

THURSDAY, JULY 16, 1903.

THE UNIVERSITY IN THE MODERN STATE.

IV.

IN previous articles we have pointed out that the penuriousness of our national policy towards the Universities results in the worst form of extravagance, the waste of thought and effort through want of proper tools. Because we will not give more, even what we do give is robbed of its proper fruit. Few institutions could be found which illustrate this more clearly than the three colleges of the University of Wales, in spite of the active work which they are doing.

The earliest of their charters is barely twenty years old, and the University was only founded in 1895, yet they have within their walls some 800 matriculated students pursuing full degree courses, and, roughly speaking, as many more who are either preparing for external degrees or diplomas, like the medical students at Cardiff; or taking some university courses as a part of a professional curriculum, like most of the normal and many of the theological students at all three colleges. The total population of Wales amounts to only 1,700,000, so that a total of some 1500 students makes a proportion of nearly 9 in 10,000, as against nearly 5 in England, nearly 8 in Germany, and nearly 13 in America (see our article of May 14). This is strong evidence of the eagerness with which university education is sought in the Principality, and of the confidence felt in its colleges. And the soundness of their teaching as a whole is indicated both by the names that appear on the list of their teachers and by the successes won by their former students at older Universities and elsewhere.

What, then, is their need to-day? Why can they not continue the work they have begun?

For two reasons. First, because their achievements so far have been attained at too great a cost. The beginning of a new and promising national movement aroused among its first promoters a spirit of enthusiasm and self-sacrifice which has not, indeed, passed away, but which has been sobered by bitter lessons. Those who knew anything of the life of the late Principal Viriamu Jones know that he was literally killed by the burden of too heavy a task; and there have been several other cases of serious overstrain, though none have ended so tragically.

From facts before us it is clear that not merely the principals, but the heads of all the large departments in the colleges, feel that the difficulty of meeting the growing duties of the university without any increase in its endowments has reached an intolerable degree, that is to say, from the outsider's standpoint, it has become incompatible with real efficiency.

In the second place, the cost of university education has risen greatly since the colleges began their work. The developments in education which have taken place in cities like Liverpool and Birmingham—to mention these alone—have created a new demand for men fitted for professional work; and conditions which twenty years ago, when the work of the colleges was lighter

than it is now—and when the Civil Service drew no men from the Universities—were sufficient to attract young men of distinction, no longer seem so desirable.

Nearly all the English colleges have been steadily forced by competition to raise the terms they offer to their staff. We know of two or three instances in which stipends have been specially raised in order to secure some professor who was at the time in the service of a Welsh college.

Even from an English point of view it is clear that this implies that larger funds will have to be found if university education is to be maintained at an efficient level. But in Wales, where it is impossible to raise such funds on any adequate scale, the facts wear a more serious aspect. The colleges feel their needs in three directions, in teaching, in research, and in administration; all alike are unnaturally burdened by poverty. In regard to teaching, perhaps the worst case is that of subjects like geology, botany and economics, which in more than one college are represented only by lecturers; their remuneration varies, but is at best scarcely more than half the professorial stipend. In all the colleges, changes of staff are undesirably frequent.

It seems unkind to point out further that large branches of knowledge like chemistry and engineering, or, on the "Arts" side, English or philosophy, not to mention older subjects, have outgrown the power of any one man to teach properly. This fact has been recognised by wealthier colleges (especially in Germany and America), in which each of these subjects employs several professors.

In Wales, again, the later developments of university study, such as the different branches of commerce, are hardly represented at all.

Finally, under this head, we may observe that in no one of the colleges is there any provision for pensioning their teachers when they reach the limits of effective work, and it is clear that this will shortly become a serious question.

In research we must acknowledge how much good work has been done—the names of Principal Viriamu Jones and Prof. Gray (now of Glasgow) at once suggest themselves in the department of physics alone; and among the present members of the colleges there are men of distinction both in science and letters. But the difficulties they have had to face have always been serious, and of late years have grown greater rather than less.

For want of adequate endowments both the laboratories and the libraries have grown steadily poorer in proportion to the growing demands of study. In one of the colleges the total expenditure on the library for more than twenty subjects, including the cost of periodicals and binding, is some 150*l.* a year! Everyone knows the discouraging effect of finding that some instrument or book of which one is in pressing need is out of reach.

The long vacation, it is true, offers opportunities, but here, again, a man's powers of research are limited by financial conditions. Men who are hard at work examining through most of July and August will not produce a great deal of original work in Septem-

ber, and the administrative work of the colleges now continually intrudes even upon the long vacation. From a general point of view, however, such disabilities of members of the staff would be of less consequence if the younger members of the colleges, honours students, or graduates of promise could secure more favourable conditions. Unfortunately, it is only too obvious that where a professor's chances of conducting original work are meagre, those of his students will, as a rule, be more meagre still. And in spite of the zeal with which the University of Wales has striven to foster original research, in every subject, in the regulations for its higher degrees, it is clear that unless the colleges can be placed in a better position financially, these efforts are doomed to disappointment. In one of the colleges a recent gift of valuable, if not unique apparatus is lying unused, and must do, until funds are found to build and maintain a proper laboratory to contain it.

Thirdly, and perhaps chiefly, the colleges suffer from their present position on their administrative side.

Making bricks without straw is not merely a discouraging, but an extremely difficult operation, and in any institution which attempts it, in the long run the best wits of its staff will be those that are set to the task. The colleges are finding more and more that even their teaching day is honeycombed with business.

Nor is this all. Where money is scarce, the spending of it is apt to be attended with an amount of ceremony which is itself a burden. In one college we are told it needs a series of resolutions discussed by four or five bodies before a new charwoman can be engaged. There could not be a better illustration of the waste of time which poverty entails. All the colleges serve some eight or nine masters in the shape of outside public bodies, who maintain different classes of students, and the necessity of explaining and justifying points of educational policy to so large a number of different popular authorities is a very serious task. At every turn it is necessary to consider not merely what is the right course, but what is the best form in which to secure its adoption. That under such conditions the colleges should have been able to do anything at all is satisfactory evidence not only of the keen interest in the university which is taken generally by the public bodies of Wales, but also of the wisdom with which the colleges, especially their principals, have discharged their task. Whatever may be thought of the policy of a democratic basis for university education, it will be admitted that the burden of the arrangements ought not to fall upon those who are also responsible for the solid work of teaching. In Wales this is largely the case, and both the teaching and the policy of the colleges are likely in the end to suffer.

In the second article of this series (March 12) we saw that the great bulk of the endowments of the German universities was provided by the State, 81 per cent. of the total being so provided in Prussia, and 74 per cent. in Germany as a whole. Wales, happily or unhappily, possesses comparatively few men whose individual possessions could enable them to take part

in endowing her colleges in any way commensurate with the need. Of the sums that have been raised for buildings, a great part has been collected, at the cost of healthy but disproportionate effort, from the shillings and pence of artisans and small farmers or traders. It is not surprising, therefore, to find that the colleges and the university depend already mainly upon public funds. The County Council grants to Cardiff and Aberystwyth must in fairness be counted as fees, not endowments, since they are given in return for teaching a definite class of students, and a change of policy in the local authorities might at any time modify or even divert their contributions. The figures are approximately¹ as follows, reckoning the interest on investments, as heretofore, at 2½ per cent., and including in the Government grants those devoted to special objects, such as agriculture, and the training of primary teachers.

Present Endowment of University Education in Wales.

	Income from Private Endowments.	Income from Government Grants.
	£	£
University College, Aberystwyth... ..	375	6000
University College, Bangor	1225	6000
University College, Cardiff	750 ²	5250
The University of Wales ...	—	4000
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Totals	£2350	£21,250
Percentages	10	90

There is only one conclusion. In great cities like Liverpool and Manchester there is accumulated wealth and an accumulated tradition of culture to which their colleges have appealed with some success. In Wales the culture has been for centuries remote from university life, and the wealth, as we have seen, is non-existent. If, therefore, the Government wishes that the 21,000*l.* a year which it now spends in grants to the colleges and the University of Wales shall not be wasted, it is high time that it should face the question of what they really need.

In order to represent these needs in as concrete a form as possible, we have made inquiries as to the sums which, in the opinion of responsible persons at each college, would suffice to place them in a position to discharge their work with real efficiency. In each case we shall mention two capital sums, the one that required to construct or complete the buildings and equipment of the college, the other that required as an endowment for maintenance, the interest in this latter case being reckoned at 2½ per cent. Aberystwyth has from the first been the most fortunate of the three colleges in the matter of buildings, so that its needs under this head are smaller; similarly Bangor needs slightly less towards maintenance as being possessed of somewhat larger invested endowments, Cardiff and Aberystwyth having only very small possessions of this kind; trust-funds for scholarships are, of course, disregarded altogether in the estimate.

The figures assume that the present Government grants will continue, and under both heads state the

¹ The exact figures vary slightly from year to year.

² Including the annual grant of 350*l.* from the 'Drapers' Company for Engineering.

sums needed in addition to all the resources the colleges at present possess.

Funds needed for University Education in Wales.

	A. For Buildings and equipment.	B For endowment.
University College, Aberystwyth	99,800	1,071,500
University College, Bangor... ..	176,500	960,400
University College, Cardiff... ..	162,000	1,176,400
The University of Wales	—	288,400
Totals	£438,300	£3,496,700
Grand total	£3,935,000	

In round figures, therefore, we may say that university education in Wales needs an endowment of four millions sterling to secure its efficiency. This will not be thought an extravagant figure when it is remembered that the need of the Birmingham University was estimated at five millions, and that the Welsh colleges minister to the needs of a far more diverse population. The agriculture, the manufactures, the mining and the over-sea commerce of Wales all demand the enlightenment and intelligence which can only be developed in universities efficiently equipped for their work.

FORMOSA.

The Island of Formosa. By James W. Davidson, Consul of the United States for Formosa. Pp. 646+xxviii+46. (London and New York: Macmillan and Co., Ltd., 1903.) Price 25s. net.

CONSUL DAVIDSON'S work on Formosa is a heavy quarto volume of 700 pages, in which the liberal use of small type indicates that its author has tried to pack as much as possible within a given space.

It is not a lap book, but a book for the study table, in which 168 photographs and other pictures give of themselves a liberal education about things Formosan. A coloured frontispiece shows Mount Morrison capped with snow, 13,880 feet in height. This, which is one of the many peaks in the mountain ranges which form the backbone of Formosa, is the highest mountain in the Japanese Empire. Another illustration is that of sea cliffs on the eastern coast. These, which attain heights of 5000 to 6000 feet, are possibly the highest sea cliffs in the world. Orographic features with these magnitudes in an island about half the size of Scotland are certainly remarkable. From other pictures, in which are depicted generals, battles, dismantled forts, Chinese temples, the surrender of the Dutch to Koxinga, the torturing of Dutch by the Chinese, Japanese streets, tea houses and barracks, a Christian church, a police station, a meteorological observatory and railways, it may be inferred that, politically and socially, Formosa has had a chequered history.

The Chinese, who have known Formosa since A.D. 608, tell us that it was created by certain fierce dragons which glided out from the gates of Foochow, and

lashed up the bed of the ocean until Formosa was created. The origin of this may rest on the fact that Formosa has, at least in part, resulted from volcanic activity, and in the Eastern mind such activities and dragons were in past ages closely associated. In the early Middle Ages the harbours of this island, which are almost entirely confined to its western shores, were used as clearing houses for trade between China and Japan, and also as homes for pirates. One princely freebooter who settled and married in Japan started life as a Chinese tailor. Before he died, by raids and intrigues he commanded 3000 sail, and was so powerful that he could not be opposed even by the Emperor of vast Cathay. He became a Christian, and was christened Nicholas. His son, Koxinga, born in Japan, was more powerful than his father, and remains one of the most remarkable characters in Eastern history. In 1662 he drove the Dutch (who had supplanted the Chinese) from Formosa, established a court, promoted industries, enacted wise laws, and ruled a nation of exiles and outlaws. China was helpless against him, and but for his sudden death it seems likely that he would have driven the Spanish from the Philippines. His grandson, a weakling, allowed the "Beautiful Isle" to fall back under Chinese mismanagement, and had these original owners only taken steps to award punishment for massacres and murders of shipwrecked crews, chiefly of foreign nations, Formosa might possibly have remained part of the Celestial Empire until the present day.

In 1874, in consequence of an outrage committed on the crew of a Loochooan vessel, Japan undertook a punitive expedition against Formosan outlaws. This was the thin end of a wedge which, after the war of 1895, was driven home, and Formosa was added to the Japanese Empire. It is, however, yet far from being completely under Japanese jurisdiction. The mountainous and densely wooded centre and eastern parts of the island still safely shelter head-hunting savages, whilst the borderland of these pathless jungles is a home for outlaws, and it is particularly against the latter that the Japanese seem helpless. The difficulty is to find them. At night villages may be looted by a howling mob, but next morning the sun rises upon smiling agriculturists.

After describing the tea industry, we are entertained with a long account relating to camphor. The camphor trees are, unfortunately, within the domains of the Aborigines, with the result that the camphor industry, head-hunting and butchery still go hand in hand. The chief victims appear to be the Chinese, the Japanese being but rarely attacked. Other industries are those of sugar and the mining of coal and gold. When speaking of the sulphur deposits, which are associated with geysers and a variety of spiteful volcanic vents, Mr. Davidson tells us that, in order to prevent certain insurgents obtaining material for the manufacture of gunpowder, an Imperial edict arrived from Peking ordering officials to destroy all sulphur deposits by fire, and to stop up all offending craterlets which produced this substance. Altogether eighty-eight volcanic orifices were discovered, on which for several years officials paid quarterly calls, and with