quality, without which all teaching is futile, of stimulating the desire of knowing. At the time of his appointment as professor of anatomy, anatomical teaching in this country was on a low plane. With few exceptions the professors of anatomy in the medical schools were practitioners of medicine, usually surgeons, and the anatomical course consisted of formal lectures and demonstrations, so subdivided in the large audience by distance that in demonstrations each student received a very imperfect idea of the objects shown thirty to sixty feet away. The lectures were the main discipline and were supplemented by text-book recitations and by a limited course of dissections. Rarely did the student receive the stimulation to endeavor to find out things by the exercise of his own powers, nor did the discipline involve training in those powers of observation and judgment by which knowledge is obtained. The attempt was made to have the student acquire what was quaintly termed the mastery of a subject by being told or by reading descriptions of what others had seen. The method is one that has by no means been given up and may be said to be the current method of instruction in most subjects in the schools to-day. Mall's departure from this method was radical. He held the view that the essential in teaching should be directed to the development of the power of the individual, and that knowledge comes not from being projected into the student from without, but must grow from within on the material obtained by the skilled use of the senses directed on the object studied. The primary knowledge of the thing so acquired could be expanded and coordinated by lectures, demonstrations and by reading. This is the natural method pursued by children before the unnatural methods of school are substituted and the intellectual curiosity which stimulates the child to seek knowledge is killed. Mall introduced the utmost freedom of study and of teaching into the laboratory. Students have told me that they felt lost when they went into the laboratory and before they understood the spirit of the place. They were so unaccustomed to a lack of direction of their intellects. With all the freedom of study that prevailed the students were well cared for and the progress of each man followed. The teacher was always at hand to assist, often to guide and always to encourage and stimulate. The result is seen in the position of anatomy in this country to-day. There is no teacher, no student of the subject who has not directly or indirectly, consciously or unconsciously profited by the methods, the work and the ideals of this great teacher.

The best men were attracted to him, and his work has been multiplied a thousandfold by his disciples. This method of teaching is one which, though universally applicable, produces the greatest result in the hands of such a born leader as was Mall, a man who was able to say to his students, "*Come* with me along this road." There is a great difference between "come" and "go." His laboratory was a model of good housekeeping, always orderly, and he was a good provider of facilities for work. The anatomical material was abundant and well preserved, and dissection was robbed of many of the unpleasant features usually connected with it. There was an abundant store of carefully made dissections, as available for study as the books in a library.

It is interesting to attempt to form an estimate of a man by comparing him with others; extremely difficult, for men and environmental conditions are so unlike. There is such a difficulty in comparing the work of Mall with that of his colleagues, many of them men of the highest type, all differing, each in a different way exerting a great influence. It is enough to say that Mall stood in the first rank of these men.

As a last word I must speak of the great honesty of Mall which appeared in every relation, and with his honesty his perfect fearlessness. He was not a compromiser, and where his ideals of right showed him the way he fearlessly followed, no matter how difficult the road. The world has sustained a loss in his death, a place is vacant which probably will not be filled, at least not by the same type. His friends whose esteem and affection he won will like to think about him and recall in their minds the old associations, none of these giving pain. To his family he has left a great name, and his descendants may well be proud of their ancestor.

W. T. COUNCILMAN

HARVARD MEDICAL SCHOOL

SCIENTIFIC EVENTS

EXPEDITION OF THE AMERICAN GEOGRAPHICAL SOCIETY TO CENTRAL PERU

AN expedition from the American Geographical Society of New York will leave this week for Central Peru to explore and map the sources of the Maranón River, the principal tributary of the Amazon, and a large section of the vast forested region which lies along the eastern border of the Andes between the upper Maranón and the Ucayali River. In addition to an extensive program of topographic and reconnaissance mapping, studies will be made of the geology, meteorology and plant and animal life of the region.

To the scientific explorer as well as to the explorer for exploration's sake, the region which the expedition

will study is one of the most alluring of the many little-known areas of South America. Here on a vast plateau nearly 15,000 feet above the sea, within a hundred miles in an airline from the Pacific coast but separated from it by the lofty, snow-capped wall of the main range of the Andes, and within thirty miles of each other are the sources of three great tributaries of the Amazon—the Maranón, the Huallaga and the Mantaro.

It is a curious fact that, with all the explorations that have been made in the Amazon Basin in the past hundred years, the actual sources of the main tributary of the world's greatest river have never been carefully explored and from the standpoint of accurate mapping are practically unknown. The headwaters of the Maranón consist of a chain of glacier-fed lakes some thirty miles in length which lie close against the eastern edge of the cordillera of the Andes about fifty miles northwest of the famous American-owned copper mines at Cerro de Pasco. Although it it believed by many that in the towering crests of the Andes from whose melting snow-fields and glaciers this chain of lakes is fed, peaks will be found that will rival the highest altitudes so far determined in Peru, none of them have been accurately measured.

Of the lakes themselves little information is available. In 1909 Sievers, the German geographer, visited and described a group of small lakes which form the uppermost part of the chain. The survey made by the Intercontinental Railway Commission in the early nineties crossed the lowermost of them at the point where it empties into the Maranón. Between these two points there are only vague and conflicting descriptions by a few native travellers. A topographic survey of about 350 square miles will be made between the crest of the Andes and the secondary range which bounds the lake region on the east. This survey will be tied in to a base established at Cerro de Pasco and accurately located by astronomical observations. It is believed that the geological studies in this section will be especially interesting. North and south of the region the Andes are known to be highly mineralized. At Mina Ragra a short distance south of the point where the survey will begin are located the mines of the American Vanadium Corporation, from which comes the major portion of the world supply of vanadium.

From the lake region a reconnaissance traverse checked by frequent astronomical observations will be carried for about a hundred miles northward along the upper Maranón, thence eastward through the densely-forested montana to the Huallaga and Pachitea Rivers, and back to Cerro de Pasco. This part of the work will include about 400 miles of reconnaissance surveys. Topographic surveys will be made of small areas at critical points along the route, meteorological records will be kept and observations on the plant and animal life recorded as a basis for distributional maps now in process of construction by the American Geographical Society.

The cartographic work of the expedition will be of great interest to geographers and kindred scientists because it will fill with accurate surveys one of the largest blanks which still exists in the map of South America. In general, maps of Hispanic America are highly inaccurate and scientists have been, for that reason, greatly hampered in their work all over this great realm. For the past six years the American Geographical Society has had a large staff of expert cartographers engaged in assembling material for a great map of Hispanic America. This map is on the scale of 1:1,000,000 and conforms to the standards of the International Map of the World. It is being compiled from original surveys and will represent, when completed, the total present knowledge of the cartography of Hispanic America. The Hispanic American governments as well as American and European explorers and development companies have shown enthusiastic interest in the task of assembling material for the map. The society's collection now numbers thousands of original surveys. There still remain many gaps, however, in areas in which no surveys have been made. The region selected for the present expedition is one of the most critical of these areas. The society hopes by future expeditions to be able to fill many other important blanks on the map.

From the standpoint of the surveyor the expedition will be highly important in that it will afford an opportunity to test out in the field the methods of rapid mapping which the society has been developing during the past seven years. The expedition will be equipped with a set of instruments which represent a maximum of accuracy and speed of work with a minimum of bulk and weight. They include the new Weld theodolite, the Barr and Stroud range finder, and an extremely small and light wireless receiving set for obtaining time signals for longitude.

The expedition, which is in charge of O. M. Miller, of the society's School of Surveying, will leave New York on June 23 on the steamer *Santa Teresa* of the Grace Line. Kaspar Hodgson, son of C. W. Hodgson, of Yonkers, will be a member of the party. The party will also include, beside assistants, a geologist who will study the mineral resources of the region.

HONORARY DEGREES CONFERRED BY YALE UNIVERSITY

HONORARY degrees were conferred by Yale University on the occasion of the two hundred and twenty-