Latin in the formation of the names of bacterial taxa has been issued by the Judicial Commission of the International Committee on Bacteriological Nomenclature (for the International Society of Microbiologists) (*1*). Some of the proposals do not agree wholly with those of Paclt (*2*) published recently in SCIENCE. This author points out some problems that will confront the zoologist who endeavors to follow certain suggestions made by Bonnet (*3*) relative to the use of *i* and *j*, and *u* and *v* in Latin words. He then proposes certain transliterations of Greek diphthongs in formation of Latin names of taxa. Although in general his suggestions are sound and in accord with classic and scientific precedent, some difficulties inherent in certain of his proposals should be pointed out.

The proper diphthongs in Greek are eight in number, five with ι and four with ῠ as the second letter. They are αι, αυ, ει, ευ, οι, ου, ηι, and υι.

There is substantial agreement that αι should become *ae* and οι become *oe* when transliterated. Occasionally, perhaps following the trend toward "simplified spelling," each of these diphthongs is incorrectly transliterated as *e*, with consequent confusion as to the meaning. For example, when properly transliterated, καινός ('new') is *caenus*, κοινός ('in common') is *coenus*, and κενός ('empty') is *cenus*. If all are transliterated as *cenus*, the key to the literal meaning of newly coined words is lost. In "American" English the dictionary gives 'cenogenesis' instead of 'caenogenesis' from *caenus*, 'cenotaph' from *cenus*, and 'cenobite' instead of 'coenobite' from *coenus*. With all transliterated as *cenus*, would *cenobium* mean empty life, or new life, or common life? Fortunately in this case we still recognize coenobium. The Greek αἷμα is properly transliterated *haema*, but we have such transliterations in bacterial names and epithets as *Hemophilus hemolyticus*. This particular mistransliteration causes no serious difficulty, however, as there are no Greek words in *hoem* to cause confusion.

The diphthong ει may be transliterated either as *i* or *e*. Paclt suggests that it should be rendered as *e* before a vowel and as *i* before a consonant. We have the generic names *Zea* from ζειά and *Dinosaurus* from δεινός ('terrible'). But one encounters difficulty with such a rule in the case of words like θετον ('sulfur'), which is practically always transliterated as *thium*, whence *Thiobacillus*. This transcription permits differentiation from derivatives of θειος ('divine') as in *Theobroma*. Strict application of Paclt's rule would lead to confusion.

The transliteration of ου as *u* is apparently satisfactory, although it sometimes causes difficulty for the unwary. The Greek πούς, ποδός = *pus, podis* is not uncommon as the last component of compound names, with the consequent confusion as to Latin declension, as in *Bacillus ornithopi* instead of *Bacillus ornithopodis* from *Ornithopus*.

Paclt also suggests that the Greek αυ and ευ preceding a consonant become in the Latin the diphthongs *au* and *eu*, but before a vowel they should become *av* and *ev*. The wisdom of this dictum may be questioned. The Harper *Latin Dictionary* lists 11 words transliterated from the Greek which in the latter had the prefix ευ followed by a vowel; in all these the diphthong is retained and the alternative spelling with *ev* listed as less correct. An exception is to be found in *evangelium* and its derivatives. Latin words with the first two letters *ev* are for the most part compounds with *e* as a prefix. It is suggested that the transliteration ευ = *ev* before a vowel be used only where there is good Latin precedent.

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## The Intrarenal Venous Pressure

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It has been found that the intrarenal interstitial pressure (IRP) in dogs averages 25 mm Hg (*1*). Hence it was postulated that the pressure within all the fluid-filled tubes of the kidney, including tubules, lymphatics, capillaries, and venules, must exceed 25 mm Hg or else the IRP would collapse these several tubes and prevent fluid flows through them. In order to test the hypothesis, an attempt was made to measure the venous pressure above the epithelial lining of the renal pelvis.

A long 16-gauge needle was thrust through the body wall of large dogs and thence into the vena cava on the left side, opposite the entrance of the right renal vein. (Bleeding is minimal with the dog in the prone position.) Then the needle was manipulated into the renal vein. Next a saline-filled plastic catheter (nylon, OD, 0.95 mm, ID, 0.51 mm) was run through the needle, pushed through the renal hilus, and manipulated gently toward the cortex and up an interlobar vein. Working blindly, one failed in about half the attempts because the catheter's tip fouled the walls of an interlobar vein. But in the other half the catheter readily passed up an interlobar vein and into an arcuate branch. The position of the catheter's tip was determined at necropsy. The numerous venous collaterals in the kidney (*2*) are thought readily to drain away any blood which dams up behind the single catheter-blocked arcuate vein. An isometric manometer was connected with the catheter to give pressure readings when desired.

When the tip was successfully placed in an arcuate vein, the pressure here was found to be about the same as the simultaneous IRP as measured by the transduced equilibrium method (*3*). It averaged 24 mm Hg in 18 normal dogs. During the peak of glucose or urea diuresis, the arcuate venous pressure increased

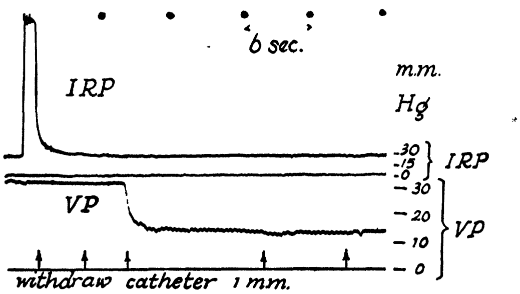


FIG. 1. Pressure changes during withdrawal of renal vein catheter from arcuate into interlobar vein. A simultaneous measurement of intrarenal pressure is shown.

to about 53 mm Hg, just as does the IRP (*4*). With pressor doses of epinephrine, it fell transiently to 9 mm Hg, as does the IRP (*4*). With increased ureteral pressures, it rose sharply, as does the IRP. The two pressures are the same under all conditions (renal arterial occlusion excepted): the coefficient of correlation between them in 23 dogs, each one subjected to various experiments, was 0.85 in a range of IRPs from 6 to 73.

When the catheter was pulled out, a millimeter at a time, while simultaneously recording its pressure changes, at a certain point during the withdrawal the pressure abruptly dropped to about 7 mm Hg. Fig. 1 shows such an experiment; in this instance the pressure dropped from 32 to 15 mm Hg. At this point, the tip of the catheter was found, by necropsy, to be in an interlobar vein, about a millimeter below the confluence of the arcuates. Evidently the point of abrupt pressure change, which we have previously postulated to be somewhere above the epithelial lining of the pelvis (*5*), lies, in the renal venous system, close to the junction of arcuates with interlobars.

Because the arcuate venous pressure is some 25 mm Hg, the pressure farther back—i.e., in the renal venules and peritubular capillaries—must be greater than 25 in order for blood to flow through them. The initial hypothesis that intrarenal venous pressure exceeds 25 mm Hg is therefore proved. At the arcuate-interlobar junction, there is presumed to be formed a physiological constriction similar to that described in a model we have constructed to study the dynamics of renal blood flow (*5*). This constriction, by interposing a resistance in the renal venous circulation, has the effect of keeping renal venous pressure higher than intrarenal pressure. Blood is, in effect, dammed up behind the constriction at relatively high pressures, and the kidney is kept inflated with blood by hydrostatic pressure from the heart (*6*).


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# Establishment of an Antarctic Seismological Station[1]


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Earthquakes are believed to involve the breaking of the earth's crust under stress. Actual discovery of their location is the only means of ascertaining the action that takes place beneath the surface. They occur mainly in belts of orogenic activity and where the earth's crust is weak, and it is significant that the earthquake belts include most important mountain ranges both above and below sea level and are associated particularly with regions of major gravity anomalies.

Recording by instruments of present-day sensitivity has been carried on for the past 40 years. For accurate location three or more stations must pick up the tremors with sufficient strength, and the stations should be located at distinctly different azimuths from the quake. Thus certain belts are not completely defined, especially where they do not come within range of recording instruments, and much of the activity goes unnoticed or unlocated. This is not true for quakes of major magnitude, but the situation does exist for much of the Southern Hemisphere. Antarctica has never had an adequate teleseismic station, and the great surrounding water body prevents any good station from existing even close to the continent. Many of the Southern Hemisphere's large earthquakes are picked up only by stations of a northerly azimuth from the quake, and as a result, exact location is poor. Recordings of an antarctic seismograph station, therefore, are of definite significance.

*Instruments.* In choosing instruments for such a region, three important facts must be considered: first, the uncertain and difficult conditions under which they are to be established and operated; second, the instrument or combination of instruments suited for recording the data desired; and, third, the unavailability of replacements. Thus, every attempt should be made to keep the program as simple as possible.

The two seismographs used on the Ronne Antarctic Research Expedition were: (1) the Neumann-Labarre horizontal component, a tough mechanical instrument having an adjustable natural period of 1–4 sec, a magnification of about 5,000, and on which any delicate part, such as the fiber or hinge, could be easily replaced; and (2) the Sprengnether, series H, horizontal component, having an adjustable natural period of 6½–22½ sec, and a magnification varying from 2,000 to 3,000. The latter instrument was supplied with two galvanometers: one with natural period of 6½ sec, and the other with natural period of 22½ sec. Besides providing two different

[1] This paper comprises Technical Report No. 10 in the ONR Series covering the work of the Ronne Antarctic Research Expedition 1946–1948. The work was done under contract (No. N6-onr-280) with the Geophysics Branch, Physical Sciences Division, and it benefitted from the assistance and cooperation of the U. S. Coast and Geodetic Survey, the Jesuit Seismological Association, and Columbia University.