

# IS SECONDARY SCHOOL SCIENCE INCREASING?

W. B. JEWELL AND F. G. SLACK  
*Vanderbilt University, Nashville, Tennessee*

A count has recently been made of entrance credits in mathematics and science offered to Vanderbilt University by freshmen entering the University in the years 1926 and 1936. The accompanying tables give the results of this study.

TABLE 1

*Percentage of students offering science and mathematics for entrance credits in 1926 and 1936, Vanderbilt University*

MATHEMATICS			SCIENCE		
AMOUNT	1926	1936	AMOUNT	1926	1936
Less than 3 units.....	4.6	6.8	Less than 1 unit.....	23.6	6.7
Exactly 3 units.....	31.2	46.1	Exactly 1 unit.....	36.3	32.0
Exactly 3.5 units.....	46.0	13.4	Exactly 1.5 units.....	1.6	2.7
Exactly 4 units.....	18.2	32.1	Exactly 2 units.....	25.4	33.5
More than 4 units.....	0.0	1.6	Exactly 2.5 units.....	2.9	2.4
			Exactly 3 units.....	8.1	17.6
			Exactly 3.5 units.....	0.0	1.2
			Exactly 4 units.....	1.6	3.6
			Exactly 4.5 units.....	0.4	0.3

TABLE 2

*Average number of entrance credits in the various science subjects offered to Vanderbilt University in 1926 and 1936, per student*

SUBJECT	1926	1936	CHANGE IN TEN YEAR PERIOD
Chemistry.....	.287	.578	101%
Biology.....	.289	.485	68%
General Science.....	.253	.371	47%
Physics.....	.234	.309	32%
Physiography.....	.168	.055	-67%
Botany.....	.025	.011	-56%
Miscellaneous.....	.059	.014	-76%
<b>Total</b> .....	1.315	1.823	38.5%
Mathematics.....	3.38	3.37	0%

Since the average total number of entrance credits per student was about sixteen, the percentage of work done in each of the science subjects may be easily obtained from Table 2.

These data were obtained from the records of 237 students entering Vanderbilt University in the fall of 1926 and of 329 entering in

1936. These include only those students entering the College of Arts and Science (including pre-medical) and the School of Engineering. The data appear to show a substantial increase in the amount of Science offered to Vanderbilt for entrance in this ten-year period and also to indicate that the science courses in the average secondary school are becoming more standardized: Chemistry, Biology, General Science, and Physics being primarily offered.

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### DUCK DEPRESSION CHECKED, REPORTS BIOLOGICAL SURVEY

The waterfowl depression is on the mend, says the Biological Survey of the U. S. Department of Agriculture. An annual mid-winter inventory just completed shows that for the second consecutive year more wild ducks and geese wintered in the United States than in the previous year. Up till last year the depletion of the waterfowl supply had continued for many years.

Observers of the Biological Survey in making this year's inventory reported they saw nearly 9,500,000 ducks and geese. This number, according to the Survey, probably is not much more than a fourth of the continent's waterfowl.

Mallard and pintail increases were largest. Lesser scaups, black ducks, baldpates, snow geese, and Canada geese also gained. Canvasbacks and redheads, fully protected for the first time last year, also showed an increase. The 1935-36 inventory showed these species had decreased further, in contrast to most waterfowl.

"The increase this winter is not as spectacular as last year's, but it shows that the Department's program is producing results," says the Survey. "This upward trend can be attributed to several factors. More birds returned to breeding grounds a year ago as a result of hunting restrictions. There was a good increase of young ducks and geese. The Federal refuge system is showing results. Last fall's hunting regulations also were strict. Sportsmen are giving increasing support to the waterfowl restoration program.

"These gratifying gains, however, should not lead sportsmen to believe that waterfowl have fully recovered. The last two mid-winter inventories show only that the birds are beginning to respond to better treatment. Further improvement to bring the birds up to normal numbers depends upon continued cooperation in the restoration program."

For the inventory just completed the entire field personnel of eight regional directors of the Bureau's Division of Game Management surveyed definite waterfowl areas by land, water, and air. This group was augmented by state game wardens, state police officers, personnel from the Forest Service and the Soil Conservation Service, observers from state colleges, volunteer observers of the Survey, and members of various wildlife and sportsmen's organizations.

The Biological Survey also used its "navy" of patrol boats, patrol craft of state game commissions, boats of the Bureau of Navigation and Steamboat Inspection, patrol vessels of the Coast Guard, and many privately owned power boats. Aircraft was supplied by the Army Air Corps, the Naval Air Service, the Coast Guard, a tire manufacturing company, and private citizens. One regional director used 18 aircraft, including naval bombing planes, blimps, and an autogiro. One observer flew 1,700 miles in a navy plane along the Gulf Coast from Florida west to the mouth of the Sabine River in Louisiana. Another continued westward in a Coast Guard plane to the mouth of the Rio Grande. Others covered coastal and interior waters by boat. Smaller lakes, ponds, and marshes were reached by automobile. Several agents of the Survey traveled on snowshoes. All reports were analyzed by the Bureau's biologists in Washington.