

平成25年度

愛媛大学医学部一般入試（前期日程）試験問題

外国語(医学科)

(14:10~16:10)

注意事項

- (1) 試験開始の合図があるまでは、次の頁を開いてはいけません。
- (2) 解答は、解答用紙の指定のところに横書きすること。
- (3) 受験番号は、解答用紙1枚ごとに、欄内に算用数字で横書きすること。
- (4) 問題冊子は、表紙を含めて9枚、解答用紙は3枚あります。

問題Ⅰ. 次の文章を読み、後の設問に答えなさい。なお、「*」のついた単語については本文の後に語注がついているので参考にしなさい。

Are You Teaching This Summer?

① Academics believe deeply that the public does not understand the daily life of a university professor, a belief that is amplified by an innocent conversation starter at neighborhood social gatherings: “Are you teaching this summer?” University professors always seem to be busy in the summer, when classes are not in session and the most *conspicuous activities on campus are related to *landscaping. It is a question that *betrays only an innocent fascination with a somewhat mysterious occupation. What an academic hears in the question is a hint that hours spent outside the classroom are hours not well spent: what else could justify that big summer paycheck? High school teachers “take the summer off” without pay to travel or perhaps to get a few more college credits toward an advanced degree. ② What in the world could a college professor do in the summer that would justify any pay at all? “Are you teaching this summer?” is the most annoying question that a professor can hear because there is no easy way to answer. It does not rank among the most important questions facing university professors today, but it is a window into academic life.

This is a book about the fate of American colleges and universities, institutions on a path to *marginal roles in a much different world than they are designed for. The story of higher education begins with an understanding that it is not *monolithic. ③ It will make much of what I have to say about universities easier to understand if I explain a few things about academic life—what motivates academics, how they view each other, and most importantly, how they view anyone outside the university. The gears and levers of a modern university are hidden from public view by a curtain, and I want to help you peek behind it.

Behind the Curtain

The fate of American colleges and universities is in the hands of the people on the inside who pull the levers and turn the gears, and of those on the outside who operate huge, interconnected networks of rules and systems. Virtually everyone involved in higher education is either a professor, a former professor, or an academic professional whose career has been carefully built in the service of professors. Much of what I describe in this book therefore *hinges on university professors—the way

they look at the world, how they are rewarded, and how their collective decisions are shaped by a culture that few outside academic life understand. Even highly educated professionals, who have spent years *immersed in university studies, feel ④ adrift in academic waters where titles and organization charts have little meaning, administrative boundaries are notoriously confusing, and primary loyalties are often to *peers with no obvious connection to the institution.

If academic life is *impenetrable to the *layman, it is because universities are designed to be mysterious. The mystery begins with *rituals that are especially forbidding to outsiders. Universities are by definition associated with *rites of passage—passage from adolescence to adulthood, from *apprentice to master. European universities were originally *medieval and *monastic, and American institutions inherited their traditions. They adopted rites of passage that were based on religious symbols and universal beliefs, a point that Kathleen Manning analyzes in her study of cultural symbolism in universities:

Although most colleges in the United States are *secular, the religious nature of institutional life remains firmly embedded in higher education.

This influence is most obvious in the academic rituals like *commencement ceremonies that involve *scepters and other magical icons and *imagery, monastic *gowns and regalia, and the ritual intonation of passages that confer special status to *conferees. An academic *processional resembles nothing as much as monks solemnly filing into chapel for Mass. It is not accidental that literature is filled with *deliberately blurred boundaries between religion, wizardry, and scholarship.

Symbolism masks the real nature—humanistic and materialistic—of modern universities, entities that produce and consume many billions of dollars annually. Modern universities are businesses—*conglomerates and federations of fiercely competitive organizations run by smart, capable people with a remarkable ability to focus their attention on problems that are beyond the reach of most of society. But universities are not monolithic. ⑤ The ideal of the university as a community of scholars has been effectively replaced over the last few decades by what former University of California President Clark Kerr called a multiversity—an enterprise that serves many public and private *constituents and balances the desires of many internal and external communities.

出典 : Richard A. DeMillo 著 “The Fate of American Colleges and Universities”
The MIT Press, Cambridge, Massachusetts, London, England 2011

注)

conspicuous はっきり見える

landscaping 環境整備

betray うっかりともらす

marginal さほど重要でない

monolithic 大きな一枚板

hinge on ーに依存している

immersed どっぷりと浸かる

peers 仕事仲間達

impenetrable 不可解

layman 一般人

rituals 儀式

rites 儀礼的な習慣

apprentice 見習い

medieval 中世

monastic 修道院的な

secular 非宗教的な

commencement 学位授与式

scepters 笏（しゃく）儀式のための道具

imagery 彫像

gowns and regalia ガウンと記章（記念のバッジ）

conferee 授与者

processional 儀式の行列

deliberately blurred boundaries ゆるやかでぼんやりとした境目

conglomerates 集合体

constituents 構成員

[設問 1] 下線部①を日本語に訳しなさい。

[設問 2] 下線部②を日本語に訳しなさい。

[設問 3] 下線部③を日本語に訳しなさい。

[設問 4] 下線部④adrift in academic waters すなわち、「大学という領海を漂流している」とはどのような状態か、日本語で説明しなさい。

[設問 5] 下線部⑤を日本語に訳しなさい。

問題Ⅱ. 次の進化 (*evolution*) についての文章を読み、後の設問に日本語で答えなさい。なお、「*」のついた単語については本文の後に語注がついているので参考にしなさい。

The word *evolution* means an unfolding, a process of development and change. Evolution applies to the formation and development of the entire physical universe – atoms, molecules, mountains, planets, stars, galaxies – as well as to living organisms. Geneticists, however, limit their studies to biological evolution (termed evolution for short) and generally define it in a stricter sense.

To a geneticist, evolution refers to changes in gene frequencies that arise and accumulate through time in populations of organisms. (It is populations, not individual organisms, that evolve). These cumulative changes in gene frequencies are subject to natural selection, as that process was originally proposed by Charles Darwin. According to Darwin, natural selection determines the *reproductive success of one individual compared with another and thereby determines which individual's genes will be represented more frequently in subsequent generations.

Darwin reached his conclusions by observing the kinds of slight *phenotypic variations among individuals of closely related species. The most well known of Darwin's many examples was the fourteen species of *finches that he studied while visiting the Galapagos Islands (see Figure). He concluded that the slight differences in the physical appearances of the finches on the different islands were the consequences of adaptations that had accumulated over long periods of time in response to the different island environments. The adaptations, Darwin concluded, were due to *heritable changes that ultimately resulted in the development of the different species of finches. The physical differences among the species evolved because the finches were reproductively isolated from one another by the water that restricted each population to a particular island.

The term *species* refers to reproductive groups that *interbreed among themselves but that do not mate or exchange genes with other reproductive groups in nature, even when they share a common environment. Chickens, geese, and ducks may share the same *barnyard, but they mate only with other birds of their own species. *Race* is an arbitrary subclassification of a species based on physical or genetic differences. However, individuals of different races can and do interbreed, since they all belong to the same species. In some species such as dogs, the term *breed* is used instead of *race* to denote a subspecies. All breeds of dog belong to the same

species, and in principle, any dog can mate successfully with any other dog. However, because of the artificial selection of specific characteristics by dog breeders through the centuries, physical and reproductive problems can arise in matings between certain breeds of dogs. The problems of breeding a male *Great Dane with a female *dachshund, for example, are *formidable.

The assignment of organisms to species and races is a method of classification that helps scientists organize the otherwise *bewildering diversity of organisms into groups with some shared characteristics. Races of plants or breeds of animals can be organized by size, color, hair or skin texture, presence or absence of certain genes, or any other physical or genetic characteristics that can be measured. Assignment of persons to human races has often carried with it implications of social or intellectual inferiority or superiority. Historically, persons of different human races have been prevented from interbreeding, but the obstacle has been social and cultural, not biological. In nature, biological mechanisms ensure that any member of a species is fertile with any other member of the same species, regardless of how physically similar or dissimilar the individual organisms may appear. By the same token, other biological mechanisms ensure that matings between individual organisms of different species are infertile.

As the example of a Great Dane and a dachshund shows, dramatic differences in appearance do not necessarily mean that individual organisms belong to different species. It also happens that organisms may appear similar or even identical to the nonexpert yet belong to different species. In the Hawaiian Islands, several hundred species of the *fruit fly *Drosophila* have been identified, each adapted to a particular island environment. Flies of one *Drosophila* species will mate only with flies of the same species, although to most people one fruit fly looks pretty much like any other.

注)

reproductive 生殖の

phenotypic 表現型の

finches フィンチ (アトリ科の小鳥の総称)

heritable 遺伝性の

interbreed 雑種を作る

barnyard 農家の庭

Great Dane グレートデン (たくましい体格で、しなやかな動きをする巨大犬)

dachshund ダックスフント (胴長短足の体型をもつ犬)

formidable 恐ろしい

bewildering 当惑させる

fruit fly *Drosophila* ショウジョウバエ

出典 : Gordon Edlin 著 “HUMAN GENETICS”

Chapter 18: Evolution より抜粋 一部省略

1990 by Jones and Bartlett Publishers, Inc., Boston

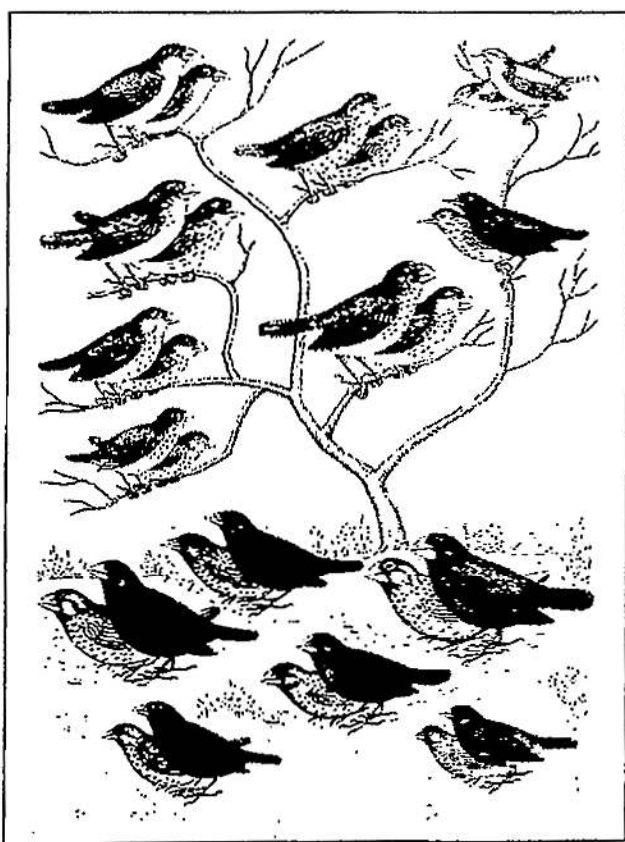


Figure The fourteen species of finches on the Galapagos and Cocos islands. These finches are closely related yet have evolved into separate species. Some of the species of finches live in trees and feed on insects; others live on the ground and feed on seeds. Darwin's observations on the finches were important in the development of his evolutionary ideas. (From "Darwin's Finches" by David Lack. Copyright ©1953 by Scientific American, Inc. All right reserved.)

[設問1] 遺伝学者は進化をどのように考えているか、句読点を含めて70字以内で答えなさい。

[設問2] 本文には Darwin が示した多くの進化の例のうち、最もよく知られているものが記載されている。

(1) その内容を、句読点を含めて200字以内でまとめなさい。

(2) それと類似した例を本文から選び、句読点を含めて100字以内でまとめなさい。

[設問3] species と race について、本文に記載されている具体例を挙げて、句読点を含めて160字以内で説明しなさい (species を S, race を R と略してもよい)。

[設問4] artificial selection について、

(1) この用語を和訳しなさい。

(2) 本文の記述をもとに、句読点を含めて50字以内で具体的に説明しなさい。