Circulation Research

SUBJECT INDEX

VOLUME X JANUARY-JUNE, 1962

A

Adenosinetriphosphate, effect on ventricular fibrillation, 642

Albumin solution, cerebral circulation, 767

Aldosterone, secretion affected by cardiac glycosides, 178

Anemia, increased cardiac output and DCO, 354

Anephrotensin, in hypertension, 880

Aneurysm, relation to aortic pressure dissection, 807

Angiocardiography

detectors for, 569
indicator-dilution curves for, 531

Angiography
intercoronary reflex, 739
serial, on cerebral circulation, 259

Angiotensin
blood flow and vascular resistance, 807
in spontaneous hypertension, 817

Anticoagulants, antithrombotic effects, 647

Aorta
arteriosclerosis
following electron irradiation, 61
after localized x-irradiation, 51
ascending pressure and diameter relation, 778
constriction in rabbit, 11
oxidative enzymes influenced by gonadectomy, 642
pressure dissection, 897

Aortic regurgitation, quantitation by indicator techniques, 519

Arteries
arterioles, bilateral ligation, 73
constriction, architecture of, 668
pulmonary, baroreceptors in, 664
vertebral, bilateral ligation, 73

Arteriosclerosis
aortic
following electron irradiation, 61
after localized x-irradiation, 51
vasoconstriction, role of, 925
Ascending aorta, pressure and diameter relation, 778
Asphyxia, effects on high-energy phosphate and creatine content of heart, 333

Atherosclerosis
prevention and regression by piperidine compound, 904
rate of growth, effect of, 851
Atrial fibrillation, venous return, effect on, 188

Atrial septal defect, hemodynamic effects of changes in position, 227

Atrium, carotid body hypoxia, 676

B

Baroreceptors, in pulmonary artery, reflex changes by stimulation of, 664

Bat, peripheral arterial vessels, 686

Blood
antithrombotic activity of niacinamide, 647
coagulation, effect of exercise, 691
erthrocytes, vascular permeability to shock, 758
vasoactive substances in, 880
blood flow
bradykinin, effects in humans, 105
coronary collateral, improvement of, 142
icotine, effect of, 27
Persantin, effects of, 35
reflexes and embolization, 722
digital, effects of bradykinin, 105
external counting techniques, 505
by indicator dilution, 447, 505
regional, effect of angiotensin, 897
relation to contraction force in skeletal muscle, 94
temperature changes, effect in skeletal muscle, 89
by thermodilution, 491
tissue, after occlusion and surgery, 45
Blood pressure
baroreceptors in pulmonary artery, 664
bilateral cerebral ligation, effect, 73
hypertension, response to hexamethonium and
pressor drugs, 817
and renin concentration, 696
Blood volume, hypervolemia, on cerebral circulation, 767
Body position, changes in dogs with atrial septal
defect, 227

Book reviews
Agression et Réanimation en Medicine Interne
(Michon, Lecan), 364
Atlas of Bronchoscopy, An (Huzly), 364
Bioelectricity (Suckling), 365
Blood and Other Body Fluids (Altman, Dittmer), 364
Clinical Haematology (Entham), 365
Congenital Malformations of the Heart, vols. 1 and 2 (Taussig), 365
Die Dynamik Des Venösen Rückstromes (Krug, Schliefer), 944
Glauconine, Le (Desvignes), 364
Phosphorus Metabolism of Brain (Health), 944
Problems of Pulmonary Circulation (de Reuch, O'Connor, eds.), 364
Surgical Treatment of Portal Hypertension, Bleeding Esophageal Varices and Asceses
(Mackby), 364

Bradykinin
digital blood flow, 105
on systemic and coronary circulation, 359

Brain circulation. See Cerebral circulation

Bretylium
circulatory effects in dog, 83
myocardial effects, 347

Bronchial circulation, effect of drugs, 3

Bundle-branch block
electrical-mechanical relationships, 280
electrocardiogram in bovine heart, 593

C

Capsaicine, action on pulmonary afferents, 792

Cardiac insufficiency, and hyperfunction of the heart, 250

Cardiac murmur, pulmonary arterial constricting, 772

Cardiac output
anemia and dichloroisoproterenol, 354
balance between right and left ventricles, 17
bretylium, effects of, 83
external counterpulsation techniques, 505
guanethidine, effects of, 83
and heart rate in block, 658
by thermodilution, 491

Cardiopathy, electrolyte-steroid with necrosis, 782

Cardiopulmonary bypass, management of lungs during, 131

Cardiovascular reflexes, controversial, 831

Carotid artery, ligation, effect on blood pressure, 73

Carotid bodies, hypocoxic stimulation, 676

Catecholamines
release
bretylium, 83, 347
guanethidine, 83

Catheter, tip position and pulmonary wedge pressures, 215

Cattle
high-altitude induced pulmonary hypertension, 172
normal hemodynamics in, 166

Cerebral circulation
angiography, 259
bilateral ligation, effect of, 73
drugs, action of, 259
hypervolemia, effects of, 767

Chlorpromazine, effects on hemodynamics in normal cattle, 166

Chylomicrons, intravenously administered, disposal of, 786

Circulation velocity, ascending aorta, 778

Coronary circulation
bradykinin, effects of, 359
elevation of collateral flow, 142
embolization
and reflexes, 722, 739
and shock, 746
flow after occlusion and surgery, 45
intercoronary reflexes, 709, 722, 739
nicotine, effect of, 27
Persantin, effects of, 35
reflexes and embolization, 722, 739

Coronary embolization
with lycopodium spores, 712, 722, 739, 746
and reflexes, 709, 722, 739
and shock, 746

Coronary heart disease, inhibition of vasculoi
hemagglutinins by sera, 836

Creatine, content of heart, 333

D

Dichloroisoproterenol, blockade of increased cardiac output, 354

Digitals, effect on aldosterone secretion, 178

1-Dimethylinmoethyl-4-benzylpiperidine (IN 379),
in prevention and regression of atherosclerosis, 904

Circulation Research, Volume X, June 1964
Dopamine
  circulatory effects in man, 237
  heart-lung preparation, 68

Editorials
  basic medical science education, 583
  Editor's note, 249
  intercoronary reflexes, 709

Electrocardiogram
  bundle-branch block in bovine heart, 593
  first derivative, 220
  high-frequency components, 870
  power spectrum analysis, 870

Electrolyte-steroid-cardiopathy, role of potassium in pathogenesis, 782

Electron irritation, aortic arteriosclerosis after, 61

Electrophysiology, of human heart muscle, 306

Embolization, coronary
  with lycopodium spores, 712, 722, 739, 740
  and reflexes, 709, 722, 739
  and shock, 746

Endocrine pacemaker, for complete heart block, 632

Enzymes, aortic oxidative, modification of, 624

Epinephrine
  bronchial veins, effect on, 3
  inhibition of vasomotion, 156
  on small arteries, 668
  in spontaneous hypotension, 817

Erythrocytes, vascular permeability in hemorrhagic shock, 758

Exercise, effect on blood coagulation, 691

Extracorporeal circulation
  in myocardial infarction and shock, 916
  pathophysiological changes in the lung, 131

Fibrillation
  atrial, effect on venous return, 188
  ventricular
    in hypothermia, 148
    from lack of substrates, 642

Fibrin, mechanism of thrombolysis, 161

Glycolysis, metabolism in cardiac failure, 321

Glycosides, cardiac, effect on aldosterone secretion, 178

Gonadectomy, modification of aortic oxidative enzymes, 624

Guanethidine, circulatory effects in dog, 83

Heart
  See also Myocardium and Ventricle
  aortic constriction, performance after, 11
  arrhythmia, 630
  atrial pulsation on venous return, 188
  bretylium, effects of, 347
  bundle-branch block in bovine heart, 593
  compensatory hyperfunction, 250
  dopamine, effects of, 68
  electrophysiology of human heart, 306
  endocrine pacemaker for block, 632
  fibrillation, ventricular
    in hypothermia, 148
    from lack of substrates, 642
    hyperlipemia and ischemic disease, 786
    hypophysectomy, influence on, 853
  insulin, 259
  interventricular septum and depolarization, 859
  intramyocardial pressure, 608
  ischemic disease and hyperlipemia, 786
  left, mathematical representation, 519
  murmurs, pulmonary arterial constriction, 772
  output, See Cardiac output and Ventricle, output
  oxygen utilization, reduction by left-heart bypass, 298
  pacemaker for block, 632
  power spectrum analysis in electrocardiogram, 870
  theophylline, inotropic action of, 598
  thermal-dilution technique, 491
  tissue blood flow to, 45
  ventricular ejection, dynamics of, 274
  work during arterial pressure oscillations, 285

Heart block
  circulatory dynamics, 197
  endocrine pacemaker for, 632
  pacemaker failure, 295
  respiration, effects of, 197, 208
  ventricular rate on cardiac output, 658

Heart bypass, reduction in oxygen utilization, 298

Heart disease
  indicator dilution in diagnosis, 531
  ischemic, disposal of chylomicrons, 786
  sera of patients, inhibition of vaccinial hemagglutinins by, 836

Heart failure
  congestive, body composition, 833
  experimental, in guinea pig, 533
  glycolytic metabolism and mitochondria, 321

Heart-lung bypass, management of lungs during, 331

Heart-lung preparation
  bronchial veins, responses, 3
  cardiac performance after aortic constriction, 11
  dopamine, cardiac effects, 68

Heart muscle
  electrophysiology of, 306
  hypophysectomy influence on composition and function, 853

Heart rate
  bretylium, effects of, 83
  on cardiac output in heart block, 655
  carotid body hypoxia, 676
  guanethidine, effects of, 83
Hemagglutins, vasoconial, inhibition by sera of heart disease patients, 836

Hemodynamics
in atrial septal defect, 227
dopamine, effects of, 237
extracorporeal circulation in infarction and shock, 916
hyperthermia in myocardial infarction and shock, 916
in normal cattle, 166

Hemorrhage
circulation of various organs in rat, 753
vascular permeability to shock, 755

Hexamethonium, in spontaneous hypertension, 817

Hyperlipemia, disposal of chylomicrons, 786

Hyperpotassemia, peripheral vasoconstriction, 587

Hypertension
increased vascular reactivity, 369
prolonged biological half-life of sodium, 313
pulmonary, high-altitude induced, 172
renin concentration, 696
spontaneous, in rats, 812
vasoactive substances in blood and urine, 880

Hypervolemia, effects on cerebral circulation, 767

Hypcholesteremia, effect of 17 a-methyltestosterone, 846

Hyphophysectomy, influence on heart, 853

Hypothermia
mechanism of ventricular fibrillation, 148
in myocardial infarction and shock, 916

Hypoxia, cardiovascular responses, 676

Indicator dilution
angiocardiology, 531, 569
central circulatory studies, 447
continuous recording technique, 381
curves
arterial, 531
definition of terms for describing, 379
factors modifying, 123
symbols for describing, 379
venous, 531
detectors for circulatory studies, 447
development of technique, 381, 569
diagnostic applications in heart disease, 531
"diffusible" indicators, 473
dispersion of indicator, measurement of, 409
external counting techniques, 505
flow measurement, 393, 409
future of technique, 599
history of technique, 381
indicators
for circulatory studies, 447

Hyperthermia
mechanism of ventricular fibrillation, 148
in myocardial infarction and shock, 916

Ischemia
heart disease and disposal of chylomicrons, 786
myocardial, levarterenol and methoxamine in shock, 712

Kidney, renin concentration, 696

Levarterenol, myocardial shock, 712

Metabolism
glycolytic, in heart failure, 321
hyperthermia and extracorporeal circulation in infarction and shock, 916
indicators, 381

Lung
distribution of right ventricular output, 763
pathophysiological changes during extracorporeal circulation, 124
respiration during ventricular asystole, 208

Lycopodium spores, in coronary embolization, 712, 722, 739, 746

Mammals, left ventricular function, in, 798

Metabolism
glycolytic, in heart failure, 321
hyperthermia and extracorporeal circulation in infarction and shock, 916
indicators, 381

Microspheres, scandium-115-labeled, 763

Mitochondria, in heart failure, 321

Circulation Research, Volume X, June 1965
## Microtissue Clearance—Substrates

<table>
<thead>
<tr>
<th>Index</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitral regurgitation, quantitation by indicator techniques</td>
<td>519</td>
</tr>
<tr>
<td>Monamine oxidase inhibitors, antithrombotic effects</td>
<td>647</td>
</tr>
<tr>
<td>Murmur, cardiac, pulmonary artery constriction</td>
<td>772</td>
</tr>
<tr>
<td>Myocardial infarction, hyperthermia and extracorporeal circulation, levarterenol and methoxamine, effects</td>
<td>712</td>
</tr>
<tr>
<td>Myocardium, bretylium and catecholamine release, intramyocardial pressure, levarterenol and methoxamine in shock</td>
<td>712</td>
</tr>
<tr>
<td>Natriuretic peptides, effect on, spontaneous</td>
<td>347</td>
</tr>
<tr>
<td>Oxygen, utilization in heart bypass</td>
<td>298</td>
</tr>
<tr>
<td>Renin, relation to serum antithrombin levels</td>
<td>696</td>
</tr>
<tr>
<td>Respiration, during ventricular asystole</td>
<td>197, 298</td>
</tr>
<tr>
<td>Scandium&quot;, labeled microspheres</td>
<td>763</td>
</tr>
<tr>
<td>Shock, from coronary embolization, hemorrhagic, vascular permeability</td>
<td>758</td>
</tr>
<tr>
<td>Skeletal muscle, blood flow and contraction force</td>
<td>188</td>
</tr>
<tr>
<td>Special articles, compensatory hyperfunction of the heart and cardiac insufficiency</td>
<td>550</td>
</tr>
<tr>
<td>Steroid, role of potassium in electrolyte-steroid-cardiopathy</td>
<td>782</td>
</tr>
</tbody>
</table>

### Potassium
- in pathogenesis of electrolyte-steroid-cardiopathy, 782
- peripheral vasoconstriction, 557
- ventricular fibrillation, effect on, 642

### Premature Beats
- contour in experimental infarction, 939

### Pulmonary Artery
- baroreceptors affecting blood pressure, 664
- capsaicin, action on afferent endings, 792
- constriction and murmur, 772
- labeline, action on afferent endings, 792

### Pulmonary Circulation
- arterial constriction and murmur, 772
- catheter tip position and wedge pressures, 215

### Pulmonary Hypertension
- high-altitude induced in cattle, 372

### Reflexes
- cardiovascular, 831
- coronary angiography, 739
- intercoronary, 709, 722, 739

### Regional Circulation
- effects on angiotensin, 807

### Renin
- relation to serum antithrombin levels, 696

### Respiration
- during ventricular asystole, 197, 298

### Scandium", labeled microspheres
- Scandium", labeled microspheres | 763  |

### Shock
- from coronary embolization, hemorrhagic, vascular permeability | 758  |
- hypothermia and extracorporeal circulation, levarterenol and methoxamine in myocardial ischemia, 712
- tourniquet, on circulation of rat organs, 753

### Skeletal Muscle
- blood flow and contraction force, relation | 94  |
- microtissue clearance, 89

### Special Articles
- compensatory hyperfunction of the heart and cardiac insufficiency | 550  |
- controversial cardiovascular reflexes | 531  |
- factors modifying contours of indicator-dilution curves | 129  |

### Steroid
- role of potassium in electrolyte-steroid-cardiopathy | 782  |

### Substrates
- ventricular fibrillation from lack of, 642
Symposium, on use of indicator-dilution techniques in study of circulation, 377-381

T

Temperature, regulation of muscle flow, 89
Theophylline, isotropic activity, 598
Thermal dilution, techniques, 491
Thrombolysis, mechanism of, by plasmin, 161
Thyroid, pacemaker for heart block, 632
Tissue blood flow, to the heart, 45

U

Urine, vasoactive substances in, 880

V

Valvular regurgitation, quantitation by indicator techniques, 518, 509
Vascular reactivity, in hypertension, 269
Vasoconstriction
arteriosclerosis, experimental, 925
coronary, induced by embolization, 739
peripheral, and hyperkalemia, 587
small arteries during, 608
Vasomotor system, inhibition by epinephrine and norepinephrine, 156
Vasopressin, in spontaneous hypertension, 817
Veins, bronchial, responses in heart-lung preparation, 3

W

Warfarin, antithrombotic activity, 647

X

X-ray, aortic arteriosclerosis after irradiation, 51

Venous return, influence of atrial fibrillation, 188

Ventricle
asystole, circulatory dynamics and respiration during, 197, 208
cerebral body hypoxia, 676
depolarization in dog, 859
ejection, dynamics of, 274
fibrillation in hypothermia, 148
from lack of substrates, 642
interventricular septum and depolarization, 859
left contraction and intramyocardial pressure, 608
function in various mammals, 798
function curves, response to pressure load, 885
output balance between right and left, 17
distribution in lungs, 763
premature beats in myocardial infarction, 939
rate and cardiac output in heart block, 658
response to pressure load, 885
right, distribution of output in lungs, 763

Ventricular ejection, dynamics of, 274

Vertebral artery, effect of ligation on blood pressure in rabbit, 73

Vessels, arterial, length and diameter, 686

INDEX