ject ed acetylcholine and to electrical
stimulation of the sciatic nerve. The
agents used were cyclopropane, ether,
ethylene, sodium ethyl (1-methyl-
butyl) thiobarburate (Sodium Pento-
thal), and tribromethanol with amyl-
ene hydrate (Avertin Fluid).

"From the observations recorded in
this investigation, it can only be said
that (1) the contraction of the gas-
trocnemius muscle which is elicited by
intraarterially injected acetylcholine
or electrical stimulation of the nerve is
less pronounced in dogs anesthetized
with ether, tribromethanol, and sodium
pentothal than in dogs anesthetized
with cyclopropane or ethylene, (2)
prostigmine potentiates the contraction
response in the dog anesthetized with
cyclopropane and ether, and (3) the
difference in contraction during anes-
thesia with the various agents is not
altered by sectioning the nerve supply
to the muscle. It seems likely, there-
fore, that the interference with the
contraction is located in the humoral
mechanism of transmission of nerve
impulses, and that ether, tribromet-
nanol, and sodium ethyl (1-methyl-
butyl) thiobarburate (Sodium Pento-
thal) can be said to have a curariform
action. Of these three, ether causes
the greatest interference; tribrometa-
nanol and sodium pentothal do so only
in very high blood concentrations.
The clinical difficulties encountered
with the concomitant use of ether and
curar are thus accounted for." 13
references.

J. C. M. C.

GILLIES, JOHN: The Time Factor in

"Duration-time of surgical opera-
tions is frequently a factor which
ought not to be disregarded. Just as
the aged person, forced to bed by an
immobilizing accident, may develop
hypostatic congestion of the lungs and
anoxia in a few days' time, so the in-
dividual lying on an operating table
with his respiratory and circulatory
functions and metabolism depressed
by an inhalational anaesthetic or by
spinal block analgesia may develop
pneumonia, but in a much shorter
time. Whether he does so or not de-
pends upon a number of factors, in-
cluding the type and duration of the
operation, the anaesthetic agent and
its mode of administration, the depth
of anaesthesia, and the extent to which
physiological processes are deranged.
With advances in surgery the time
factor is to a certain extent ignored,
partly because of the faith which an-
aesthetists have engendered and fos-
tered in the less toxic agents and newer
methods now employed. Under the
present abnormal conditions, also,
there is growing up a group of younger
surgeons in wholetime hospital service
who, untrammelled by the rush of
competitive surgery, develop what
might be called an easy-going tempo.
The same might be said of some of the
younger generation of anaesthetists
who tend to over-elaborate their part
and so extend unnecessarily the time
during which the patient is under the
anaesthetic.

"In the first place then, reference
must be made to avoidable delays, par-
ticularly the tiresome minutiae which
sometimes prolong the interval be-
tween the commencement of the an-
aesthetic and the making of the first
incision. . . . One feels that the in-
experienced anaesthetist is often
tempted to save time but only wastes
it by premature attempts at passing a
tube. . . . To spend time passing end-
otracheal tubes in cases where such
a method is not essential, is unjustifi-
able and helps to bring into disrepute
one of the most valuable methods of
anaesthetic administration available to-
day. . . . The struggling and breath-
holding accompanied by anoxaemia
which sometimes occur during a
Abstracts

lengthy second stage, may produce deleterious effects such as raised intracranial tension and its sequelae, especially in hypertensive patients. . . . Prolonged anoxaemia must be avoided in all cases. . . .

"The opinion of the majority of surgeons and anaesthetists would probably hold that the problem is not simply one of the time taken to perform the operation, but the period during which the patient is subjected to the influence of depressant drugs. The premedication, the anaesthetic proper and the post-anaesthetic medication given in the first seventy-two hours, are all concerned together. . . . The factor of post-medication is important in so far as it affects a prolongation of the deranged physiology produced during operation. The nature of the operation may be significant, not only for the abnormal conditions which it creates at the time, but also for the more immediate after-effects on the patient, and the extent to which sedative and analgesic drugs may be required. . . . For a lengthy operation, the technique of closed anaesthesia with CO₂ absorption, not only fulfils the requirements of the surgeon, but also helps greatly to mitigate the derangement of respiratory and circulatory function which frequently occurs during long operations and persists in the post-operative period. But even the skilful use of the closed method will not save the patient from the toxic effects of a potent anaesthetic agent distributed throughout the tissues for a long time. If prolonged muscular relaxation is demanded, it should be achieved by nerve block (spinal or regional) whilst the patient is kept just below the level of consciousness by the administration of nitrous oxide or cyclopropane along with a sufficiently high concentration of oxygen to combat anoxia. Intravenous pentothal sodium is an alternative to gas or cyclopropane, but its dosage throughout a long operation should be minimal and uniformly controlled and adequate oxygenation maintained. The anaesthetist’s work does not end at the close of the operation. He must take measures to hasten the elimination of the anaesthetic drug and take an interest and share in the directing of post-medication. Thus will he help still further to modify the time factor by preventing unnecessary prolongation of the effects of the drugs he has administered." 14 references.

J. C. M. C.


“Although morphine sulfate has been used therapeutically for about 140 years, too little attention has been given to the use of this valuable and time tested drug by the intravenous route. . . . The intravenous route of administration is especially recommended for patients suffering severe pain because of the rapidity with which the analgesia is produced. . . . In general, the administration of morphine to small children is best avoided because of the instability of their respiratory centers. . . . The effect of the drug after intravenous administration, in spite of being more pronounced at first, probably will last almost as long as the effect after subcutaneous administration. . . . No more of the drug should be injected than the amount necessary to obtain the result one wants. . . . In cases in which the dose of intravenous morphine cannot be gauged by the relief of pain, the patient is asked to notify the physician if such symptoms as dizziness, weakness, drowsiness, warmth, numbness, tingling, neuralgic pain, or backache occur. If one of these symptoms occurs, the injection is stopped. As a rule, 1/2 to 1/4 gr. (8 to 10 mg.) of mor-