energy value of these materials, an interesting feature of the work being a comparison, on a pecuniary basis, of these and some common foods as sources of protein and energy. In general, it may be said that the chief nutrients in fruit consist of sugars and other carbohydrates and in nuts of protein and fat. In other words, while both fruits and nuts furnish the body with energy, nuts furnish some building material (protein) as well. Some idea of the range may be gained from the fact that at ordinary retail prices in the United States, 10 cents expended for fresh grapes will supply the body with about 830 calories of energy, and in the case of dried apples or apricots will supply about 1,200 calories, as compared with 6,600 calories from 10 cents' worth of wheat flour. In the case of almonds this sum will supply 0.08 pound protein and about 1,100 calories of energy, and in the case of peanuts 0.28 pound protein and about 2,800 calories, while expended for cheese it would provide 0.17 pound protein and about 1,300 calories, and for flour 0.46 pound protein, as well as the large amount of energy noted above.

Although some of the dietaries showed that it is quite possible to obtain the needed protein and energy from a fruitarian diet, the majority of those studied fell below the tentative dietary standards. It is hardly just to ascribe this entirely to the form of diet since the same people might have consumed no larger quantities of nutrients on an ordinary mixed diet. The nutritive value of the fruitarian diet is perhaps most clearly shown in the case of one of these subjects, a university student, who though entirely unaccustomed to such fare gradually changed from an ordinary mixed diet to one of fruits and nuts without apparent loss of strength or health. He was then able for the eight days of the experiment to carry on his usual college duties and for a part of the time also performed heavy physical work on an exclusive fruitarian diet without material loss of weight.

The cost of the fruitarian diet per person per day varied from 18 to 46 cents, values which compare favorably with those found for an ordinary mixed diet.

Although it is undoubtedly advisable to wait until more data have been gathered before making definite statements regarding the digestibility of different fruits and nuts, enough work has been done to show that they are quite thoroughly digested and have a much higher nutritive value than is popularly attributed to them. In view of this it is certainly an error to consider nuts merely as an accessory to an already heavy meal and to regard fruit merely as something of value for its pleasant flavor or for its hygienic or medicinal virtues.

As shown by their composition and digestibility, both fruit and nuts can be favorably compared with other and more common foods. As sources of carbohydrates, fruits at ordinary prices are not expensive; and as sources of protein and fats, nuts at usual prices are reasonable foods.

In the investigations at the University of California the question of the wholesomeness of a long-continued diet of fruit and nuts is not taken up. The agreement of one food or another with any person is frequently more or less a matter of personal idiosyncrasy, but it seems fair to say that those with whom nuts and fruits agree can, if they desire, readily secure a considerable part of their nutritive material from such sources.

SCIENTIFIC NOTES AND NEWS.

THE National Academy of Sciences will hold its autumn meeting in Chicago, beginning on November 17.

IN accordance with the pleasant custom of German universities, Professor E. W. Hilgard of the University of California has received from the University of Heidelberg on the occasion of the fiftieth anniversary of his graduation as doctor of philosophy, October 7th, a new diploma reconferring the title, which in addition to the previous formula, contains a general summary of the scientific work done by him, with the congratulations of the faculty. On the anniversary day Professor Hilgard also received a congratulatory address from his colleagues of the University of California.

The American Academy of Arts and Sciences has elected as foreign honorary members, Charles Emile Picard, of Paris, in place of the late H. A. E. A. Faye, and Joseph Larmor, of Cambridge, England, in place of the late Sir George Gabriel Stokes.

The daily papers state that the scientific committee of the Congress of Arts and Sciences of the St. Louis Exposition, consisting of Dr. Simon Newcomb, Washington; Professor Hugo Münsterberg, Harvard University, and Professor Albion W. Small, the University of Chicago, made its report in New York on October 14 to the director of congresses, Mr. Howard J. Rogers, and to President Nicholas Murray Butler, chairman of the administrative board. The members of the committee were in Europe for four months, and of the invitations presented to leading scientific men and scholars, 114 have been accepted.

Professor Carl H. Eigenmann, of Indiana University, has gone to Cuba to continue the work of investigating the blind fishes of that island.

Mr. G. H. Marx, assistant professor of mechanical engineering at Stanford University, has received a year's leave of absence which he will spend in Germany.

Dr. E. D. Starbuck, assistant professor of education in Stanford University, has been granted a year's leave of absence, and is at present in England. It is said that he will not return to Stanford University, but will accept a position in the east.

M. L. H. Uillier, professor of physics at the Lyceum at Nantes, has been made director of the Meteorological Observatory in that city.

It is stated in *Nature* that Mr. H. Maxwell Lefroy, who has been appointed entomologist to the Government of India, is to be stationed at Surat, in the Bombay Presidency, pending the establishment of the permanent headquarters of the Imperial Agricultural Department now being organized under the orders of Lord Curzon.

Mr. S. I. Kuwana, M.S. (Stanford), has been appointed entomologist at the Central Agricultural Experiment Station, Nishigahara, Tokyo. Mr. Kuwana's special studies have been given largely to scale insects and to the Coccidæ of Japan (No. XXVII., Contrib. to Biology, Hopkins Seaside Lab., 1902). He has monographed the Japanese species as at present known.

Charles V. Piper, of the Washington College and Station, has accepted an appointment as botanist in the Division of Agrostology, and will also have charge of the herbarium of grasses.

Alfred M. Sanchez, an assistant in the Bureau of Soils, has been appointed in the Bureau of Agriculture of the Philippines, where he will continue the soil investigations carried on last year by C. W. Dorsey.

Professor C. P. Gillett, entomologist at the Agricultural College at Fort Collins, Col., has been appointed chief entomologist of the St. Louis Exposition.

The twenty-first congress of the American Ornithologists' Union will convene in Philadelphia on Monday, November 16, at 8 P. M. The evening session will be devoted to the election of officers and the transaction of other routine business. The meetings, open to the public and devoted to the reading and discussion of scientific papers, will be held in the lecture hall of the Academy of Natural Sciences (Logan Square), beginning on Tuesday, November 17, and continuing for three days. Information regarding the congress can be had by addressing the secretary, Mr. John H. Sage, Portland, Conn.

A meeting of the American Physical Society will be held at Columbia University on October 31.

The American Institute of Mining Engineers held its eighty-fifth meeting on October 13 in New York City, under the presidency of Mr. Albert R. Ledoux.

The fifth International Congress of Gynecology will be held at St. Petersburg in September, 1905.

An international exhibition of the manufacture and industrial applications of alcohol will be held in Vienna in April and May, 1904.

THE New York Zoological Park has received during the past week a consignment of animals from Hagenbeck's agency at Hamburg. The collection includes a pair of giraffes, valued at $15,000 and some twenty-five other animals.

A PRELIMINARY statement showing the coal production of the United States, prepared by Mr. Edward W. Parker, statistician, has just been issued by the United States Geological Survey. The statistics, though subject to slight revision and correction because of a few incomplete returns, are sufficiently correct to enable comparisons to be made between the production of 1902 and that of former years. For the first time in the history of the United States the production of coal has reached a total of over 300,000,000 short tons, showing an actual output of 300,930,659 tons of 2000 pounds, valued at $373,133,843. Of this total, the output of anthracite coal amounted to 36,865,710 long tons (equivalent to 41,289,595 short tons), which, as compared with production of 60,242,560 long tons in 1901, shows a decrease of 23,376,850 long tons, or almost 40 per cent. This decrease, as is well known, was due entirely to the suspension of operations by the strike in the anthracite region from May 10 to October 23, a little over five months. Had it not been for the strike, which practically stopped production in the anthracite region for this length of time, the output for the year would have probably attained a total of over 65,000,000 long tons. The value at the mines of the product in 1902 amounted to $81,016,937, as against $112,504,020 in 1901, a loss of about 27 per cent. The average value of the marketed coal sold during the year at the mines was $2.50 per long ton, the value in 1901 having been $2.05. The comparatively small amount of anthracite which was mined during the strike, which brought such exorbitant prices, did not have the effect on the total production that might have been expected.

IN his report to the United States Geological Survey on the production of petroleum in 1902, now in press, Mr. F. H. Oliphant gives the following table showing approximately the production of crude petroleum in all the known countries of the world, together with the percentages of each for 1902, in terms of United States barrels. A small estimated quantity is placed under the head of 'all other countries,' included in which is the primitive production in several of the South American States, and in Algeria, Persia, the Philippines and China, from which no returns could be secured. The total increase in 1902 amounted to almost 7 per cent. as compared with 1901, and to almost 20 per cent, as compared with 1900. The most conspicuous items in the list are the increase in the production of the United States and the decrease in the production of Russia, the result being that the output of these two countries reached nearly the same figures in 1902. In 1902 the United States and Russia produced 91.08 per cent. of the total output, as compared with 93.22 per cent. in 1901 and with 94.11 per cent. in 1900. Of the remaining 8.92 per cent. produced by all other countries, Sumatra, Java, Borneo, Galicia and Roumania, which furnished only 4.65 per cent. in 1901, furnished 6.82 per cent. in 1902, leaving 2.10 per cent. of the total as the output of the other producing countries.

Country.	Quantity (Barrels).	Percentage of Total.
United States	80,894,590	45.64
Canada	520,000	.29
Peru	60,000	.03
Russia	80,540,045	45.44
Galicia	4,142,160	2.35
Sumatra, Java, Borneo	5,860,000	3.31
Roumania	2,059,930	1.16
India	1,570,500	.89
Japan	1,193,000	.67
Germany	353,675	.20
Italy	12,000	.02
All other Countries	26,000	
Total	177,231,900	100.00

UNIVERSITY AND EDUCATIONAL NEWS.

L. H. SEVERANCE, of Cleveland, has agreed to give $100,000 toward the fund of $1,000,000 which it is proposed to raise as an endowment for Wooster University.

THE visiting committee having in charge the raising of money to build Emerson Hall for the Department of Philosophy at Harvard University has turned over to the treas-