ican communities, the very support it largely needs and should have.

It is most gratifying to know that our modern economists are recognizing the weakness of the old doctrines. They are recognizing the necessity of more scientific treatment, of an analysis of conditions, of an interpretation of facts and observations in considering the great wants of the present day. Political economy, like theology and religion, must change with the thought of the age; it must change as industrial and social conditions change; it must seek to ally itself with all the great sciences in every line of work, and to reach conclusions that shall be of vital importance to the working masses of the world. It is a happy sign, as already intimated, that the newer works on political economy are recognizing these things, and are extending the field of their discussions. Here is the great hope and herein lies the importance of the relation of science to political economy. Science is always ready, when the results of its investigations warrant it, to wipe off the slate of yesterday and turn its face to the light. Political economy has not always done this, but it should be as ready as science has been to follow new revelations and announce new truths.

CARROLL D. WRIGHT.

UNIVERSITY REGISTRATION STATISTICS.

A COMPARISON of the figures in the table with those for 1903 (*SCIENCE*, N. S., Vol. XVIII., No. 467, December 11, 1903, page 738) will show that the majority of institutions given in the table can still point to an increase in attendance over last year; at the same time, the total increase in enrolment at the combined institutions is not as large as it was last year, and considerably smaller than it was two years ago. It was pointed out in the article of 1903 that the effects of the economic conditions of

the country would in the ordinary course of events not be felt keenly until 1904, and the figures seem to indicate that there were sufficient grounds for the assumption. A number of universities, not only in the east, but also in the middle west, show a decrease, which in several institutions is quite marked. The losses in individual schools are sometimes due to an increase of requirements, and the tendency to raise the standard of requirements for entrance and advancement, not only in the professional schools, but also in the academic department, is spreading more and more and is no longer confined to one or two institutions. The press during the past year has commented widely upon the fact that the number of students from the west attending higher institutions of learning in the east seems to be decreasing, but an investigation of the facts of the case will show that while the number of western men attending western institutions is unquestionably increasing all the time, there has been no loss in the percentage of western students enrolled at eastern institutions. At Yale, for example, the discussion has suggested the preparation of a table giving the registration from eight large states of the central west and the northwest, most of which support large universities, the states included being Michigan, Ohio, Indiana, Illinois, Missouri, Iowa, Wisconsin and Minnesota, and the figures show that the number of students from these states has grown from 392 in 1902 to 452 in 1904. At Columbia the percentage of students in the corporation (excluding Barnard College, Teachers College and the College of Pharmacy) from the North Central division has increased from 5.87 per cent. in 1902 to 6.56 per cent. in 1904.

The statistics given on page 914 are with few exceptions approximately as of November 1, 1904, and relate to the registration

at twenty of the leading universities throughout the country. One new institution, the University of Virginia, has been added to the list. It may not be amiss to repeat that the higher institutions of learning here represented are not the twenty largest or the twenty leading universities of the country. It might be advisable to increase the list so as to include the twenty-five or thirty largest American institutions, but it seems scarcely practicable at this time. The figures have in every case been obtained from the proper officials of the universities concerned. The changes in enrolment that take place in the course of the year can not of course be considered here, and they are not important enough to influence the general result. In order that a better idea may be conveyed of the registration at these universities during the fall term, two totals are given for the first time this year, one exclusive of the summer session and another, a grand total, including the enrolment of the summer school. An attempt has been made to secure proper uniformity in the statistics, although it is of course impossible to arrive at an absolutely uniform interpretation.

According to the figures of last year the twenty universities enumerated ranked as follows: Harvard, Columbia, Chicago, Michigan, California, Illinois, Minnesota, Cornell, Wisconsin, Yale, Northwestern, Pennsylvania, Nebraska, Syracuse, Ohio, Indiana, Missouri, Princeton, Leland Stanford and Johns Hopkins. Comparing this with the present order, we shall find that there has been no change in the relative positions of the three largest universities, Harvard, Columbia and Chicago. Michigan is fourth, followed by Minnesota, Cornell, California, Illinois, Pennsylvania, Yale, Wisconsin, Northwestern, Nebraska, Syracuse, Ohio, Missouri, Leland Stanford, Princeton, Indiana, Johns Hopkins and Virginia, in the order named. Illinois

passed from the eighth to the sixth position in 1903 on account of the incorporation of the Chicago College of Dental Surgery with the School of Dentistry of the University of Illinois. Later, as the result of a suit brought by a stockholder of the College of Dental Surgery, it was held that the officers of the college had not been duly authorized by the directors of the stockholders to arrange for the consolidation. The contract was consequently declared void, and the figures of last year, which were given in good faith, with no thought that the consolidation contract would be declared void, should be changed from 3,661 to 3,239. Taking this into consideration, Illinois really occupies its old position. Both Minnesota and Cornell have passed California, and Pennsylvania has passed Yale, Wisconsin and Northwestern. Indiana shows a considerable loss and has been preceded by Missouri, Leland Stanford and Princeton, the latter two having changed positions. Cornell and Pennsylvania show the largest gains in the east, while Minnesota and Nebraska have the largest increase in the west. Omitting the summer session, the order would be as follows: Harvard, Columbia, Minnesota, Michigan, Cornell, Illinois, California, Yale, Pennsylvania, Northwestern, Wisconsin, Syracuse, Nebraska, Chicago, Ohio, Missouri, Leland Stanford, Princeton, Indiana, Johns Hopkins and Virginia.

As far as the changes in the enrolment of the different universities are concerned, Harvard shows a falling off from 6,013 in 1903 to 5,392 in 1904. The large increase in 1903 was due almost entirely to the expansion of the summer session from 945 in 1902 to 1,392 in 1903, an increase due chiefly to the meeting of the National Education Association held at Boston in July, 1903. The 1904 summer session naturally showed a decrease (from 1,392 to 1,007), and this partly explains the falling off in

the grand total. The summer session figures are exclusive of 326 Porto Ricans in the special summer session. The enrolment in all the departments of the university has fallen off since the last report, with the exception of law and agriculture. The loss in the college may be due to the increasing number of students who are completing the course in three years instead of four.

At Columbia there would be a decrease in the total enrolment were it not for the fact that the New York College of Pharmacy became incorporated with the university on July 1, 1904. The registration at the College of Pharmacy up to November 1 included 435 students, the addition of which more than offsets the loss in the professional schools of law and medicine. The requirement of a baccalaureate degree for admission to the law school was enforced for the first time last year, and this has naturally resulted in a decrease in attendance, which should reach the minimum in 1905. In the medical school not only were increased admission requirements carried into effect for an additional class, but the tuition fee was increased from \$200 to \$250 per annum, both causes combining to decrease the enrolment by about a hundred students. The scientific schools likewise show a slight decrease. The tuition fee in these schools was also increased from \$200 to \$250, but this fact seems to have had no particular influence in preventing students from returning to or entering the institution. This year graduate students in applied science registered for the first time in pure science, and are consequently included under the graduate school figures in 1904, whereas they appeared under scientific schools in 1903. Furthermore, the fact that the tuition fee under the faculty of pure science is only 150 dollars per annum no doubt caused a number of students holding a baccalaureate degree to become candidates for the mas-

ter's degree in the faculty of pure science, instead of for an engineering degree or a B.S. in chemistry under the faculty of applied science. The increase in the graduate schools is, therefore, due partly to the causes just mentioned. The loss in the registration of college women is explained by the fact that special women music students previously registered at Barnard College, whereas this year they were enrolled in the university department of music. Columbia College (men) shows the largest enrolment in its history, exceeding that of last year by 34, there being 145 students registered in the freshman class, the largest the college has ever had. The New York City high schools are sending more men to the college each year, and college students in increasing numbers are taking advantage of the combined courses, whereby they may receive the baccalaureate degree and the law or a science degree in six years, or the baccalaureate degree and the degree of doctor of medicine in seven years. Teachers College shows a slight gain over last year, and the summer session of 1904 was a little smaller than that of 1903, due, no doubt, to the same fact that caused the loss in the summer session at Harvard.

There has been a slight falling off in the total enrolment at the University of Chicago, the greatest loss occurring in the graduate schools. The law school is growing rapidly, the medical school having remained stationary. It should be remembered in making comparisons that the summer session at Chicago does not bear the same relation to the remaining terms as it does elsewhere.

The increase in attendance at the University of Michigan is not large. The academic departments for both men and women, as well as the faculty of medicine, show a decrease, whereas all the other departments have increased in numbers, the largest gains having been made in the engineering

school, the college of dentistry and the summer session. The total gain is no doubt larger than would appear from a comparison of the 1904 figures with those of 1903, inasmuch as it was impossible last year to secure accurate figures for the number of summer session students who returned for work in the fall and who should have been deducted under 'double registration.'

The total enrolment at the University of Minnesota shows a considerable gain over last year, there being 3,886 students registered in 1904, as against 3,550 in 1903. The enrolment of men in the academic department is identical with that of last year, but there has been a gain of 30 women in the same department. The scientific schools show a gain, which is not as large, however, as the increase in the law school enrolment. The requirements in the medical school have been raised, yet the school shows a slight gain over last year. All of the other departments have also had an increase, which is especially striking in the graduate faculties.

The total attendance at Cornell shows an increase from 3,438 to 3,833, which is much larger than the gain noted during the previous year. The college of arts and science and the college of law are the only departments that show a falling off in attendance. Sibley College (mechanical engineering) shows an increase in its total attendance, but a slight falling off in the first year class, which may be explained by the fact that new entrance requirements went into effect this fall for the first time, both advanced French and advanced German, as well as advanced mathematics, being demanded for admission. The college of agriculture shows the largest increase among the various departments, but most of this increase is in the special students, who are not obliged to satisfy the entrance requirements. The summer session, which

showed a loss in 1903, has gained considerably.

The attendance at the University of California has grown from 3,690 to 3,738, a gain which is larger than the one recorded last year. The losses in medicine, the graduate schools, in art, dentistry and pharmacy, are more than made up by the increased registration in the other departments, including the summer session.

The University of Illinois shows a gain over 1903, although the figures given in last year's tabulation are larger than those for 1904; the reason for this has been explained above. All of the departments, with the exception of the professional schools of law, medicine and pharmacy, have had an increase in enrolment, this being most noticeable in the scientific schools. The 42 students mentioned under 'other courses' are enrolled in the school of library science.

As noted above, there has been a considerable increase in the attendance at the University of Pennsylvania, which is due in part to the incorporation of a summer school of the college, in which 137 students were enrolled, and of the night school of accounts and finance, in which 164 students are registered. The freshman classes show an increase everywhere except in the veterinary school. The medical school shows a large increase, the veterinary and dental schools have remained stationary, and the graduate department and the law school show a slight falling off. Architecture, mechanical engineering, civil engineering, mining engineering and the Wharton School of Finance and Commerce have had decided gains. Biological and chemical courses also show an increase, whereas there has been a loss in the academic course.

The Yale figures, as far as the grand total is concerned, have remained practically unchanged, the gain being slight. There is an apparent loss in the number of students

registered in the Sheffield Scientific School, which is, however, due to the fact that this year the undergraduate students only were counted, whereas in 1903 graduate students of the scientific department were included here as well as under the graduate schools. The attendance of undergraduates at the Sheffield School shows an increase of about 50 over that of last year. The academic department shows a gain, whereas the others have remained virtually stationary. The only loss worth mentioning is in the law school, a falling off due to increased tuition fees and greatly increased requirements for admission and advancement.

The University of Wisconsin shows a considerable loss, which is, however, not large enough to eradicate the great gains made in the previous year. The academic department shows a large increase.—The registration at Northwestern University has increased, but the total given is a gross total, it having been impossible to indicate all the duplications. The 115 students mentioned under 'other courses' are enrolled in the department of oratory, and the 50 summer session students are divinity students.—The figures for the University of Nebraska are those for the close of the academic year 1903–1904, the figures for this fall not being obtainable.—At Syracuse University gains are noticeable all along the line, being largest in the college and scientific schools and smallest in the professional schools of law and medicine.—The total attendance at the University of Ohio is a little larger than it was last year, most of the departments having experienced no important change. The number of women in the academic department has been increased by 45, whereas the number of men shows a falling off of 50. Stricter entrance rules went into effect in the college, which were in a measure responsible for this decrease. The greatest loss is found in the college of pharmacy. The chemistry

building, the home of this department, was totally destroyed by fire last winter, so that the school was compelled to work at a great disadvantage in temporary quarters this year. Next year the department is to be located in the new chemistry building, now in process of construction, so that the loss over the previous year will probably be only temporary.—The University of Missouri shows a gain in its total attendance, in spite of the large falling off in the summer session. In 1903 summer schools were maintained at three places outside of Columbia, Missouri, the attendance aggregating 639, whereas last summer only one school was opened, that at Columbia, at which 260 students were enrolled. Since 1903 a new department has been established, the teachers college, which is responsible for some of the increase. The 90 students mentioned under 'other courses' belong to the departments of agriculture and forestry and the veterinary department. The largest gains were made in the scientific schools.—Leland Stanford, Jr., which had remained practically stationary the year before, shows an increase in all departments.—At Princeton there has been a slight loss as against last year, but the figures for 1904 are larger than for 1902. The loss in the academic department has not quite been offset by the gain in the scientific schools. A good illustration of the encroachment of the scientific schools upon the academic departments in most universities may be found here, for while there were 758 academic students in 1902, there are only 665 in 1904, whereas the number of scientific students has increased from 494 in 1902 to 628 in 1904. The graduate schools show a decrease, arising chiefly from the fact that fewer students of the Theological Seminary than usual are availing themselves of the opportunity to pursue graduate courses in the university.—There has been a consider-

	California.	Chicago.	Columbia.	Cornell.	Harvard.	Illinois.	Indiana.	Johns Hopkins.	Leland Stanford, Jr.†	Michigan.	Minnesota.	Missouri.	Nebraska.	Northwestern.	Ohio State.	Pennsylvania.	Princeton.	Syracuse.	Virginia.	Wisconsin.	Yale.
College Arts, Men.....	505	604	527	672	2005	351	590	186	884	729	470	305	315	778	221	510	665	1068	200	844	1286
College Arts, Women.....	948	784	363	1479	407	325	389	...	447	624	775	268	633	778	245	...	...	...	...	608	...
Scientific Schools*.....	789	...	663	1479	407	325	389	...	...	970	560	529	496	...	673	604	628	370	...	809	...
Law.....	91	115	342	224	745	111	125	...	187	830	532	211	183	201	160	305	...	130	192	182	774
Medicine.....	106	144	560	391	307	629	20	291	...	417	283	106	150	550	...	547	...	154	144	...	227
Graduate Schools.....	194	388	709	193	366	132	...	194	89	101	135	68	107	51	39	182	92	61	116	...	140
Agriculture.....	89	...	...	184	22	338	...	...	...	...	750	...	258	...	105	...	...	...	...	205	325
Art.....	196	...	...	...	...	...	...	...	...	...	...	...	92	...	...	...	...	60	...	90	...
Dentistry.....	90	...	...	...	108	153	...	...	...	108	141	...	...	456	...	362	...	...	...	...	36
Divinity.....	...	170	...	...	43	...	...	...	...	...	...	...	...	189	20	...	...	...	...	...	...
Forestry.....	...	...	...	...	...	...	...	...	...	12	...	...	...	...	...	...	...	...	...	...	93
Music ..	...	...	35	...	...	96	...	...	...	...	...	...	360	310	...	29	...	595	...	...	60
Pharmacy.....	80	...	435	...	...	147	...	...	...	64	65	...	...	206	16	...	...	...	...	220	79
Teachers College.....	+	154	627	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	29	...
Veterinary.....	...	...	...	103	...	...	...	...	...	...	...	157	...	...	...	155	...	+	...	...	...
Other Courses ..	42	...	13	135	...	42	...	71	...	...	...	90	...	...	82	82	...	45	...	...	...
Deduct Double Registration.	...	(141)	(218)	(17)	(15)	...	(242)	(2)	(187)	(187)	(40)	(198)	(180)	(50)	...	...	...	(64)	(116)	(319)	(25)
Total	3130	2218	4056	3364	4516	3233	882	740	1120	3667	3671	1536	2414	2806	1723	2940	1385	2419	691	2668	2995
Summer Session.....	913	2237	961	744	1007	239	498	...	18	647	215	260	191	50	106	137	...	59	...	395	16
Deduct Double Registration.	(305)	(420)	(184)	(275)	(131)	(103)	(174)	...	(14)	(314)	...	(92)	(92)	...	(71)	(50)	...	(26)	...	(132)	(3)
Grand Total, 1901	3738	4035	4833	3883	5392	3369	1206	740	1424	4000	3886	1704	2513	2856	1758	3027	1385	2452	691	2931	3008
“ “ 1903	3690	4146	4557	3438	6013	3239	1614	694	1370	3926	3550	1540	2247	2740	1710	2644	1434	2207	—	3221	2990
“ “ 1902	3676	4296	4156	3281	5468	—	1648	669	1378	3764	3505	1408	2289	2875	—	2549	1345	2020	—	2884	2804
Officers.	330	184	551	451	534	365	72	156	130	270	197	88	173	346	143	330	114	201	45	243	330

* Includes schools of engineering, chemistry, architecture, mining and mechanic arts.

† Included in college statistics.

able decrease in the attendance at the University of Indiana, which is confined almost entirely to the arts and science departments, the law school and the summer session showing a gain.—At Johns Hopkins University there has been a gain in the academic department, a small gain in medicine, and no change in the enrolment of the graduate schools.

Last year we called attention to the fact that the medical schools showed a decided decrease in the great majority of institutions. A reaction seems to have set in this year, for while the decrease in a number of universities has continued, others show gains, the largest increase being recorded at the University of Pennsylvania. The Medical School of Columbia University has dropped into second place, Illinois now taking the lead. Columbia is followed by Northwestern and Pennsylvania, these four institutions having enrolments of over 500 students. The University of Michigan still has the largest law school, Harvard's being second, Minnesota's third and Columbia's fourth. Quite a number of law schools have suffered a loss in attendance. The scientific schools continue to draw large numbers, and at the majority of institutions are growing very rapidly. Cornell has by far the largest enrolment of scientific students, Michigan coming second, Illinois third and Wisconsin fourth. Harvard continues to have the largest collegiate enrolment. Its summer session was also the largest last year, Columbia being a very close second, with California third and Cornell fourth. Columbia with an enrolment of 709 students in the graduate faculties easily maintains the lead in this department, which it has held for several years. Chicago, its nearest rival in this field, has only a little over half as many graduate students as Columbia, Harvard and Yale follow closely behind Chicago. Northwestern has the largest dental school

and also the largest school of divinity. The Columbia School of Pharmacy is more than twice as large as that of its nearest competitor, Northwestern University, and Teachers College of Columbia University also remains in a category by itself as far as the number of students is concerned. Syracuse University has the largest school of music, and Yale the largest school of forestry. The Minnesota School of Agriculture is more than twice as large as that of Illinois, which stands second. Columbia seems to have the largest teaching force, but the Harvard figures do not include the 25 teachers specially engaged to give summer courses in art and sciences and 31 instructors and lecturers in the summer school of physical training.

These figures tell their own story, but of course they tell little about the relative rank of the institutions from the standpoint of efficiency, a question with which this tabulation does not attempt to deal.

RUDOLPH TOMBO, JR.,
Registrar.

COLUMBIA UNIVERSITY.

AMERICAN ORNITHOLOGISTS' UNION.

THE twenty-second congress of the American Ornithologists' Union convened in Cambridge, Mass., Monday evening, November 28. The business meeting was held in Mr. William Brewster's museum, and the public sessions, commencing Tuesday, November 29, and lasting three days, were held in the Nash lecture room of the University Museum.

Mr. Charles B. Cory, of Boston, was re-elected president; C. F. Batchelder, of Cambridge, Mass., and E. W. Nelson, of Washington, D. C., vice-presidents; John H. Sage, of Portland, Conn., secretary; Jonathan Dwight, Jr., of New York City, treasurer; Frank M. Chapman, Ruthven Deane, A. K. Fisher, Thos. S. Roberts, Witmer Stone, William Dutcher and