

# INDEX OF SUBJECTS, 1936.

## A.

- Acenaphthene-3-aldehyde**, and its derivatives, 344.
- Acenaphthylene glycol**, preparation of, 336.
- Acetal**, acid hydrolysis of, 1363.
- Acetaldehyde**, thermal decomposition of, 812.  
oxidation of, by hydrogen peroxide in presence of selenium oxychloride, 633.  
photochemical oxidation of, 1036.  
photolysis of, at high temperatures, 890.
- Acetanilide**, rate of bromination of, 1156.  
exchange reaction of deuterium oxide with, 1811.
- Acetic acid**, thermal analysis and refractivity of mixtures of, with chlorobenzene, 791.  
salts, electrolysis of, in non-aqueous solution, 820.  
basic beryllium salt, dipole moment of, 910.  
methyl ester, catalytic hydrolysis of, 1362.  
 $\beta$ -octyl ester, rotation of, in various solvents, 1007.  
phenyl ester, hydrolysis and alcoholysis of, 1014.
- Acetic acid**, bromo-, sodium salt, elimination of bromine in aqueous hydrolysis of, 497.  
chloro-, and its salts, hydrolysis of aqueous solutions of, 153.
- Acetic- $\beta$ -apocholic acid**, 468.
- 2-Acetimido-1-methyl-1:2-dihydro- $\beta$ -naphthathiazole**, 1670.
- 2-Acetimido-1-methyl-1:2:5:6:7:8-hexahydro- $\beta$ -naphthathiazole**, 1671.
- Acetoacetic acid**, ethyl ester, condensation of, with furfurylidene tetralone, 752.
- 2-Acetomethylamido- $\beta$ -naphthathiazole**, 1670.
- Aceto-1-naphthalide**, 2:4-dibromo-, 4-bromo-8-nitro-, and 4:8-dinitro-, 1338.  
3-bromo-2-nitro-, 3-chloro-2-nitro-, 3-iodo-2-nitro-, and 2:3-dinitro-, 1153.  
4-chloro-2-nitro-, 1502.
- Acetone**, photolysis of, at high temperatures, 890.
- Acetone glucose 5-nitrate**, 1554.
- Acetone-*d*-neomenthylglycinehydrazone**, 1225.
- Acetonesulphuric acid**, action of diazonium salts with, 83.
- 4-Acetonyl-6:7-methylenedioxy-3-methyl-3:4-dihydroquinazoline picrate**, 199.
- 1-Acetonyl-3- and 4-methylcyclohexane-1-acetic acids**, and their ethyl esters, and their derivatives, 572.
- Aceto-*m*-toluidide**, monochlorination of, 692.
- 2-Acetoxy-3-methoxybenzylidenedi-*p*-methylacetophenone**, 258.
- 2-Acetoxy-10-methoxydodecahydrochrysene**, and its acetate, 758.
- $\beta$ -Acetoxyparaffins**, trichloro-*a*-nitro-, action of diazonium salts on, 1693.
- $\beta$ -Acetoxypentanol**,  $\gamma\delta$ -trichloro-*a*-nitro-, phenyl- and tolyl-hydrazones of, 1693.
- $\beta$ -Acetoxypentanol**,  $\gamma\gamma\gamma$ -trichloro-*a*-nitro-, phenyl- and tolyl-hydrazones of, 1693.
- d*- and *l*- $\alpha$ -Acetoxypropionamides**, 307.
- d*- and *l*- $\alpha$ -Acetoxypropionanilides**, 307.
- Acetyl cyanide**, dimolecular, action of ammonia and aniline on, 801.
- 6-Acetyl acetone glucose 3:5-dinitrate**, 1554.
- a*-Acetyl- $\alpha$ -bis-(3:4-dimethoxybenzyl)butyrolactone**, 728.
- O*-Acetylchloral cyanohydrin**, action of aniline on, 801.
- O*-Acetyltrichlorolactic acid**, action of phenylhydrazine on, 801.
- $\alpha$ -Acetyl- $\beta$ -(3:4-dimethoxybenzyl)butyrolactone**, 727.
- $\omega$ -Acetyl-3:5-dimethylacetophenone**, 2-hydroxy-, 216.
- 6-Acetylhexahydrocarbazole**, 1298.
- Acetylcyclohexene**, condensation of, with methoxytetralone, 757.
- a*-Acetyl- $\beta$ -3-methoxy-4-ethoxybenzylbutyrolactone**, 1001.
- $\gamma$ -Acetyl- $\alpha$ -methylbutyric acid**, methyl ester, 193.
- a*-Acetyl- $\beta$ -(3:4-methylenedioxybenzyl)butyrolactone**, 351.
- Acetylmethylmalonic acid**, ethyl ester, semicarbazone, 1808.
- 3-Acetyl-1-methylcyclopentane-2-acetic acid**, 619.
- 1-*N*-Acetyl-1:2-naphthylenediamine**, 3-chloro-, and its stannichloride, 1763.
- N*-Acetyl-1:4-naphthylenediamine** stannichloride, 1764.
- 1-*N*-Acetyl-1:4-naphthylenediamine**, 2-nitro-, 1764.
- 2-*N*-Acetyl-1:2-naphthylenediamine**, 4-nitro-, 1764.
- 1-Acetylcyclopentene**, 763.  
condensation of, with methoxytetralone, 757.
- Acetyl(phenyliminobenzyl)urethane**, 432.
- 3-Acetyl-2-phenyl-4-quinazolone**, 432.
- 7-Acetyltetrahydrocarbazole**, 40.
- 3-Acetyl-2:6:8-trimethylchromone oxime**, 217.
- Acid**,  $C_{13}H_{26}O_3$ , from oxidation of  $\alpha$ -cyperone, 672.  
 $C_{13}H_{26}O_3$ , from ethyl  $\beta$ -phenylethylmalonate and 2-acetyl-1-methyl- $\Delta^1$ -cyclopentene, 52.  
 $C_{31}H_{35}O_{13}N_3$ , from oxidation of aconitine, 82.
- Acids**, conversion of, into aldehydes, 584.  
dibasic, effect of temperature on ionisation constants of, 133.  
carboxylic, hydrolysis of esters of, 222.  
monocarboxylic, constitution and dissociation constants of, 644.  
fatty, combination of, with nitrogen bases, 1346.  
fatty monobasic, ethyl and methyl esters, heats of crystallisation of, 1372.  
fatty higher, compounds in binary systems of, 623.  
organic, dissociation constants of, 1756.  
organic monobasic, acid salts of, 867.  
weak, dissociation constants of, in heavy water, 1361.  
complex formation involving, 1487, 1489, 1494.  
identification of, 398.
- $\psi$ -Acids**, velocities of dissociation of deuterons and protons from, 1550.
- Acid chlorides**, dicarboxylic, dipole moments of, 1178.
- Acid halides**, dipole moments of, 158.  
aromatic, dipole moments of, 1175.
- Aconitine**, 80.
- Aconitoline**, and its derivatives, 82.
- Acraldehyde**, addition of, to cyclopentadiene, 1029.
- Acridine derivatives**, preparation and therapeutic properties of, 1484.
- Acridine**, *mono*- and *di*-amino-derivatives, and their acetyl derivatives, and 2-chloro-5-amino-, and 5-chloro-2-nitro-, 1617.  
2:6- and 2:8-diamino-, 88.  
2:8-diamino-, anil and styryl derivatives of, 1484.

- Acridine**, 3:5-dichloro-, 1164.  
1:3:5-trichloro-, 1548.  
5-chloro-2:6- and -2:8-dinitro-, 92.  
**Acridines**, substituted, synthesis of, 608.  
**Acridine series**, chemotherapy in, 88, 1614.  
**Acridine-5-aldehyde**, anil and styryl derivatives of, 1484.  
**Acridone**, diamino- and dinitro-derivatives, 1616, 1618.  
**Acridones**, diamino-, and dinitro-, and their derivatives, 91.  
**Activity**, equilibrium constants in terms of, 1303.  
**Address**, presidential, 533.  
**Adelges** (*Pineus strobi*). See Chermes, white pine.  
**Adenine**, dissociation constant of, 1713.  
**Adenosine**, 765.  
dissociation constant of, 1713.  
**Adipodi-2-vinylanilide**, 183.  
***z*-Adlumine**, nitro-. See Androlodal-6-nitro-3:4-methylenedioxyphthalide.  
**Adsorption** at interface between two fluids, 1306.  
**Affinity**, residual, and co-ordination, 41.  
**Alcohols**, action of carbon monoxide on, 358, 362.  
reaction of, with semicarbazones, 1050.  
**Aldehyde**,  $C_{21}H_{34}O$ , and semicarbazone, from oxidation of calciferol, 907.  
**Aldehydes**, preparation of, from acids, 584.  
from aromatic hydrocarbons, 339.  
from nitriles, 352.  
aromatic, Gattermann's synthesis of, 184.  
condensation of deoxybenzoin with, 806.  
optically active, reagents for, 1222.  
 **$\alpha$ -Aldehyde- $\delta$ -hydroxy- $\beta$ -(2:2:6-trimethyl-4<sup>e</sup>-cyclohexenyl)- $\beta$ -dimethyl-4<sup>ae</sup>-octatriene**, 563.  
**3-Aldehyde-4-methoxydiphenyl**, 805.  
 **$\alpha$ -Aldehyde- $\delta$ -(2:2:6-trimethyl-4<sup>e</sup>-cyclohexenyl)- $\beta$ -methyl-4<sup>ae</sup>-butadiene**, derivatives of, 562.  
**Algae**, chemistry of, 1376.  
**Aliphatic compounds**, substitution in, and Walden inversion, 1173.  
introduction of deuterium into, 1643.  
higher, 625.  
**Alkoxybenzophenones**, 1854.  
**Alkylmalonic acids**, primary dissociation constants of, 1756.  
**3-Alkylquinolines**, synthesis of, 1366.  
**Alkenes**, resolution of, by asymmetric catalysis, 987.  
**6-Allylacetophenone**, 2:5-dihydroxy-, 279.  
 **$\beta$ -Allylamino-*n*-pentane**,  $\gamma\gamma\delta$ -trichloro- $\alpha$ -nitro-, hydrochloride, 1531.  
 **$\beta$ -Allylaminopropane**,  $\gamma\gamma\gamma$ -trichloro- $\alpha$ -nitro-, and its hydrochloride, and phenylcarbonyl derivative, 1531.  
**3-Allyl-3:4-dihydroquinazoline**, 4-hydroxy-, 197.  
**5-Allyloxyacetophenone**, 2-hydroxy-, 279.  
**3-Allylquinazolinium iodide** and picrate, 197.  
**3-Allylresacetophenone dimethyl ether semicarbazone**, 280.  
**Allylresorcinol**, 4-nitro-, 281.  
**Allyl- $\beta$ -resorcyaldehydes**, 278.  
**4-*O*-Allyl- $\beta$ -resorcylic acid**, and its ethyl ester, 280.  
**Allylrespropionphenones**, and their derivatives, 277.  
**Aluminium chloride**, demethylation with, 267.  
**Amidines**, 793.  
**Amines**, ionisation of, in alcohol, 1023.  
action of, on esters, 797.  
with silver nitrate, 96.  
on esters of trichloronitrohydroxyparaffins, 1530.  
with unsaturated compounds with halogen attached to ethylenic carbon, 1169.  
aromatic, nuclear alkylation of, 1783.  
**polyAmines**, 1518.  
**Amino-acid**,  $C_{25}H_{14}O_3N_2$ , and its derivatives, from Höchst yellow U, 1476.  
and its methyl derivative, from Höchst yellow U, 1477.  
**Amino-alcohols**, preparation of, 1480.  
**Amminobutylphosphinepalladium**, dichloro-, 888.  
**Ammonia**, thermal reaction of, with deuterium, 26.  
action of, on esters, 355.  
**Ammonium salts**, conductivity of, in aqueous hydrogen cyanide, 1495.  
**Amyleneplatinous chloride**, 1048.  
***p-n*-Amyloxybenzophenone**, 1861.  
**1-isoAmylpyridinium salts**, 691.  
**Anaesthetics**, local, synthesis of, from cytosine, 1774.  
**Aneurin**, 1555, 1557, 1559, 1601.  
**Anhydrocotarnine-6-amino-3:4-methylenedioxyphthalide**, 201.  
**Anhydrocotarnine-6-nitro-3:4-methylenedioxyphthalide**, 201.  
**Anhydrodigoxigenins**, and their derivatives, 354.  
 **$\alpha$ -Anhydrodigoxigenone**, and its derivatives, 355.  
**2:2'-Anhydro-2:5-diketo-3-(2-amino-4'-tolyl)isoindolinopyrazolidocoline**, and its salts, 1105.  
**Anhydroemicymarigenin**, 445.  
**Anhydroalloemicymarigenin**, 447.  
**Anhydrolodolal-6-amino-3:4-methylenedioxyphthalide**, 201.  
**Anhydrolodolal-6-nitro-3:4-methylenedioxyphthalide**, 201.  
**Anilides**, halogenation of, 1231, 1854.  
**Anilide imidochlorides**, condensation of, with urethanes, 431.  
reaction of, with ethyl sodiomalonate, 428.  
**Aniline**, effects of sodium chloride and aniline hydrochloride on surface tension and partial vapour pressure of aqueous solutions of, 1662.  
condensation of, with 3-methylcyclopentanone cyanohydrin, 1675.  
**Aniline**, *m*-nitro-, influence of solvents on benzoylation of, 1353.  
**Anilinium carbonyltrichloroplatinite**, 1048.  
**Anilinobutylphosphinepalladium**, dichloro-, 887.  
 **$\beta$ -Anilinoacetic acids**, *o*- and *m*-chloro-, ethyl esters, 858.  
**2-Anilino-2-cyano-trans-decahydronaphthalene**, 1675.  
**1-Anilino-1-cyanomethylcyclohexanes**, and their derivatives, 1159.  
**1-Anilino-1-cyano-3-methylcyclopentane**, 1676.  
**2-Anilino-trans-decahydronaphthalene-2-carboxylic acid**, and its amide, 1676.  
**4-Anilino-2-methylanthraquinone**, 1-amino-, and its sodium salt, 1842.  
**Anilinomethylene-*dl*-menthone**, and its nitro-derivatives, 1599.  
**Anilinomethylene-*l*-menthone**, *m*-nitro-, 1600.  
**1-Anilino-3-methylcyclopentane-1-carboxamide**, 1676.  
**2-Anilino- $\beta$ -naphthathiazole**, and its picrate, 1670.  
**Anisole**, 4-chloro-2:3-dinitro-, 1570.  
*o*-nitro-, paracolor, surface tension, and density of, 39.  
 **$\beta$ -*p*-Anisoyl- $\alpha$ -benzylidenepropionic acid**, and its derivatives, 588.  
**Anisoyldianisylcarbinol**, 506.  
**Anisyl-*p*-methoxybenzyl ketone**, derivatives of, 400.  
**Anisyl trianisylmethyl ketone**, 506.  
**Annual General Meeting**, 517.  
**Anodes**, apparent reducing properties of, 1453.  
**Anthracene**, electrolytic reduction of, 206.  
**Anthracene-9-aldehyde**, and its derivatives, 344.  
**Anthraquinone**, 2-bromo-1:3-dihydroxy-, 1843.  
**Anthraquinone dyes**, 1701, 1714.  
effect of alkyl groups on properties of, 1838.  
**Antimalarials**, 1546.  
substituted acridines as, 608.  
*a*-picolyloquinolines as, 610.  
**Aphis**, woolly, chemistry of, 1034.  
**Arctigenin**, and its derivatives, 998.

**Argon**, adsorption of, on salt crystals, 1467.

**Aromatic compounds**, relative directive power of groups in substitution in, 1148.  
nuclear introduction of deuterium into, 1637.

*p*-**Arsanilic acid**. See Phenylarsinic acid, *p*-amino-.

**Arsenic trihydride**, neutron bombardment of, 384.

**Arsinosebacanic acid**, *p*-dichloro-, 904.

*p*-**Arsonoazelanic acid**, and its esters, and sodium salts, 903.

*p*'-**Arsonodiphenyl ethers**, *p*-bromo-, and *p*-chloro-, 1238.

*p*-**Arsonosebacanic acid**, and its esters and sodium salts, 904.

**Aryl hydrogen sulphates**, hydrolysis of, 17, 25, 1649, 1654.

$\beta$ -**Arylaminoacrylonitriles**, ethyl esters, 856.

**2-Arylamino-2-cyano-trans-decahydronaphthalenes**, isomeric, 1675.

**Arylamino-cyanomethylcyclohexanes**, formation of, 1159.

**3-Arylphthalaz-4-ones**, amino-, and nitro-, 311.

**3-Arylquinolines**, synthesis of, 1366.

**Arylsulphonylphenylhydrazines**, reaction of, with bromine, 1242.

**Arylsulphuric acids**. See Aryl hydrogen sulphates.

**Ascorbic acid**, crystalline structure of, 769.

**Atebrin**, synthesis of acridine compounds related to, 1546.

**Atoms**, quadricovalent, stereochemistry of, 775, 1635.

**Atomic theory** and radioactivity, 508.

**Azelaic acid**, and its ethyl hydrogen ester, acid chlorides of, 903.

**Azelaic semialdehyde** 2:4-dinitrophenylhydrazone, 1791.

**Azellanilamide-*p*-arsonic acid**, and its sodium salt, 903.

**Azellanilide-*pp'*-diarsonic acid**, 903.

**Azellaniloethylamide-*p*-arsonic acid**, and its sodium salt, 903.

**Azellanilomethylamide-*p*-arsonic acid**, and its sodium salt, 903.

**Azobenzenes**, hydroxy-, parachor, surface tension, and density of, 39.

## B.

**Balance sheets**. See Annual General Meeting, 528.

**Barium sulphate**, rhythmic turbidity in precipitation of, 1214.

**Base**,  $C_8H_{11}N$ , and its salts, from degradation of strychnine, 1697.  
 $C_{10}H_{11}N$ , and its salts, from degradation of strychnine, 1697.  
 $C_{10}H_{12}N_2$ , and its salts, from degradation of strychnine, 1697.

**Bases**, aromatic, nuclear alkylation of, 1783.  
organic, reactions of, with silver nitrate, 96.  
combination of, with fatty acids, 1346.

**Bebeerine**, 1276.

**Beckmann transformation**, 448.

**Benzaldehyde**, oxidation of, by hydrogen peroxide in presence of selenium oxychloride, 633.

**Benzaldehyde**, *p*-hydroxy-, parachor, surface tension, and density of, 39.

**Benzaldehyde-2'-nitro-4'-tolylhydrazone- $\omega$ -sulphonic- $\beta$ -acrylic acid**, sodium salt, 1102.

*meso*-**Benzanthrone**, 2'-bromo-, 2'-mono-, 2':4- and 2':5-*di*-, and 2':4:8- and 2':5:8-*tri*-chloro-, and 1'- and 2'-cyano-, 783.

*meso*-**Benzanthrones**, 2'-halogeno-, synthesis of, 781.

*meso*-**Benzanthrone-2'-carboxylic acid**, and its ethyl ester, 785.

**Benzene**, structure of, 912, 915, 925, 931, 941, 955, 966, 971, 1210.  
and *p*-*di*- and 1:3:5-*tri*-nitro-, dipole moments of, 862.  
and *p*-dichloro-, dipole moments of, in polar solvents, 487.  
infra-red and Raman spectra of, 966.  
resonance emission spectrum of, 955.  
liquid, Raman spectrum of, 925.  
liquid and vapour, infra-red absorption spectra of, 931.  
vapour, fluorescence spectrum of, 941, 1210.  
vibration frequency of, 971.  
and chloro-, adsorption by, at water interfaces, 119.

**Benzene**, chloro-, thermal analysis and refractive index of binary systems of, with acetic acid and pyridine, 791.  
chloro-, and nitro-, dipole moments of, in polar solvents, 491.  
*p*-dichloro-, thermal analysis and refractivity of mixtures of, with *p*-chlorophenol, 791.  
1-chloro-3:4-*dithiol*-, 178.  
*s*-tricyano-, 1111.  
nitro-, surface tension of mixtures of, with sulphuric acid, 684.  
equilibrium of, with sulphuric acid and water, 1571.  
*m*-dinitro-, additive compounds of, with naphthylamines, 1576.  
5-nitro-1:3-*dicyano*-, 1111.

**Benzeneazo- $\beta$ -naphthol methyl ether**, parachor, surface tension, and density of, 38.

**Benzene-3:4-disulphonic acid**, 1-chloro-, barium salt and acid chloride of, 178.

**Benzenesulphonanilide**, 2:4-*di*bromo-, 1242.

**Benzenesulphonbenzoylhydrazide**, 585.

**Benzenesulphonidibenzoylhydrazide**, 585.

**Benzenesulphonic acid**, 3-nitro-, halogeno- and halogenonitro-phenyl esters, 1677.

**Benzenesulphon-8-nitro-*a*-naphthalide**, *m*-nitro-, and its sodium salt, 1847.

**Benzenesulphon-2':4'-*d*-nitrophenylhydrazide**, 586.

**Benzenesulphon-2':4':6'-trinitrophenylhydrazide**, 586.

**2-Benzenesulphonylbenzamide**, 2-*o*-nitro-, 331.

**2-Benzenesulphonylbenzanilide**, 2-*o*-nitro-, 331.

**Benzenesulphonyl-4-bromophenylhydrazine**, 1244.

**Benzenesulphonyl-2:4-*di*bromophenylhydrazine**, 1244.

**Benzenyl-*N'*-*p*-bromophenyl-*N*-*p*-nitrophenylamidine**, and its hydrochloride, 796.

**Benzenyl-*N'*-*p*-bromophenyl-*N'*-phenylamidine**, 795.

**Benzenyl-*N*- and -*N'*-*p*-bromophenyl-*N'*- and -*N*-phenyl-*N*-methylamidines**, and their picrates, 796.

**Benzenyl-*N*-*p*-chlorophenyl-*N'*-*p*-ethoxyphenylamidine**, and its salts, 795.

**Benzenyl-*N*-*p*-chlorophenyl-*N'*-*p*-methoxyphenylamidine**, and its salts, 795.

**Benzenyl-*N'*-*p*-chlorophenyl-*N*-*p*-nitrophenylamidine**, and its hydrochloride, 796.

**Benzenyl-*N*-*p*-chlorophenyl-*N'*-phenylamidine**, and its derivatives, 795.

**Benzenyl-*N*- and -*N'*-*p*-chlorophenyl-*N'*- and -*N*-phenyl-*N*-methylamidines**, and their salts, 796.

**Benzenyl-*N*-*p*-chlorophenyl-*N'*-*p*-tolylamidine**, and its salts, 795.

*s*-**Benzenyldi-*s*-*tri*bromophenylamidine**, and its derivatives, 795.

*s*-**Benzenyldi-*p*-chlorophenylamidine**, and its derivatives, 794.

*s*-**Benzenyldinitrophenylamidines**, and their derivatives, 794.

**Benzenyldiphenylamidines**, synthesis of, 793.

*s*-**Benzenyldi-*m*-tolylamidine**, 794.

**Benzenyl-*N*-*p*-nitrophenyl-*N'*-*m*-nitrophenylamidine**, and its hydrochloride, 796.

- Benzenyl-*N*-*p*-nitrophenyl-*N'*-phenylamidine**, *p*-nitro-, and its hydrochloride, 796.
- Benzenyl-*N*-*p*-nitrophenyl-*N'*-*p*-tolylamidine**, and its hydrochloride, 796.
- Benzenyl-*N*-*p*-nitrophenyl-*N'*-*m*-4-xylylamidine**, and its hydrochloride, 796.
- Benzhydriylsodium**, syntheses with, 412.
- Benzi**, 4-bromo-, and 4-chloro-, 94.
- 2:3-Benz-1:3:3-bicyclo- $\Delta^2$ -nonene**, 67.
- 2:3-Benz-1:3:3-bicyclo- $\Delta^2$ -nonene-4-one**, and its derivatives, and 3'-amino-, 3'-hydroxy-, and 3'-nitro-, 67.
- Benzochloroanilide** imidochlorides, 430.
- Benzoic acid**, sodium salt, bromination of, 168.
- Benzoic acids**, substituted, dissociation constants of, 645.  
hydrolysis of esters of, 222.
- Benzo-1-naphthalide**, 2:4-dibromo-8-nitro-, 1340.
- Benzonitrile**, polarisation and moment of, in various solvents, 1192.
- Benzonitrile**, 3:5-dinitro-, 1111.
- Benzo-*N*-2:4-dinitrophenylanilide**, 452.
- Benzo-2'-nitro-4'-tolylhydrazide-2- $\beta$ -acrylic acid**, and its nitrile, 1102, 1104.
- Benzophenone**, 2:3-dihydroxy-, 348.  
2:3:4'-trihydroxy-, 348.
- Benzophenone-*p*-dimethylaminoanil**, 4:4'-*di*- and 2:4:2':4'-*tetra*-nitro-, 1470.
- Benzophenoneoxime** 2:4-dinitrophenyl ether, 452.
- Benzophenoneoximes**, *p*-*mono*- and *pp'*-*di*-nitro-, and their picryl ethers, 451.
- Benzoquinone**, dipole moment of, 910.  
molecular forces between cyclopentadiene and, 432.  
addition of, to cyclopentadiene, 1031.
- o*-Benzoquinone** phenylhydrazone, parachor, surface tension, and density of, 39.
- 7-Benzoyl-9-acetyltetrahydrocarbazole**, 41.
- 9-Benzoyl-7-acetyltetrahydrocarbazole**, 40.
- 2-Benzoylbenzoic acid**, 2-3'-bromo-2':4'-dihydroxy-, 1843.
- o*-Benzoylbenzoic acids**, methylated, 567.
- 3-Benzoyl-6:8-dimethylflavone**, 217.
- $\alpha$ -Benzoyl- $\delta\delta$ -dimethylvaleric acid**, amide and ethyl ester, 1480.
- 3-Benzoyldiphenyl**, 4-hydroxy-, and its derivatives, 804.
- 4-Benzoyldiphenyl**, 4-*m*- and *p*-nitro-, 805.
- 4'-Benzoyldiphenyl**, 4-amino-, and its acetyl derivative, and 4-nitro-, 805.
- 3-Benzoyl-9-methylcarbazole**, 1297.
- 1-Benzoyl-4-methylcyclohexane-1-acetic acids**, and their derivatives, 417.  
 $\alpha$ -Benzoyl- $\gamma$ -methylvaleramide, 1480.
- 2-Benzoyloxy-4:6-dimethoxyacetophenone**, 268.
- 4-Benzoyloxy-2:6-dimethoxybenzaldehyde**, 1837.
- 4-Benzoyloxydiphenyl**, Fries rearrangement of, 802.  
*d*- and *l*- $\alpha$ -Benzoyloxypropionamides, 307.  
*d*- and *l*- $\alpha$ -Benzoyloxypropionanilides, 308.
- Benzoyle(phenyliminobenzyl)malonic acid**, ethyl ester, 429.
- 7-Benzoyltetrahydrocarbazole**, 41.  
 $\alpha$ -Benzoylisovaleramide, 1480.
- $\beta$ -Benzoyl- $\alpha$ -veratrylidenepropionic acid**, and its derivatives, 588.
- 3:4-Benzphenanthrene**, synthesis of, 596.
- Benzthiazole**, condensation of, with picryl chloride, 1607.
- Benztiazole**, 5-bromo-1-thiol-, 1674.
- Benztiazoles**, 1-thiol-, 5-substituted, methylation of and their ultra-violet absorption, 1672.
- 1:2:3-Benztriazoles**, absorption spectra of, 111.
- Benzy** bromides, *m*-chloro-, *m*- and *p*-fluoro-, and *m*-iodo-, 1450.  
*o*-nitro-, reaction of, with pyridine, 399.  
compounds, dipole induction in, 1324.
- (-)**Benzy**  $\alpha$ -dimethylallyl ether, 583.
- 1-Benzylaminoacridine**, 1-*p*-amino-, and its salts, and 1-*p*-nitro-, 609.
- 2-Benzyldecalin**, 70.
- trans*-2-Benzyl-2-decalol**, 615.  
3:5-dinitrobenzoate, 70.
- 2-Benzylhexahydrobenzoic acids**, 78.
- 2-Benzylcyclohexane**, 1-bromo-, 78.
- Benzylicyclohexane-2:6-dione**, 51.
- 2-Benzylcyclohexanol**, 69.  
3:5-dinitrobenzoate, 75.
- Benzylicyclohexanols**, dehydration of, 62.
- 2-Benzylcyclohexanone-2-carboxylic acid**, ethyl ester, and its semicarbazone, 69.
- Benzylienediacetophenones**, *o*-hydroxy-, reactions of, 256.
- 2-Benzylidene-1-ethyl-1:2-dihydroquinoline**, 2-2':4'-dinitro-, 1713.
- Benzylienediazinecarboxylic acid**, and *o*-hydroxy-, and *o*-nitro-, isoamyl esters, 1050.
- 3:5-Benzylidene 6-methyl acetoneglucose**, 860.
- 2-Benzylidene-*cis*-0:3:3-bicyclo-octane**, 615.
- Benzyliedene-*dl*-piperitone**, polymorphism of, 1598.
- 2-Benzylidene-1:3:3-trimethylindoline**, 2-2':4'-dinitro-, 1712.
- Benzy** *l*-menthylamine, *p*-nitro-, and its *p*-toluenesulphonyl derivative, 1224.
- Benzy** *l*-menthylnitrosoamine, and *p*-amino-, and *p*-nitro-, 1224.
- 1-Benzyl-4-methylcyclohexane-1-acetic acids**, 418.
- 1-Benzyl-2-methyl- $\Delta^1$ -cyclohexene**, 66.
- 1-Benzyl-2-methyl-5-isopropylcyclohexanol**, 66.
- 1-Benzyl-2-methyl-5-isopropyl- $\Delta^1$ -cyclohexene**, 66.
- 2-Benzylloctalin**, 70.
- 2-Benzyl-*cis*-0:3:3-bicyclooctan-2-ol**, 615.
- $\omega$ -4-Benzylloxybenzoyl-2:4:6-trimethoxyacetophenone**, 570.
- 7-Benzylloxy-6-benzylflavone**, 5-hydroxy-, 269.
- 4-Benzylloxy-4:6-dimethoxychalkone**, 2-hydroxy-, and its acetyl derivative, 570.
- 4-Benzylloxy-5:7-dimethoxyflavone**, 570.
- Benzylicyclopentylcarbinol**, and its 3:5-dinitrobenzoate, 75.
- $\alpha$ -Benzylipimelic acid**, 69.
- Benzylypyridinium nitrate**, and *p*-nitro-, 240.
- Benzy** *p*-tolyl ketone,  $\alpha$ -bromo-, 95.
- 3-Benzyl-2:5:8-trimethylchromone**, 427.
- 3-Benzyl-4:6:8-trimethylcoumarin**, 216.
- Beryllium organic compounds** :—
- Beryllium acetylacetonate**, dipole moment of, 910.
- Biochemistry**, synthesis in, 1079.
- Bicuculline**, synthesis of, 199.
- z*-Bicuculline**, and amino-, iodo-, and nitro-, 201.
- Bile acids**, action of selenium dioxide on, 462.  
synthesis of compounds related to, 50, 52, 54.
- 3:4'-Bisacetamidodiphenylamine**, 1616.
- NN'*-Bis-( $\beta$ -aminoethyl)ethylenediamine**, and its derivatives, 1519.
- 2:8-Bisanisylideneaminoacridine**, 1485.
- 2:8-Bisbenzylideneaminoacridine**, 1485.
- 4:4'-Bisbenzylidenehydrazinodiphenylmethane**, 3:3'-*di*bromo-, 316.
- Bis(butylarsine)- $\mu$ -dithiocyanatodipalladium**, *dichloro*-, 886.
- Bis(butylphosphine)bis(ethylenediamino)- $\mu$ -dichlorodipalladium** *dichloride*, 889.
- Bis(butylphosphine)- $\mu$ -dithiocyanatodipalladium**, *dichloro*-, 887.
- Bis-2:4-dichloronitroformazyl**, 1694.
- Bis-(1-chloro-3:4-dithiolbenzene)cadmium**, diquinine dihydrogen salt, 180.
- Bis-(1-chloro-3:4-dithiolbenzene)mercury**, diquinine dihydrogen salts, 179.

- 2-(5'-Methyl-1':2':3'-benztriazolyl)isoinolinone-3-acetic acid, and its derivatives, 1106.  
*p*-Methylbenzyl nitrate, 240.  
 5-Methylbenzylmethylmalonic acid, 2-bromo-, 60.  
 Methylbenzylmethylmalonic acid, 58.  
 $\alpha$ -5-Methylbenzylpropionic acid,  $\alpha$ -2-bromo-, 60.  
*o*-Methylbenzyl isopropyl ketone, and its derivatives, 675.  
 Methyl  $\alpha\beta$ -dibromo- $\beta$ -phenylethyl ketone, 1316.  
 (+)Methyl- $\alpha\beta$ -dibromopropylcarbinol, 1316.  
 (+)Methyl  $\alpha\beta$ -dibromopropyl ketone, 1316.  
 1-Methyl-2- $\Delta^3$ -butenylcyclohexanol, 475.  
 2-Methyl-1- $\Delta^3$ -butenylcyclohexanol, dehydration of, 476.  
 $\alpha$ -Methyl- $\alpha'$ -*n*-butylglutaric acid, 1447.  
 9-Methylcarbazole-3:6-bis- $\gamma$ -ketobutyric acid, and its ethyl ester, 1298.  
 9-Methylcarbazole-3:6-dicarboxylic acid, ethyl ester, 1297.  
 9-Methylcarbazole-3:6-diphthaloylic acid, ethyl ester, 1297.  
 7-Methylcholesterol, 7-hydroxy-, and its derivatives, 1275.  
 Methyl  $\alpha$ -chloro- $\gamma$ -acetoxypopyl ketone, 1556.  
 Methyl  $\alpha$ -chloro- $\gamma$ -hydroxypopyl ketone, 1556.  
 Methyl  $\alpha$ -chloro- $\gamma$ -phenoxypropyl ketone, 1556.  
 6-Methylcoumarin, 7-hydroxy-, and its acetate, 1831.  
*cis*-9-Methyldecalin, synthesis of, 470.  
 8-Methyl-2:2'-diethylthiocarbocyanine bromide, 5:5'-dibromo-, and iodide, 5:5'-dichloro-, 2-bromo-, 1674.  
 2-Methyl-1:2-dihydrobenzthiazole, 5-bromo-1-thio-, 1674.  
*O*-Methyldihydroxanthoxyletic acid, 632, 1830.  
 4-Methyldiphenylamine-2'-carboxylic acid, 2-bromo-, and 4'-chloro-2-bromo-, 1165.  
 4-Methyldiphenylsulphones, amino-, chloronitro-, nitro-, nitroamino-, and nitrohydroxy- and their derivatives, 221.  
 Methylene-blue, adsorption of, at benzene-water and chlorobenzene-water interfaces, 119.  
 7-Methylenecholesterol, and its derivatives, 1274.  
 Methylene- $\alpha$ -cyperone, hydroxy-, and its 2:4-dinitrophenylhydrazone, 671.  
 $\alpha$ -(3:4-Methylenedioxybenzoyl)- $\beta$ -(3:4-methylenedioxybenzyl)butyrolactone, 747.  
 $\beta$ -(3:4-Methylenedioxybenzoyl)- $\alpha$ -(3':4'-methylenedioxybenzylidene)- $\beta$ -methylenepropionic acid, 746.  
 $\beta$ -(3:4-Methylenedioxybenzoyl)- $\alpha$ -(3':4'-methylenedioxybenzylidene)propionic acid, and its  $\gamma$ -lactone, 746.  
 $\beta$ -(3:4-Methylenedioxybenzoyl)propionic acid, preparation of, 746.  
 $\beta$ -(3:4-Methylenedioxybenzyl)butyrolactone, 351.  
 $\beta$ -(3:4-Methylenedioxybenzyl)butyrolactone- $\alpha$ -carboxylic acid, ethyl ester, 350.  
 3:4-Methylenedioxybenzyl- $\alpha$ -cyanoacetic acid, methyl ester, 729.  
 6:7-Methylenedioxy-3-methyl-3:4-dihydroquinazoline, 4-hydroxy-, 198.  
 6:7-Methylenedioxy-1-(3':4'-methylenedioxyphenyl)-3-hydroxymethyl-3:4-dihydronaphthalene-2-carboxylactone, 747.  
 6:7-Methylenedioxy-1-(3':4'-methylenedioxyphenyl)-hydroxymethylnaphthalenecarboxylic acids, lactones, 746.  
 6:7-Methylenedioxy-1-(3':4'-methylenedioxyphenyl)-naphthalene-2:3-dicarboxylic acid, and its derivatives, 746.  
 6:7-Methylenedioxy-3-methylquinazolinium iodide and picrate, 198.  
 1:8-Methylenedioxy-naphthalenes, *dinitro*-, 559.  
 6:7-Methylenedioxy-4-nitromethyl-3-methyl-3:4-dihydroquinazoline, 199.  
 3:4-Methylenedioxyphthalide, and 6-bromo-, and 6-nitro-, 200.  
 6:7-Methylenedioxy-1- $\alpha$ -picolyl-3:4-dihydroisoquinoline, and its salts, 610.  
 6:7-Methylenedioxy-1- $\alpha$ -picolyl-1:2:3:4-tetrahydroisoquinoline, and its salts, 611.  
 6:7-Methylenedioxy-1- $\alpha$ -pipercolyl-1:2:3:4-tetrahydroisoquinoline, and its salts, 611.  
 6:7-Methylenedioxyquinazoline, 198.  
 6:7-Methylenedioxyisoquinoline picrate, 611.  
 2-(3':4'-Methylenedioxystryryl)-3-benzyl-5:8-dimethylchromone, 428.  
 2-(3':4'-Methylenedioxystryryl)-5:8-dimethylchromone, 427.  
 2-(3':4'-Methylenedioxystryryl)-6:8-dimethylchromone, 216.  
 2-(3':4'-Methylenedioxystryryl)-5:8-dimethyl-3-ethylchromone, 427.  
 2-(3':4'-Methylenedioxystryryl)-6:8-dimethyl-3-ethylchromone, 217.  
 2-(3':4'-Methylenedioxystryryl)-3:5:8-trimethylchromone, 427.  
 2-(3':4'-Methylenedioxystryryl)-3:6:8-trimethylchromone, 216.  
 6:7-Methylenedioxy-1-(3':4':5'-trimethoxyphenyl)-3-hydroxymethyl-3:4-dihydronaphthalene-2-carboxylic acid, lactone, 351.  
 6:7-Methylenedioxy-1-(3':4':5'-trimethoxyphenyl)-3-hydroxymethyl-1:2:3:4-tetrahydronaphthalene-2-carboxylic acid, 1-hydroxy-, lactone, 351.  
 Methylene-*dl*-menthone, hydroxy-, 1599.  
 Methyleneoxyglyoxime, and its nickel compound, 566.  
 Methyleneacetic acid, synthesis of, 362.  
*cis*- $\alpha$ -Methyl- $\alpha'$ -ethylglutarimide, 1446.  
 Methylene-*n*-propylarsine, formation of, and its salts, by micro-organisms, 264.  
 Methylene-*n*-propylhydroxyarsonium picrate, 266.  
 4-Methyl galactose, and its derivatives, true constitution of, 640.  
 6-Methyl galactose, 640.  
 6-Methyl glucosazone, 860.  
 6-Methyl glucose, synthesis of, 859.  
 $\alpha$ -Methylglutaconic acid, dimethyl ester, 486.  
 Methylglyoxalphenylhydrazone- $\omega$ -sulphonic acid, sodium salt, and its halogeno- and nitro-derivatives, 84.  
 9-Methylhexahydrocarbazole, 7-amino-, and its diacetyl derivative, 901.  
 Methylcyclohexanes, 1-hydroxy-1-cyano-, 418.  
*cis*- and *trans*-1-Methylcyclohexane-1-carboxylic-2-acetic acids, 476.  
 Methylcyclohexanecarboxylicacetic acids, synthesis of, 478.  
 1-Methylcyclohexane-4-carboxylic acid, 2-hydroxy-2-cyano-, methyl ester, 1625.  
 Methylcyclohexane-1- $\alpha$ -cyanoacetic acids, 1-cyano-, ethyl esters, 418.  
*cis*- and *trans*-1-Methylcyclohexane-1:2-diacetic acids, 475.  
 1-Methylcyclohexane-1:2-dicarboxylic acid, ethyl ester, 476.  
 1-Methylcyclohexane-1:2-dicarboxylic acid, 2-hydroxy-, 2-acetyl derivative, 482.  
 1-Methylcyclohexane-1:2-dicarboxylic acids, stereoisomeric, synthesis of, 478.  
 4-Methylcyclohexane-1:4-*spiro*-2'-hydroxy-6'-keto-5'-cyano-2-methylpiperidine, 572.  
 1-Methylcyclohexane-3-malonic acid, 2-cyano-, diethyl ester, 485.  
 2-Methylcyclohexanol-2-carboxylic acid, 1-cyano-, ethyl ester, 482.  
 2-Methylcyclohexanol-1:2-dicarboxylic acid, 482.  
 Methylcyclohexanones, condensation of cyanohydrins of, with arylamines, 1159.

- 3-Carboethoxy-1,3-dimethylcyclohexan-2-ol-2-acetic acid**, ethyl ester, 1141.
- 3-Carboethoxy-1,3-dimethylcyclohexan-2-one**, and its semicarbazone, 1141.
- 3-Carboethoxy-1,3-dimethylcyclohexylidene-2-acetic acid**, and its esters and derivatives, 1141.
- 1-Carboethoxy-4-keto-3-(2'-piperidyl)octahydropyridocoline**, 1027.
- 1-Carboethoxy-4-keto-3-(2'-pyridyl)pyridocoline**, and its picrate, 1027.
- $\alpha$ -Carboethoxy- $\alpha$ -methylaconitic acid**, ethyl ester, 1807.
- $\alpha$ -Carboethoxy- $\alpha$ -methyl- $\gamma$ -ethylaconitic acid**, ethyl ester, 1807.
- 3-Carboethoxy-1-methylcyclopentan-2-one-3-acetic acid**, ethyl ester, 1623.
- 3-Carboethoxy-1-methyl-4-isopropylcyclohexan-2-one-1- $\beta$ -propionic acid**, ethyl ester, and its semicarbazone, 1140.
- $\alpha$ -Carboethoxy- $\beta$ -phenyl- $\alpha$ -ethylglutaconic acid**, ethyl ester, 1806.
- $\alpha$ -Carboethoxy- $\beta$ -phenyl- $\alpha$ -methyl- $\gamma$ -ethylglutaconic acid**, ethyl ester, 1806.
- 1-Carboethoxypiperidyl-2-acetic acid**, and its ethyl ester, 1027.
- $\gamma$ -Carboethoxypropylideneacetoacetic acid**, ethyl ester, 754.
- Carbohydrates**, additive compounds of, 1765.
- Carbohydrate group**, rotatory dispersion in, 1403.
- Carbomethoxy-1-methyl- $\Delta^2$ -cyclohexenecarboxylic acids**, 483.
- Carbon**, valency angle of, 1324.
- atoms, saturated, substitution at, 225.
- rings, fused, 470, 476, 478, 611, 616.
- amorphous, chemical nature of graphite and, 456.
- Carbon monoxide**, adsorption of, by diamond and graphite, 1261.
- action of, with alcohols, 358, 362.
- with steam, on olefines, 364.
- disappearance of, in presence of electrically-heated nickel filaments, 1513.
- dioxide**, adsorption of, by diamond and graphite, 1261.
- disulphide**, dipole moment of, in polar solvents, 487.
- o*-Carboxyacetophenone** nitroaryldrazones, 313.
- o*-Carboxybenzaldehyde** phenylhydrazones, 312.
- 2-*o*-Carboxybenzylindan-1-one**, and its deuterium derivatives, 1552.
- rates of bromination and racemisation of, 624.
- 2-Carboxy-3,4-dihydrophenanthrene-1- $\beta$ -propionic acid**, and its methyl ester, 1850.
- 1-Carboxy-3,3-dimethylcyclohexane-1-acetic acid**, and its derivatives, 1162.
- 3-Carboxy-1,3-dimethylcyclohexane-2-acetic acid**, 1142.
- Carboxyl group**, structure of, 1817.
- 1-Carboxymethylcyclohexane-1-acetic acids**, isomeric, and their derivatives, 416.
- N*-Carboxyphenylpropionamides**,  $\alpha$ -hydroxy-, lactones, 310.
- Caryophyllenes**, 741.
- cis*- and *trans*-Caryophyllenic acids**, and their derivatives, 742.
- Catalysis**, energetics of, 635.
- acid, in non-aqueous solvents, 1520, 1792.
- Catalytic hydrogenation**, kinetics of, in liquid systems, 635.
- of organic compounds, apparatus for, 895.
- reactions, acid- and base-catalysed, rates of, in heavy water, 1361.
- Cellobial**, and its hexa-acetyl derivative, rotatory dispersion of, 1404.
- Cellobiose**, potassium hydroxide compound of, 1765.
- Cerebronic acid**, crystallography and constitution of, 716.
- Cevanthridine**, X-ray crystallography of, 414.
- Cevanthrol**, preparation and crystallography of, and its acetate, 414.
- Chalcopyrite**, extraction of indium from, 1290.
- Charcoal**, chemisorption on, 1688.
- active, preparation of, and use as catalyst in chlorination, 338.
- Chelation**, 274, 346.
- Chemistry**, structural, 533.
- Chermes**, white pine, chemistry of, 1034.
- Chloral**, condensation of, with salicylic acid, 554.
- Cholestane**, tetrahydroxy-, and its derivatives, 1437.
- Cholesterol** hydrogen phthalate, oxidation of, with permanganate, 1437.
- $\beta$ -Cholesterol**, 7-hydroxy-, and its derivatives, 1437.
- Chlorine**, photochemical action of, with hydrogen, 241.
- Hydrochloric acid**, addition of, to olefins, 1605.
- Chlorine ions**, induced oxidation of, 207.
- Chlorobisethylene-diaminohydroxoruthenium chloride**, 44.
- Chloroform**, dipole moment of, in polar solvents, 491.
- Chlorosulphinic acid**, alkyl esters, action of, with pyridine in ethereal solution, 688.
- Chlorotetramminoruthenium salts**. See under Ruthenium.
- Chlorotetraethylaminohydroxoruthenium chloride**, 45.
- Chlorotetrapyridinohydroxoruthenium chloride**, 44.
- Choladienic acid**,  $\beta$ -*d*hydroxy-, and its methyl ester, 467.
- Choladienic acids**, isomeric, from apocholic acid and dihydroxycholic acid, 462.
- alloCholanic acid**, 3-chloro-, and its methyl ester, 737.
- Cholesterol** ethers, isomeric, 907.
- iodide, 910.
- Cholic acid**, hydrocarbon from, 54.
- $\beta$ -apoCholic acid**, and its methyl ester, 408.
- Chromeno-(3':4':4:3)-coumarin**, 7-hydroxy-, and its acetyl derivative, 426.
- Chromeno-(3':4':4:3)-coumarins**, 423.
- Chromone group**, syntheses in, 267, 569.
- Chrysin** dimethyl ether, and its 3-benzoyl derivative, 268.
- alloCinnamic acid**, ethyl ester, 405.
- Coagulation**, mechanism of, 1317.
- Cobalt bases** :—
- Cobaltamines**, isomeric, heats of formation and solution of, 1660.
- Cobalt chloride**, absorption spectrum of, in presence of magnesium chloride in aqueous solutions, 1268.
- pyrophosphates, 1423.
- Cobalt organic compounds** :—
- Cobalt nitrosocarbonyl**, parachor of, 1284.
- Compounds**, complex, kinetics of formation of, in solution, 101.
- Congo-red**, adsorption of, at benzene-water and chlorobenzene-water interfaces, 119.
- Conidendrin**, 724.
- Co-ordination**, and residual affinity, 41.
- Copper**, stereochemistry of, 775.
- Copper compounds**, quadricovalent, configuration of, 129.
- Copper pyrophosphates**, 1425.
- Cuprous iodide**, arsine and phosphine derivatives of, 1503.
- Copper organic compounds** :—
- Copper benzylmethylglyoxime dichloride**, 131.
- bismethylethylglyoxime, 132.
- dimethylglyoxime dichloride, 131.
- methylethoxyglyoxime dichloride, 565.
- methylethylglyoxime dichloride, 131.
- methylglyoxime dichloride, 131.
- methylmethoxyglyoxime dichloride, 566.

- Copper ions, anion affinity of, 1121.  
 Corrosion, theories of, 366, 1095.  
   water-line, 366.  
 Coumarin, 5:7-dihydroxy-, 1831.  
 Crotonic acid,  $\alpha$ -chloro-, ethyl ester, reaction of, with dimethylamine, 1169.  
 Crotyl alcohol. See  $\Delta^{\beta}$ -Butenol.  
 Cubebinolide, and dibromo-, and dinitro-, 725.  
   synthesis of derivatives of, 745.  
 Curare alkaloids, 1276.  
 Cyanogen :—  
   Hydrocyanic acid, studies on, 184, 339, 1245, 1495.  
   isocyanic acid, ethyl, naphthyl, and phenyl esters, dipole moments of, 45.  
 Cyclic compounds, oxidation of, by potassium permanganate, 368.  
 Cylindrite, extraction of indium from, 1290.  
 $\alpha$ -Cyperene, 673.  
 $\alpha$ -Cyperone, and its derivatives, 667.  
 $\beta$ -Cyperone, and its derivatives, 674.  
*Cyperus rotundus*,  $\alpha$ -cyperone from oil of, 667.  
 Cytisine, synthesis of local anæsthetics from, 1774.  
 $\beta$ -Cytisinoethyl benzoate, cinnamate, and *p*-nitrobenzoate, and their salts, 1774.  
 $\gamma$ -Cytisinopropyl alcohol, esters of, and their salts, 1775.
- D.
- Decahydrochrysene, 2-hydroxy-, and its phenylurethane, 761.  
 Decahydronaphthalene, action of aluminium chloride on, 616.  
 Decalin. See Decahydronaphthalene.  
 Dehydroanhydripropodophyllin, synthesis of, 348.  
 Dehydronocaryophyllenic acid, synthesis of, 593.  
 Deoxybensoin, condensation of, with aromatic aldehydes and ketones, 806.  
 Deoxysmilagenin, 1403.  
 Deoxyapoxanthoxyletin, and its methyl ether, 632.  
 Derric acid, action of acetic anhydride on, 214.  
 Deuteration, efficiencies of acidic agents for, 1637.  
 Deuterium, electrolytic preparation of, and its separation coefficient, 163.  
   electrolytic separation of, 286.  
   velocity of adsorption of, by platinum, 1542.  
   thermal reaction of, with ammonia, 26.  
   reaction of, with nitric oxide, 378.  
   introduction of, into aliphatic compounds, 1643.  
   into the aromatic nucleus, 1637.  
   into benzene, 915.  
   symmetrically placed, and hydrogen, molecular dissymmetry due to, 808.  
 Deuterium oxide, exchange reactions of, with organic compounds, 1811.  
 Diaceto-1-naphthalide, 2:4-dibromo-8-nitro-, 1340.  
 Diacetone alcohol, alkaline decomposition of, 1363.  
 6:9-Diacetylhexahydrocarbazole, 1298.  
*NN'*-Diacetyl-1:2-naphthylenediamine, 4-bromo- and 4-chloro-3-nitro-, and 4-nitro-, 1153.  
   3-chloro-, and 3-nitro-, 1763.  
*NN'*-Diacetyl-1:4-naphthylenediamine, 2:3-dinitro-, 1152.  
 7:9-Diacetyltetrahydrocarbazole, 40.  
 Diacetyl xylal, rotatory dispersion of, 1404.  
 Dialkoxybenzophenones, 1854.  
 Dialkoxydiphenylsulphones, 1854.  
 Diamond, adsorption by, 1256, 1261.  
*pp'*-Di-*n*-amyloxybenzophenone, 1860.  
 Di-*n*-amyloxydiphenylsulphone, 1860.  
 Dianhydro-hexosazone, and its derivatives, 1773.  
 Di-*p*-anisyl ketone 2:4-dinitrophenylhydrazone, 506.  
*s*-Di-*p*-anisylpinacol, 506.  
 Diaryl  $\alpha$ -diketones, preparation of, 93.  
 Diazonium salts, action of, with acetonesulphonic acid, 83.  
   on trichloro-*a*-nitro- $\beta$ -acetoxyparaffins, 1693.  
 Dibenzenesulphon- $\alpha$ -naphthalide, *di-m*-nitro-, 1846.  
 Dibenzenesulphon-8-nitro- $\alpha$ -naphthalide, *di-m*-nitro-, 1847.  
 Dibenzo- $\alpha$ -naphthalide, 1846.  
 3:6-Dibenzoyl-9-methylcarbazole, 1297.  
 4:6-Dibenzoyloxy- $\omega$ -benzoylacetophenone, 2-hydroxy-, 269.  
 7:9-Dibenzoyltetrahydrocarbazole, 41.  
 Dibenzyl- $\beta$ -chloroethylcarbinol, 401.  
 2:2'-Dibenzylidicyclohexyl, 79.  
 Dibenzylethylcarbinol, 401.  
 Dibenzyl- $\beta$ -piperidinoethylcarbinol, and its derivatives, 401.  
 Dibenzylvinylcarbinol, 401.  
 Diisobutoxydichlorotitanium, 639.  
 Di-*n*-butoxydiphenylsulphone, 1859.  
 Di-*n*-butylthalliumdipropionylmethane, 1682.  
 Di-*n*-butylthalliumpropionylacetone, 1682.  
 Dibutylvinylcarbinol, 402.  
 Di-*d*-camphor-10-sulphonyl-*p*-phenylenediamine, 1221.  
 3:3'-Dicarbomethoxy-*aa*-diphenylethane,  $\beta\beta\beta$ -tri-chloro-4:4'-dihydroxy, and its diacetyl derivative, 554.  
 3:3'-Dicarboxy-*aa*-diphenylethane,  $\beta\beta\beta$ -trichloro-4:4'-dihydroxy-, 555.  
 3:3'-Dicarboxy-*aa*-diphenylethylene,  $\beta\beta$ -dichloro-4:4'-dihydroxy-, and its dimethyl ester, 555.  
 Dielectric polarisation. See under Polarisation.  
 Diethoxydichlorotitanium, 639.  
 1-( $\beta$ -Diethylaminoethyl)aminoacridine, and its salts, 609.  
 5-( $\beta$ -Diethylaminoethylamino)acridine, 1:3-dichloro-, 1549.  
 1-( $\beta$ -Diethylaminoethyl)amino-5:10-dihydroacridine *p*-toluenesulphonamide, 609.  
 5-( $\beta$ -Diethylaminoethylamino)-3-methoxyacridine dihydrobromide, 1548.  
 5-( $\beta$ -Diethylaminoethylamino)-3-methylacridine, 1-bromo-, 1549.  
 5-( $\beta$ -Diethylaminoethylmethylamino)-3-methoxyacridine dihydrobromide, 1548.  
 5-( $\beta$ -Diethylaminoethyl-*n*-propylamino)-3-methoxyacridine dihydrobromide, 1548.  
 $\alpha$ -Diethylaminopentane,  $\delta$ -chloro-, and its derivatives, 609.  
 5-( $\gamma$ -Diethylamino-*n*-propylamino)acridine, 1:3- and 1:4-dichloro-, dihydrobromides, and 1:3:7-trichloro-, 1549.  
 5-( $\gamma$ -Diethylamino-*n*-propylamino)-3-methoxyacridine dihydrobromide, 1548.  
 5-( $\gamma$ -Diethylamino-*n*-propylamino)-3-methylacridine; 1-bromo-, dihydrobromide, and 7-chloro-1-bromo-, 1549.  
 2:2'-Diethylthiocarbocyanine bromide, 5:5'-dibromo-, 1230.  
   iodide, 5:5'-dichloro-, 1229.  
 2:2'-Diethylthiocyanine chloride, 5:5'-dichloro-, 1229.  
   iodide, 5:5'-dibromo-, 1229.  
 2:1'-Diethylthia-2'-cyanine iodide, 5-bromo-, and 5-chloro-, 1229.  
 2:2'-Diethylthia-1'-cyanine iodide, 5-bromo-, and 5-chloro-, 1229.  
 2:2'-Diethylthiadicarbocyanine bromide, 5:5':9-tri-bromo-, iodide, 5:5'-*di*- and 5:5':9-*tri*-chloro-, and *p*-toluenesulphonate, 5:5'-dibromo-, 1230.  
 2:2'-Diethylthiadicarbocyanine iodide, 5:5'-dichloro-, and *p*-toluenesulphonate, 5:5'-dibromo-, 1231.  
 Digitalis glucosides, 354.  
 Digitalonolactone, 445.  
 Digitalose, 445.

- 4:4'-Dicyclohexyldiphenyl, 1594.  
 2:7-Dihexylfluorescein, and 4:5-dibromo-, 3':6'-dichloro-, and 3':6'-dichloro-4:5-dibromo-, 1843.  
 4:4'-Dihydrazinodiphenylmethane, and 3:3'-dibromo-, and its dihydrochloride, 316.  
 Dihydro- $\alpha$ -campholytic acid, and its *p*-phenylphenacyl ester, 736.  
 Dihydro- $\alpha$ -cyperol, and its 3:5-dinitrobenzoate, 672.  
 Dihydro- $\alpha$ -cyperyl 3:5-dinitrobenzoate, oxidation of, 673.  
 Dihydroemicymarin, 445.  
 Dihydroergosterol 3:5-dinitrobenzoate, 469.  
 Dihydroergosterol, oxidation of, 462.  
 $\alpha$ -Dihydrofucosterol, structure of, 738.  
 $\alpha$ -Dihydrofucosteryl oxide, and its acetate, 739.  
 Dihydroisolauroic acid, *p*-phenylphenacyl ester, 736.  
 3:4-Dihydrophenanthrene-1:2-dicarboxylic anhydride, 7-hydroxy-, 53.  
 $\alpha$ - and  $\beta$ -Dihydropicrotoxins, 293.  
 Dihydroresorcinol  $\beta$ -*m*-methoxyphenylethyl ether, 51.  
 Dihydrosebacic acid, 745.  
 Dihydroxanthyletin, 631.  
 Dihydroxanthyletin, 1829.  
 2:5-Diketo-3-(2'-amino-4'-tolyl)isoindolinopyrazolidocoline, and its diacetyl derivative, 1105.  
 2:5-Diketo-3-(2'-nitro-4'-tolyl)isoindolinopyrazolidocoline, 1103.  
 1:4-Diketo-3-(2'-nitro-4'-tolyl)tetrahydrophthalazine, 1107.  
 6:7-Dimethoxy-3-acetoxy- $\Delta^3$ -chromene-4-carboxylic acid, ethyl ester, 213.  
 2:5-Dimethoxy-6-allylacetophenone, 279.  
 2:5-Dimethoxy-6-allylphenyl styryl ketone, 280.  
 Dimethoxyallylstyryl methyl ketones, 278.  
 6':7'-Dimethoxy-8-isoamylchromeno-(3':4':4:3)-coumarin, 7-hydroxy-, and its acetyl derivative, 424.  
 2:3-Dimethoxybenzhydrol, 347.  
 2:3-Dimethoxybenzophenone, and its 2:4-dinitrophenylhydrazone, 347.  
 4:4'-Dimethoxybenzophenone, 3-chloro-, 1860.  
 $\beta$ -(3:4-Dimethoxybenzoyl)- $\alpha$ -(2'-bromo-4':5'-dimethoxybenzylidene)propionic acid, and its derivatives, 729.  
 $\alpha$ -(3:4-Dimethoxybenzoyl)- $\beta$ -(3':4'-dimethoxybenzyl)-butyrolactone, 727.  
 $\beta$ -(3:4-Dimethoxybenzoyl)- $\alpha$ -(3':4'-dimethoxybenzyl)-propionic acid, 729.  
 $\alpha$ -3:4-Dimethoxybenzoyl- $\beta$ -3-methoxy-4-ethoxybenzylbutyrolactone, 1001.  
 $\beta$ -3:4-Dimethoxybenzoyl- $\alpha$ -3-methoxy-4-ethoxybenzylidene- $\beta$ -methylenepropionic acid, 1002.  
 $\beta$ -3:4-Dimethoxybenzoyl- $\alpha$ -3-methoxy-4-ethoxybenzylidenepropionic acid, and its  $\gamma$ -lactone, 1002.  
 3:4-Dimethoxybenzyl- $\alpha$ -cyanoacetic acid, methyl ester, 728.  
 $\alpha$ -(3:4-Dimethoxybenzyl)- $\gamma$ -(3':4'-dimethoxyphenyl)-butyrolactone, 729.  
 3:4-Dimethoxybenzyl-3-methoxy-4-ethoxybenzylbutyrolactones, 1001.  
 3:4'-Dimethoxychalkone, 257.  
 Dimethoxydichlorotitanium, 639.  
 6:7-Dimethoxychroman-4-carboxylic acid. See Netoric acid.  
 5:7- and 6:7-Dimethoxychroman-4-one, 1832.  
 6:7-Dimethoxy- $\Delta^3$ -chromene-4-carboxylic acid. See Toxicaric acid.  
 6:7-Dimethoxy- $\Delta^3$ -chromene-4-carboxylic acid, 3-hydroxy-, ethyl ester, 213.  
 6':7'-Dimethoxychromeno-(3':4':4:3)-coumarin, 7-mono- and 7:8-di-hydroxy-, and their acetyl derivatives, 424.  
 5:7-Dimethoxycoumarin, 1832.  
 5:7-Dimethoxycoumarin-3-carboxylic acid, 1832.  
 6:7-Dimethoxy-1-(3':4'-dimethoxyphenyl)-3-hydroxymethyl-3:4-dihydronaphthalene-2-carboxylactone, 728.  
 6:7-Dimethoxy-1-(3':4'-dimethoxyphenyl)-3-hydroxymethyl-1:2:3:4-tetrahydronaphthalene-2-carboxylactone, 1-hydroxy-, 728.  
 4:6-Dimethoxy-2:5-dimethylcoumarone, 1837.  
 4:6-Dimethoxy-2:5-dimethylcoumarone-3-acetic acid, 1837.  
 4:6-Dimethoxy-3:5-dimethylcoumarone-2-acetic acid, synthesis of, 1834.  
 8:4'-Dimethoxyflavylium ferrichloride, 257.  
 6:7-Dimethoxy-3-furfurylidenechroman-4-one, 1834.  
 6:7-Dimethoxy-1-3'-methoxy-4'-ethoxyphenyl-3-hydroxymethyl-3:4-dihydronaphthalene-2-carboxylactone, 1002.  
 6:7-Dimethoxy-1-3'-methoxy-4'-ethoxyphenyl-2-hydroxymethylnaphthalene-3-carboxylactone, 1002.  
 6:7-Dimethoxy-1-3'-methoxy-4'-ethoxyphenyl-3-hydroxymethylnaphthalene-2-carboxylactone, 1002.  
 8:4'-Dimethoxy-4-(*p*-methoxyphenacyl)flavylium ferrichloride, 257.  
 8:4'-Dimethoxy-4-(*p*-methoxyphenacylidene)flavene, 257.  
 4:6-Dimethoxy-2-methyl-3-coumarone, and its 2:4-dinitrophenylhydrazone, 1836.  
 5:7-Dimethoxy-8-methylcoumarin, 633.  
 4:6-Dimethoxy-2-methylcoumarone-3-acetic acid, and its ethyl ester, 1837.  
 $\alpha$ -3:5-Dimethoxy-4-methylphenoxypropionic acid, 1837.  
 1:4-Dimethoxynaphthalene, 2:3-dinitro-, 1152.  
 1:8-Dimethoxynaphthalene, 2:4- and 4:5-dinitro-, 558.  
 $\alpha$ , $\delta$ -Di-(4-methoxy-1-naphthyl)butane, 189.  
 $\alpha$ , $\delta$ -Di-(5-methoxy-1-naphthyl)butane, 191.  
 $\alpha$ -3:5-Dimethoxyphenoxypropionic acid, and its ethyl ester, 1836.  
 $\beta$ -3:4-Dimethoxyphenoxypropionic acid, 1833.  
 $\beta$ -3:5-Dimethoxyphenoxypropionic acid, 1834.  
 2:4-Dimethoxy- $\omega$ -phenylacetylacetophenone, 298.  
 6:7-Dimethoxy-1-phenyl-3:4-dihydronaphthalene, 587.  
 2:4-Dimethoxy- $\alpha$ -phenyl- $\beta$ -ethylcinnamic acid, 298.  
 2:4-Dimethoxy- $\alpha$ -phenyl- $\beta$ -methylcinnamic acid, 297.  
 4:6-Dimethoxy-3-phenyl-2-methylcoumarone, 1837.  
 6:7-Dimethoxy-1-phenylnaphthalene, 588.  
 6:7-Dimethoxy-1-phenylnaphthalene-3-carboxylic acid, 588.  
 Dimethoxy-2:2:3:3-tetramethylcyclopentanediones, and their derivatives, 273.  
 6:7-Dimethoxy-3-veratrylidenechroman-4-one, 1833.  
 3:6-Dimethyl acetone glucose, 1554.  
 $\beta\beta$ -Dimethyladipic acid, *aa'*-dibromo-, ethyl ester, 595.  
 $\alpha\gamma$ -Dimethylallyl alcohols, optically active isomeric, and their esters, 576.  
 Dimethylamine, reaction of, with ethyl  $\alpha$ -chlorocrotonate, 1169.  
 4-Dimethylaminoaceto-1-naphthalide, nitration of, 1500.  
 $p$ -Dimethylaminobenzylidene-*dl*-piperitone, 1599.  
 $aa$ -Dimethyl- $\alpha'$ -*n*-amylsuccinic acid, 1447.  
 $\alpha'$ -Dimethyl- $\alpha$ -*n*-amylsuccinic acid,  $\alpha$ -cyano-, ethyl ester, 1447.  
 $aa$ -Dimethyl- $\alpha'$ -*n*-amylsuccinimide, 1448.  
 Dimethylaniline, mesomeric effect of the dimethylamino-group in, 599.  
 Dimethylaniline, 2-bromo-4-nitro-, and its hydrobromide perbromide, 1749.  
 $p$ -nitro-, action of sodium nitrite on, in hydrobromic acid, 1749.  
 Dimethylbenzils, 94.  
 3:3-Dimethylcyclobutane-1:2-dicarboxylic acid, 595.  
 3:3-Dimethyl- $\Delta^1$ -cyclobutylene-1:2-dicarboxylic acid, 595.  
 $aa$ -Dimethyl- $\alpha'$ -*n*-butylsuccinic acid, 1447.  
 3:5-Dimethyl-*n*-butyrophene, 2-hydroxy-, 216.

- 2:5-Dimethyl-1:2-dihydrobenzthiazole, 1-thio-, 1673.  
*O*-Dimethyldihydroprocrotic acid, and its methylester, 294.
- 3:4-Dimethyl-3:4-dihydroquinazoline, 4-nitro-, 197.
- 2:2'-Dimethyldiphenyl, 4-hydroxy-, 322.
- Dimethyldiphenyl sulphides, chloronitrohydroxy-, and nitrohydroxy-, and their derivatives, 328.
- 2':6'-Dimethyldiphenylsulphone, 2-nitro-4-hydroxy-, 328.
- 3:3'-Dimethyldiphenylsulphone, 4:4'-dichloro-, 707.
- 5:5'-Dimethylidi(1:2)pyrrolidine, synthesis of, 606. and its derivatives, 607.
- 5:5'-Dimethylidi(1:2)pyrrolidine, 4-hydroxy-, and its picronolate, 607.
- 6:8-Dimethyl-2-ethylchromone, 217.
- 5:8-Dimethylflavone, 427.
- Dimethyl *d*-gluco-ascorbic acid, crystal structure of, 775.
- 3:6-Dimethyl glucose, 1553.
- 3:3-Dimethylcyclohexane, 1-hydroxy-1-cyano-, 1163.
- 3:3-Dimethylcyclohexane-1- $\alpha$ -cyanoacetic acid, 1-cyano-, ethyl ester, 1163.
- Dimethylhydrindones, and their derivatives, 58.
- 3:7-Dimethyl-2- $\beta$ -hydroxyethylthiochromine, 9-chloro-, 1604.
- aa*-Dimethyl- $\beta$ -isovalic acid, ethyl ester, 1852.
- 2:5-Dimethyl-1- $\beta$ -4'-methoxy-1'-naphthylethylcyclopentanol, 190.
- Dimethylnaphthaldehydes, and their derivatives, 343.
- Dimethyl- $\alpha$ -naphthylamine, 4-amino-, 4-chloro-, chloronitro-, and their derivatives, 1501.
- Dimethyl- $\beta$ -naphthylamine, 1-nitro-, 1503.
- 2:5-Dimethyl-0:3:3-bicyclooctane, 621.
- 2:5-Dimethyl- $\Delta^1$ -0:3:3-bicyclooctene, 621.
- $\beta$ '-Dimethyl- $\epsilon$ -octolactone, dipole moment of, 1389.
- $\beta\delta$ -Dimethylpentane- $\alpha\beta\delta$ -tricarboxylic acid, and its derivatives, 1853.
- $\beta\delta$ -Dimethyl- $\Delta^a$ -pentene- $\alpha\delta$ -dicarboxylic acid,  $\alpha$ -cyano-, ethyl ester, 1853.
- Dimethylpentenylcarbinols, and their phenylurethanes, 473.
- 2:4-Dimethyl-5- $\beta$ -phenoxyethylthiazole, and its picrate, 1556.
- 3:5-Dimethylpropiofenone, 2-hydroxy-, 216.
- Dimethyl-*n*-propylarsine, formation of, and its salts, by micro-organisms, 264.
- 1:10-Dimethyl-7-isopropyldecal-2-one, synthesis of, and its derivatives, 1137, 1140.
- 1:2-Dimethyl-7-isopropyl-naphthalene, derivatives of, 673.
- Dimethyl-7-isopropyl-naphthalenes, and their derivatives, 674.
- 2:5-Dimethyl-3-isopropyl-1:2:3:4-tetral-1-one, and its phenylsemicarbazone, 675.
- 2:5-Dimethylpyrimidine, 4:5-dichloro-, 4-hydroxy-5-amino-, and its derivatives, and 4:5-dihydroxy-, 1603.
- 5:6-Dimethylpyrimidine, 2:4:5-trichloro-, 1604.
- 5:10-Dimethyl-3:4:10:11-tetrahydro-2':1'-naphtha-1:2-fluorene, 8-bromo-, 60.
- Dimethyl-3:4:10:11-tetrahydro-2':2'-naphtha-1:2-fluorenes, and their picrates, 58.
- 3:7-Dimethylthiochromine, 9-chloro-, 1604.
- $\alpha\delta$ -Di-1-naphthyl- $\beta$ - $\gamma$ -dimethylbutane, 61.
- Dinitritobis(butylphosphine)- $\mu$ -dinitritodipalladium, 885.
- Dinitritobis(butylphosphine)palladium, 886.
- Dinitritobis(tributylarsine)palladium, 886.
- Dinitritodipyridylpalladium, 886.
- Dinitrito-*p*-toluidinobutylphosphinepalladium, 888.
- Diphenyl, and 4:4'-dichloro-, dipole moments of, in polar solvents, 487.
- Diphenyl series, inductive effects in, 1130.
- $\gamma\gamma$ -Diphenylallyl chloride, 402.
- Diphenylamine derivatives, action of phosphorus pentachloride on, 1163.
- Diphenylamine, 3:2'-diamino-, and its dihydrochloride, 1616.
- 3:3'-diamino-, and its 3:3'-diacetyl derivative, and 3:3'-dinitro-, 90.
- Diphenylamine-2-carboxylic acid, dinitro- derivatives, and 5-nitro-6'-amino-, hydrochloride, 1615.
- 5:5'-dinitro-, and its silver salt, 90.
- Diphenylamine-2-carboxylic acid, 2:5-dichloro-, chloride, 1165.
- Diphenylamine-2-carboxylic acids, trichloro-, and their derivatives, 1164.
- Diphenylbenzamidine, *o*'- and *m*-chloro-, and their hydrochlorides, 430.
- ay*-Diphenyl-*ay*-di-1-naphthylallene, and its optically active forms, 994.
- ay*-Diphenyl-*ay*-di-1-naphthylallyl alcohol, 994.
- ay*-Diphenyl-*ay*-di-1-naphthyl- $\Delta^a$ -propylene, 997.
- s*-Diphenyldi(nitrophenyliminobenzyl)hydrazines, *s*-dinitro-, 796.
- s*-Diphenyldi(phenyliminobenzyl)hydrazine, 796.
- Diphenylene dioxide, dinitro-, 1244.
- Diphenylene sulphide, 3-amino-, 3-bromo-, 3-hydroxy-, and 3-nitro-, 1436.
- Diphenylene oxide-arsonic acids, and their salts and hydrates, 1237.
- Diphenylenesulphone, 2:7-diamino-, -dibromo- and 3-mono- and 2:7-di-nitro-, 1437.
- Diphenylmethane, 3:3-dibromo-4:4'-diamino-, and its derivatives, 315.
- 2:4:6:2':4'-pentanitro-, 1479.
- Diphenylmethanes, nitro-, reactivity of methylene group in, 1478.
- 1:3-Diphenyl-1- $\alpha$ -naphthyl-4:5-benzindene, 996.
- aa*-Diphenyl- $\beta$ -trinitrophenylhydrazyl, paramagnetism of, 441.
- Diphenylsulphones, chloronitro-, nitroamino-, and nitrohydroxy-, and their derivatives, 220.
- 2:4-dinitro-, action of sulphinates on, 218.
- 2:5-Diphenylsulphonylbenzene, 1-nitro-, 219.
- Diphenyl-2-acetic acid, ethyl ester, 323.
- Dipole moments and molecular structure, 402. and fixation of aromatic double links, 1532. solvent effect in measurements of, 491. of acid halides, 158. and structure of organic compounds, 393. of polynitro-compounds, 863. electric, of carboxylic esters and of lactones, 1383.
- pp'*-Dipropoxybenzophenones, 1860.
- Diisopropoxydichlorotitanium, 639.
- 4:4'-Dipropoxydiphenylsulphones, 1859.
- 2:2'-Diisopropylidiphenyl, 2:2'-di- $\alpha$ -hydroxy-, 1116.
- Di-*n*-propyl ketone, ultra-violet irradiation of, 253.
- Diisopropyl ketone, free propyl radical from, 1771.
- Di-*n*-propylthalliumpropionylacetone, 1682.
- Dipyridylpalladium, dichloro-, 884.
- aa'*-Dipyridyltri-*n*-butylarsinecopper, iodo-, 1509.
- aa'*-Dipyridyltri-*n*-butylphosphinecopper, iodo-, 1508.
- $\alpha\delta$ -Di-(2-quinolyl)butane, 183.
- Dispersion, rotatory, 1156. of carbohydrate group, 1403.
- Dissociation constants, 1713. and constitution of monocarboxylic acids, 644. of organic acids, 1756. of weak acids in heavy water, 1361.
- Distyreneplatinous chloride, 1048.
- Dithiocyanatobis(butylarsine)- $\mu$ -dithiocyanatodipalladium, 886.
- Dithiocyanatobis(butylarsine)palladium, 886.
- Dithiocyanatobis(butylphosphine)- $\mu$ -dithiocyanatodipalladium, 887.
- Dithiocyanatobis(butylphosphine)palladium, 887.

**Dithiocyanatobis(propylarsine)- $\mu$ -dithiocyanatodipalladium**, 887.  
**Dithiosulphindene**, derivatives of, 1146.  
**Di-*p*-toluenesulphonylphenylhydrazine**, 1243.  
**2:5-Di-*p*-tolylsulphonylbenzene**, 1-nitro-, 220.  
**Dodecahydrochrysenes**, 2-hydroxy-, 761.  
**2-*n*-Dodecylanthraquinone**, 1-amino-, 1842.  
*Drosera Whittakeri*, colouring matters of, 1457.  
**Droserone**, structure of, and its reduction potential, 1457.  
**Dyes**, adsorption of, at air-water and paraffin-water interfaces, 1306.

## E.

**Eicosanoic acid**, 11:12-dihydroxy-, 1754.  
**Electrolytic conductivity** of electrolytes in anhydrous hydrogen cyanide, 1245.  
 dissociation, 847, 1121.  
 oxidation, 820, 1453.  
 reduction of organic compounds, 202, 574, 810.  
**Emicymarin**, and its diacetyl derivative, 444.  
*allo-* and *iso-*Emicymarins, 446.  
**Enantiomers**, velocities of reaction of, with a common optically active reagent, 1219.  
**Energy**, bond, and atomic heats of formation, 1126.  
**Epifucostanol**, and its acetate, 741.  
**4- $\beta$ -Epoxypropoxyacetophenone**, 2-hydroxy-, and its acetyl derivative, 591.  
**Equilibrium constants** in terms of activities, 1303.  
*iso*Ergine, and its hydrochloride, 1440.  
**Ergometrinine**, and its salts, 1166.  
**Ergot alkaloids**, 1166, 1440.  
*Eriosoma lanigerum*. See Aphis, woolly.  
**Esters**, kinetics of acid and alkaline hydrolysis of, 1357.  
 action of amines on, 797.  
 action of ammonia on, 355.  
 acetylenic, Michael reaction with, 1804.  
 carboxylic, electric dipole moments and wave-mechanical resonance of, 1383.  
 hydrolysis of, 222.  
 of monobasic fatty acids, heats of crystallisation of, 1372.  
 identification of, 398.  
**Ethane**, nitro-, photochemical decomposition of, 1580.  
*p*-Ethoxy-*p*'-*n*-amyloxybenzophenone, 1860.  
**4-Ethoxybenzophenones**, *mono-* and *di-*-chloro-, 1861.  
*p*-Ethoxy-*p*'-*n*-butoxybenzophenone, 1860.  
**4-Ethoxydiphenylsulphone**, 3-nitro-, 220.  
**2-Ethoxy- $\beta$ -naphthathiazole**, 1670.  
 $\gamma$ -*m*-Ethoxyphenylbutyric acid, 757.  
 $\beta$ -*m*-Ethoxyphenylpropionic acid, ethyl ester, 756.  
 $\gamma$ -*m*-Ethoxyphenylpropyl alcohol, and its derivatives, 756.  
**6-Ethoxy- $\alpha$ -tetralone**, 756.  
*l*- $\alpha$ -Ethoxy-*N*-*p*-toluenesulphonylpropionamide, 308.  
**Ethyl ether**, surface tension of mixtures of, with sulphuric acid, 684.  
 influence of hydrogen on decomposition of, 818.  
**Ethyl iodide**, neutron bombardment of, 387.  
 $\alpha$ -Ethylacetosacetic acid,  $\alpha$ -chloro- $\alpha$ -2-hydroxy-, ethyl ester, 2-acetyl derivative, 1556.  
 $\beta$ -Ethylamino-*n*-pentane,  $\gamma\gamma\delta$ -trichloro- $\alpha$ -nitro-, and its hydrochloride and phenylcarbamyl derivative, 1531.  
 $\beta$ -Ethylaminopropane,  $\gamma\gamma\gamma$ -trichloro- $\alpha$ -nitro-, and its hydrochloride, 1530.  
 $\alpha$ -Ethylbenzoic acid, 2-hydroxy-5- $\beta\beta\beta$ -trichloro- $\alpha$ -hydroxy-, and its derivatives, 554.  
**(2-Ethyl-1-benzthiazolo)(1'-methoxy-3'-[2'':6''-di-chloro-4''-nitrophenyl]-3':4'-dihydro-4'-phthalazino)-carbocyanine**, 5-chloro-, iodide, 1711.

**9-Ethylcarbazole-3:6-diphthaloylic acid**, ethyl ester, 1297.  
*N*-Ethylcystine, *N*- $\beta$ -hydroxy-, 1774.  
**Ethylidibutylcarbinol**,  $\beta$ -chloro-, 402.  
**Ethylene-diaminocyclodecamethylenegold** bromide, 325.  
**Ethylene-diaminocyclopentamethylenegold** bromide, 326.  
**Ethylenic compounds**, configuration of, from dipole moments, 402.  
*O*-Ethyleugenol oxide, 1000.  
**6-Ethylhexahydrocarbazole**, and 9-*p*-nitro-, 1298.  
**7-Ethylhexahydrocarbazole**, 41.  
**Ethyl *d*-neomenthylglycine**, 1225.  
**Ethyl  $\gamma$ -*m*-methoxyphenylpropyl ketone**,  $\beta$ -chloro-, 749.  
**3-Ethyl- $\alpha$ -naphthaquinoline**, 1367.  
**1-Ethyl-7-*iso*propyl-naphthalene**, and its derivatives, 676.  
**1-Ethylpyridinium salts**, 691.  
**4-Ethylpyrimidine**, 2:6-diamino-, 2-amino-6-hydroxy-, and 6-chloro-2-amino-, 1558.  
**3-(4'-Ethylpyrimidyl-5')-4-methyl-5- $\beta$ -hydroxyethylthiazolium chloride hydrochloride**, 3-6'-amino-, 1560.  
**3-(4'-Ethylpyrimidyl-5')-4-methylthiazolium chloride hydrochloride**, 3-6'-amino-, 1561.  
**4-Ethylresorcinol diacetate** and diallyl ether, 280.  
**Ethylthiobis(butylphosphine)- $\mu$ -dichlorodipalladium**, chloro-, 889.

## F.

*iso*Fenchocamphononic acid, synthesis of, 1852.  
**Films**, adsorbed, polymolecular, 1467, 1799.  
 surface, and structure of resinols and allied substances, 1585.  
**Flavone**, 4':5-dihydroxy-, and its diacetyl derivative, 1714.  
**Fluids**, adsorption at interface between, 1306.  
**Fluoranthene**, synthesis of, 1434.  
**Fluorene-2-aldehyde**, and its derivatives, 345.  
**Fluorescein dyes**, effect of alkyl groups on properties of, 1838.  
**Fluorilicates**, decomposition of, in aqueous and aqueous salt solutions, 1334.  
**Formaldehyde**, slow combustion of, 649.  
 photochemical oxidation of, 1036.  
 photolysis of, at high temperatures, 890.  
**Formanilide**, *N*-iodo-, rearrangement of, in anisole solution, 1520.  
**Formate ions**, exchange reaction of deuterium oxide with, 1811.  
**Formazyl**, *pp'*-dichloronitro-, 1694.  
**6-Formylcoumarin**, 7-hydroxy-, and its phenylhydrazone, 1830.  
**Formylmethylmalonic acid**, ethyl ester, semicarbazone, 1809.  
**5-Formylphenthiazine**, 2:4-dinitro-, 1609.  
**Friedel-Crafts reaction** in the carbazole series, 1295.  
**Fucostanedicarboxylic acid**, and its dimethyl ester, 741.  
 $\alpha$ -Fucostanedione, 740.  
 $\alpha$ -Fucostanedionol, 740.  
 $\alpha$ -Fucostanetriol, 740.  
**Fucostanol**, and its derivatives, 740.  
 identity of, with ostreastanol, sitostanol, and stigmastanol, 738.  
 $\alpha$ -Fucostenedione, 740.  
**Fucostenone**, and its semicarbazone, 740.  
**Furfurylidene-*dl*-piperitone**, 1599.  
**Furfurylidenetetralone**, condensation of, with ethyl acetoacetate, 752.

**2-Furfurylidene- $\alpha$ -tetralone**, 754.  
 **$\alpha$ -Furylmethylcarbinol**, resolution of, and its esters, 621.

## G.

***d*-Galacto-ascorbic acid hydrate**, crystal structure of, 774.  
**Galactose**, potassium hydroxide compound of, 1765.  
**Galiosin**, 1714.  
**Genkwanin**, synthesis of, and its derivatives, 569.  
**Glucal series**, rotatory dispersion in, 1403.  
**Glucose**, heats of activation in mutarotation of, 1824.  
**Glucosides of the glyoxaline series**, 505.  
***N*-Glucosidoglyoxaline**, 506.  
**Glycerides**, X-ray and thermal examination of, 1628.  
 **$\alpha$ -Glycerides**, X-ray and thermal examination of, 1628.  
**Glycerol  $\alpha\gamma$ -bis-(3-hydroxy-4-acetylphenyl) ether**, and its derivatives, 590.  
**Glyoxal 2:4-dinitrophenylhydrazone**, 824.  
**Glyoxaline**, silver derivative, 505.  
**Gold**, trivalent, stereochemistry of quadricovalent compounds of, 1635.  
**Gold organic compounds**, heterocyclic, 324.  
**Graphite**, formation of, 456.  
 adsorption by, 1256, 1261.  
**Grignard reaction with ethyl  $\beta$ -chloropropionate**, 401.

## H.

**Halides**, organic, irradiation of, 391.  
**Halogens**, polar effect of, in substitution, A., 1448.  
**Halogenation**, alkaline, 168.  
***N*-Halogenoacylanilides**, rearrangements of, 1154.  
**Halogeno-aldehydes**, condensation of, with nitro-paraffins, 1294.  
**Hantzsch Memorial Lecture**, 1051.  
**Heat of formation**, atomic, and bond energy, 1126.  
**Heptadecoin**, 1634.  
***p*-*n*-Heptoxybenzophenone**, 1861.  
**2-*n*-Heptylanthraquinone**, and 1-amino-, and 1-nitro-, 1841.  
**2-(4'-Heptylbenzoyl)benzoic acid**, 1841.  
**2-(4'-Heptylbenzyl)benzoic acid**, 1841.  
**Heterocyclic compounds**, configuration of, 730.  
 dynamic isomerism in, 1143.  
 unsaturation and tautomerism of, 1668, 1672.  
**2:2:4:4:5:5-Hexacarboxycyclopentane-1-malonic acid**, esters, 152.  
**Hexadeuterobenzene**, physical properties of, 915.  
 infra-red and Raman spectra of, 966.  
 resonance emission spectrum of, 955.  
 liquid, Raman spectrum of, 925.  
 liquid and vapour, infra-red absorption spectra of, 931.  
 vapour, fluorescence spectrum of, 941, 1210.  
 vibration frequency of, 971.  
**4 $\alpha$ -Hexadiene- $\alpha\alpha\gamma\gamma\delta\delta\zeta\zeta$ -octacarboxylic acid**, esters, properties of, 142.  
***cis*- and *trans*-Hexahydroanthrones**, and their oximes, 79.  
**1:2:9:10:11:12-Hexahydro-3:4-benzphenanthrene**, 598.  
**Hexahydrocarbazole**, 5- and 7-amino-, derivatives of, 900.  
**Hexahydrofluorene**, 71.  
**Hexahydrofluorenone**, and its derivatives, 71.  
**Hexahydrocyclopentanophenanthrene**, 764.  
**Hexahydro-1:2-cyclopentanophenanthrene**, 3-hydroxy-, and its phenylurethane, 764.  
**Hexahydrophenanthrene**, 77.  
***n*-Hexane**, action of nitrosyl chloride on, in light, 1005.  
***n*-Hexane,  $\delta\delta\epsilon$ -trichloro- $\beta$ -nitro- $\gamma$ -hydroxy-**, 1294.  
***cyclo*Hexane series**, 1159, 1162.

**Hexane- $\alpha\beta\epsilon$ -tricarboxylic acid**, triethyl ester, 1624.  
***cyclo*Hexanone-2-carboxylic acid**, ethyl ester, reactions of, with unsaturated methyl ketones, 1626.  
**"Hexasulphamide,"** formation and constitution of, 1645.  
***n*-Hexophenone 2:4-dinitrophenylhydrazone**, 788.  
***cyclo*Hexyl nitrite**, and 2-chloro-, 285.  
**1-*cyclo*Hexyl-3:4-dihydronaphthalene**, 1432.  
**4-*cyclo*Hexyldiphenyl**, and its derivatives, 1593.  
**4-*cyclo*Hexyldiphenyl**, 4'-bromo-, and 4'-bromo-4-tribromo-, 1780.  
**4-*cyclo*Hexyldiphenyl-4'-carboxylic acid**, 1594.  
***cyclo*Hexylnaphthalenes**, and their derivatives, 1431.  
**5-*cyclo*Hexyl-1:2:3:4-tetrahydronaphthalene**, 1433.  
 **$\omega$ -*cyclo*Hexyl-*o*-toluic acid**, 79.  
**Hinokinin**. See Cubebinolide.  
**Höchst yellow U**, structure of, and its derivatives, 1474.  
**Homocaryophyllenic acid**, and its dianilide, 742.  
**Homocuminyl alcohol**, and its derivatives, 674.  
**Homocuminylmalonic acid**, ethyl ester, 676.  
**Homocuminylmethylmalonic acid**, ethyl ester, 674.  
**Hormones**, oestrogenic, synthesis of compounds related to, 50, 52, 54.  
**Hydration**, entropy of, 1171.  
**Hydrindene**, 5:6-*di*bromo-, 1537.  
**Hydrindenes**, bromo-, dipole moments and structure of, 1532.  
**Hydriodic acid**. See under Iodine.  
**Hydrobromic acid**. See under Bromine.  
**Hydrocarbons**, aromatic, formation of complexes of, with polynitro-compounds, 1463.  
 aromatic polycyclic, 596.  
 cyclic, preparation of, from unsaturated tertiary alcohols, 470.  
 paraffin, hydrogen exchange of, with sulphuric acid, 1643.  
**Hydrochloric acid**. See under Chlorine.  
**Hydrochrysene**, derivatives of, 759.  
**Hydrocyanic acid**. See under Cyanogen.  
**Hydrogen isotopes**, prototropy in relation to exchange of, 1328, 1550.  
 anion affinity of, 1121.  
 adsorption of, by diamond and graphite, 1256.  
 velocity of adsorption of, by platinum, 1542.  
 influence of, on unimolecular short-chain reactions, 818.  
 photochemical action of, with chlorine, 241.  
 reaction of, with nitric oxide, 378.  
 velocity of reaction of, with sulphur, 454.  
 symmetrically placed, and deuterium, molecular dissymmetry due to, 808.  
**Hydrogen peroxide**, catalytic decomposition of, with charcoal, 1688.  
**Hydrocyclopentanophenanthrene**, derivatives of, 763.  
**Hydroxides**, electrometric studies of precipitation of, 96.  
**Hydroxy-carbonyl compounds**, 215, 426, 1831.  
***o*-Hydroxy-carbonyl compounds**, stabilisation of Kekulé forms in, 274.  
**Hypoxanthine**, dissociation constant of, 1713.

## I.

**Imidochlorides**, 428, 431.  
***d*-Imino-galacto-ascorbic acid**, crystal structure of, 774.  
**1-Imino-2-methylbenzthiazoline**, reactivity of imino-group in, 507.  
**Indigotin**, products of benzylation of, 1474.  
**Indium**, extraction of, from minerals and tin, 1290.  
 determination of, spectrographically, in minerals, 1286.

**Indium minerals**, 1286, 1290.  
**Indole**, dipole moment of, 47.  
**Indole group**, constitution of, 899.  
*iso***Indolinone-3-acetic acid**, and its amide, 1104.  
**Inosine**, dissociation constant of, 1713.  
**Insects**, chemistry of, 1034, 1241.  
**Iodine monochloride**, dipole moment of, in solution, 847.  
**Iodidic acid**, addition of, to olefins, 1605.  
**Iodobisethylenediaminohydroxoruthenium iodide**, 44.  
**Iodoform**, additive compound of, with quinoline, 1577.  
**Iodotetramminoruthenium salts**. See under Ruthenium.  
**Ionisation constants**, relation of, to velocity of reaction, 436.  
of dibasic acids, effect of temperature on, 133.  
**Iron organic compounds** :—  
**Iron nitrosocarbonyl and pentacarbonyl**, parachors of, 1284.  
**Isatin**, dipole moment of, 47.  
**Isomerides**, optical, m.-p. curves of, 718.  
**Isomerism**, dynamic, in heterocyclic compounds, 1143.

## K.

**$\beta$ -Keto- $\alpha$ -acetyladipic acid**, esters, 1849.  
**Keto-acid**,  $C_{13}H_{20}O_3$ , and its semicarbazone, from ozonolysis of calciferol, 907.  
 **$\beta$ -Keto adipic acid**, methyl ethyl and methyl esters, 1850.  
**2-Ketodecahydrochrysenes**, 760.  
**3'-Keto-3:4-dihydro-1:2-cyclopentenophenanthrene**, synthesis of, 1848.  
**4-Keto-5:5'-dimethylidi(1:2)pyrrolidine**, and its derivatives, 607.  
**2-Ketododecahydrochrysene**, and its oxime, 762.  
**4-Keto-1-ethoxy-3-(2'-nitro-4'-tolyl)-3:4-dihydrophthalazine**, 1108.  
**3-Keto-7-ethoxy-3:9:10:11-tetrahydro-1:2-cyclopentano-phenanthrene**, 765.  
**3-Keto-1-furylhexahydrophenanthrene**, 755.  
**3-Keto-1-furyl-2-methyloctahydrophenanthrene-2-carboxylic acid**, ethyl ester, 756.  
**3-Keto-1-furyloctahydrophenanthrene-2-carboxylic acid**, ethyl ester, 755.  
**2-Keto-1:2:9:10:11:12-hexahydro-3:4-benzphenanthrene**, and its derivatives, 598.  
**3-Ketohexahydro-1:2-cyclopentanophenanthrene**, and its semicarbazone, 764.  
**3-Keto- $\Delta^1$ -cyclohexenyl  $\beta$ -1-naphthylethyl ether**, 51.  
**1-Keto-9-hydroxy-1:2:3:4-tetrahydrophenanthrene**, 192.  
 **$\beta$ -Keto- $\delta$ -hydroxy- $\theta$ -(2:2:6-trimethyl- $\Delta^6$ -cyclohexenyl)- $\zeta$ -methyl- $\Delta^{\epsilon\eta}$ -octadiene**, derivatives of, 562.  
 **$\alpha$ -Ketol carboxylic acids**, 1788.  
**2-Keto-10-methoxydecahydrochrysene**, crystallography of, 758.  
**3-Keto-7-methoxy-1- $\alpha$ -furylhexahydrophenanthrene-2-carboxylic acid**, ethyl ester, 756.  
**1-Keto-7-methoxy-2-methyl-1:2:3:4:9:10-hexahydrophenanthrene**, and its 2:4-dinitrophenylhydrazone, 194.  
**1-Keto-7-methoxy-8-methyl-1:2:3:4-tetrahydrophenanthrene**, and its 2:4-dinitrophenylhydrazone, 318.  
**4-Keto-7-methoxy-1-methyl-1:2:3:4-tetrahydrophenanthrene**, and its 2:4-dinitrophenylhydrazone, 321.  
**1-Keto-7-methoxyoctahydrophenanthrene**, and its derivatives, 750.  
 **$\alpha$ -( $\gamma'$ -Keto- $\alpha'$ -*p*-methoxyphenyl-*n*-butyl)adipic acid**, ethyl hydrogen ester, 1627.  
**2-Keto-4-*p*-methoxyphenyl- $\Delta^{1:9}$ -octalin-10-carboxylic acid**, ethyl ester, 1627.  
**5-Keto-8-*m*-methoxyphenyloctane-2-carboxylic acid**, methyl ester, 193.

**5-Keto-8-*m*-methoxyphenyloctic acid**, methyl ester, 749.  
**3-Keto-7-methoxy-3:9:10:11-tetrahydro-1:2-cyclopentanophenanthrene**, crystallography of, 759.  
**1-Keto-7-methoxy-1:2:3:4-tetrahydrophenanthrene 2:4-dinitrophenylhydrazone**, 750.  
**1-Keto-8-methoxy-1:2:3:4-tetrahydrophenanthrene**, 192.  
**1-Keto-9-methoxy-1:2:3:4-tetrahydrophenanthrene**, 192.  
**2-Keto-1-methyl-1:2-dihydro- $\beta$ -naphthathiazole**, 1670.  
**7-Keto-3-methyloctahydropyrrocoline**, and its picrate, 1430.  
**2-Keto-4-methyl- $\Delta^{1:9}$ -octalin-10-carboxylic acid**, ethyl ester, 1627.  
 **$\beta$ -Keto- $\alpha$ -methyl- $\alpha$ -( $\beta'$ -phenylethyl)adipic acid**, methyl ester, 1851.  
**13-Ketomyristic acid**, ethyl ester, 282.  
 **$\beta$ -Keto- $\alpha$ -( $\beta'$ -1-naphthylethyl)adipic acid**, methyl ester, 1850.  
**Ketone**,  $C_{15}H_{24}O$ , and its 2:4-dinitrophenylhydrazone, from ethyl 1-methyl-4-*isopropylcyclohexan*-2-one-1- $\beta$ -propionate and ethyl bromopropionate, 1140.  
**Ketones**, rates of bromination and of racemisation of, 623.  
aromatic, condensation of deoxybenzoin with, 806.  
hydroaromatic, related to anthracene and phenanthrene, 71.  
liquid and dissolved, photoreactions of, 1685.  
optically active reagents for, 1222.  
 **$\delta$ -Ketonic acids**, influence of methylcyclohexane rings on tautomerism of, 570.  
**1-Keto-3-(2'-nitro-4'-tolyl)-2-methyltetrahydrophthalazine-4-acetic acid**, 1106.  
**9-Keto-octahydrophenanthrene**, and its derivatives, 77.  
**2-Keto-octahydropyridocoline**, and its picrate, 1430.  
**13-Keto-22-phenylbenenic acid**, 282.  
 **$\alpha$ -( $\gamma'$ -Keto- $\alpha'$ -phenyl-*n*-butyl)adipic acid**, and its esters, 1627.  
 **$\beta$ -Keto- $\alpha$ -( $\beta'$ -phenylethyl)adipic acid**, methyl ester, 1851.  
**2-Keto-4-phenyl- $\Delta^{1:9}$ -octalin-10-carboxylic acid**, ethyl ester, 1627.  
**13-Keto-15-phenylpentadecic acid**, and its derivatives, 282.  
**4-Keto-1-phenyl-1:2:3:4-tetrahydro-2-naphthoic acid**, and its ethyl ester, 597.  
**Ketostearic acids**, hydroxy-, 1788.  
**13-Ketotetracosanoic acid**, 284.  
**3-Keto-3:9:10:11-tetrahydro-1:2-cyclopentanophenanthrene**, and its oxime, 764.  
**1-Keto-2-(1'-tetralylidene)-1:2:3:4-tetrahydronaphthalene**, and its 2:4-dinitrophenylhydrazone, 1433.  
**1-Keto-2:3-dithioindenehydrazone- $\beta$ -carboxylic acid**, *iso*amyl ester, 1147.  
 **$\beta$ -Keto- $\theta$ -(2:2:6-trimethyl- $\Delta^6$ -cyclohexenyl)- $\zeta$ -methyl- $\Delta^{\gamma\epsilon\eta}$ -octatriene**, 562.  
**Ketoxime picryl ethers**, effects of substitution on rearrangement of, 448.  
**Kinetics** of complex formation in solution, 101.  
**Kostanecki reaction**, influence of phenyl group on, 295.

## L.

**Lactal**, and its hexa-acetyl derivative, rotatory dispersion of, 1404.  
**Lactic acid**, trichloro-, ethyl ester, action of phenylhydrazine on, 801.  
*l*-**Lactic acid**, rotation of, during neutralisation with sodium hydroxide, 1487.  
**Lactones**, electric dipole moments and wave-mechanical resonance of, 1383.

**Lactose**, potassium hydroxide compound of, 1765.  
**Lanceol**, and its derivatives, 1619.  
**Lanigerin**, 1035.  
**Lanostenea**, 1566.  
**Lanostenones**, and their derivatives, 1566.  
**Lanosterol**, and its derivatives, 1562.  
*isoLanosterols*, and their derivatives, 1566.  
**Laudanosine**, synthesis of, 201.  
**Laudanosines**,  $\alpha$ - and  $\beta$ -hydroxy-, and their hydrochlorides, 731.  
**Lectures** delivered before the Chemical Society, 1051, 1067, 1079.  
 $\alpha$ - and  $\beta$ -**Licanic acids**, and their maleic anhydride compounds, 1481.  
**Lignoceric acid**, crystallography of, 717.  
**Linkings**, chemical, 1576.  
     double, mechanism of addition to, 432, 1028.  
**Liquids**, adsorption at interface between two, 119.  
     mutually surface-active, 684.  
**Lithium**, separation of, and its determination in silicates, 1395.  
**Lupin alkaloids**, 606, 1025, 1429, 1444.  
*isoLupanine*, and its hydriodide, 1027.  
**Lutein**, 1379.  
*L-lysergic acid*, and its methyl ester, 1444.  
*isoLysergic acid*, and its derivatives, 1440.

## M.

**Magnesium pyrophosphates**, 1420.  
**Malein- $\alpha$ -naphthylamic acid**, 1846.  
**Malein-8-nitro- $\alpha$ -naphthylamic acid**, 1847.  
*l-Malic acid*, rotation of, during neutralisation with sodium hydroxide, 1487.  
**Malondialdehyde**, bromo-, preparation of, 784.  
**Malonic acid**, ethyl ester, sodium derivative, reactions of, with anilide imidochlorides, 428.  
**Mandelic acid**, normal and acid salts of, 868.  
**Manganese pyrophosphates**, 1423.  
     **Permanganates**, mechanism of reduction of, 207.  
**Margaric acid**, f.p. of mixtures of, with palmitic and stearic acids, 627.  
**Matai**. See *Podocarpus spicatus*.  
*di-Matairesinol dimethyl ether*, and *dibromo*-, and *di*- and *tetra*-nitro-, 725.  
**Melting point**, determination of, of organic compounds, 137.  
     of long-chain carbon compounds, 1368.  
**Melting-point curves** of optical isomerides, 718.  
**Memorial Lecture**, Hantzsch, 1051.  
*l- $\Delta^2$ -Menthen-1-ol*, 1597.  
*l-Menthone-l-menthylglycinehydrazone*, 1225.  
*dl-Menthone-d-neomenthylglycinehydrazone*, 1225.  
*l-Menthylglycinehydrazide*, 1224.  
*d-neoMenthylglycinehydrazide*, 1225.  
**Mercury organic compounds**, complex, containing sulphur, 175.  
**Mesitylene**, trinitro-, dipole moment of, 862.  
**Mesomerism**, ring-chain, 142.  
**Metallic carbonyls**, parachors of, 1283.  
     salts, electrolytic conductivity of, in anhydrous hydrogen cyanide, 1245.  
     adsorption of argon on crystals of, 1467.  
     complex, constitution of, 873, 1503.  
**Methane**, nitro-, photochemical decomposition of, 1580.  
     *tetranitro*-, complex formation of, 1463.  
**2-Methoxy-5-allyloxyacetophenone**, and 5-hydroxy-, 280.  
**2-Methoxy-4-allyloxystyryl methyl ketone**, 278.  
**7-Methoxy-8-isoamylchromeno-(3':4':4:3)-coumarin**, 7-hydroxy-, and its acetyl derivative, 425.

**8'-Methoxy-8-isoamylchromeno-(3':4':4:3)-coumarin**, 7-hydroxy-, and its acetyl derivative, 425.  
*p*-**Methoxy- $p$ '- $n$ -amyloxybenzophenone**, 1860.  
**Methoxyazobenzenes**, parachor, surface tension, and density of, 38.  
*o*-**Methoxybenzaldehyde**, parachor, surface tension, and density of, 39.  
**4-Methoxybenzophenones**, bromo-, chloro-, fluoro-, and nitro-, 1861.  
**4-Methoxy-3-** and **4'-benzoyldiphenyl**, and their 2:4-dinitrophenylhydrazones, 804.  
**7-Methoxy-2-benzylchromone**, 298.  
**7-Methoxy-2-benzyl-3-methylchromone**, 298.  
*p*-**Methoxy- $p$ '- $n$ -butoxybenzophenone**, 1860.  
*p*-**Methoxy- $p$ '- $\beta$ -chloroethoxybenzophenone**, 1860.  
**1-Methoxy-3-(2':6'-dichloro-4'-nitrophenyl)-4- $p$ -dimethylaminostyrylphthalazinium perchlorate**, 1710.  
**1-Methoxy-3-(2':6'-dichloro-4'-nitrophenyl)-4-methylphthalazinium perchlorate**, 1709.  
**1-Methoxy-3-(2':6'-dichloro-4'-nitrophenyl)-4-(4'-nitrobenzenazomethyl)phthalazinium perchlorate**, 1712.  
**Methoxychroman-4-carboxylic acids**, and 3-hydroxy-, and their ethyl esters, 421.  
**Methoxy- $\Delta^3$ -chromene-4-carboxylic acids**, and 3-hydroxy-, ethyl esters, and their acetates, 421.  
**7-Methoxychromeno-(3':4':4:3)-coumarin**, 7-hydroxy-, and 5:7- and 7:8-*di*-hydroxy-, and their acetyl derivatives, 425.  
**8'-Methoxychromeno-(3':4':4:3)-coumarin**, 7-hydroxy-, and 7:8-*di*hydroxy-, and their acetyl derivatives, 425.  
**4-Methoxy-3:4'-dibenzoyldiphenyl**, 804.  
 $\gamma$ -**6-Methoxy-3:4-dihydro-1-naphthyl- $\alpha$ -methylbutyric acid**, methyl ester, 194.  
**9-Methoxy-3:4-dihydro-1:2-cyclopentanophenanthrene**, 189.  
**7-Methoxy-3:4-dihydrophenanthrene-1:2-dicarboxylic anhydride**, 53.  
**2-Methoxy-3:5-dimethylacetophenone**, and its semicarbazone, 215.  
**9-Methoxy-1:3'-dimethyl-3:4-dihydro-1:2-cyclopentanophenanthrene**, and its derivatives, 190.  
**10-Methoxydodecahydrochryseno**, 2-hydroxy-, crystallography of, 758.  
*p*-**Methoxy- $p$ '-ethoxybenzophenone**, and 3'-chloro-, 1860.  
**3-Methoxy-4-ethoxybenzoyl acetic acid**, ethyl ester, 1000.  
 $\alpha$ -**3-Methoxy-4-ethoxybenzoyl- $\beta$ -3:4-dimethoxybenzylbutyrolactone**, 1001.  
 $\beta$ -**3-Methoxy-4-ethoxybenzoyl- $\alpha$ -3:4-dimethoxybenzylidene- $\beta$ -methylene propionic acid**, 1002.  
 $\beta$ -**3-Methoxy-4-ethoxybenzoyl- $\alpha$ -3:4-dimethoxybenzylidene propionic acid**, and its  $\gamma$ -lactone, 1002.  
 $\beta$ -**3-Methoxy-4-ethoxybenzoylpropionic acid**, 1001.  
**6-Methoxy-7-ethoxy-1-3':4'-dimethoxyphenyl-3-hydroxymethyl-3:4-dihydronaphthalene-2-carboxylactone**, 1002.  
**6-Methoxy-7-ethoxy-1-3':4'-dimethoxyphenyl-2-hydroxymethylnaphthalene-3-carboxylactone**, 1002.  
**6-Methoxy-7-ethoxy-1-3':4'-dimethoxyphenyl-3-hydroxymethylnaphthalene-2-carboxylactone**, 1002.  
 $\beta$ -**3-Methoxy-4-ethoxyphenylacrylic acid**,  $\alpha$ -cyano-, 1000.  
 $\beta$ -**3-Methoxy-4-ethoxyphenylpropionic acid**,  $\alpha$ -cyano-, and its methyl ester, 1000.  
**4-Methoxyflavone**, 5-hydroxy-, and its acetyl derivative, 1714.  
**6-Methoxyflavone**, 5:7-*di*hydroxy-. See *Oroxylin-A*.  
**6-Methoxy-2- $\alpha$ -furfurylidene- $\alpha$ -tetralone**, 756.  
**3-Methoxy-2:2:4:4:5:5-hexacarboxycyclopentane-1-malonic acid**, methyl ester, 152.  
**2-Methoxyhexahydrochryseno**, 761.

- 4-Methoxymethylbenzophenones, 1861.  
 3-Methoxy-4-methylchalcone, 257.  
 6-Methoxy-2-methyl-3-coumaranone, and its 2:4-dinitrophenylhydrazones, 1836.  
 6-Methoxy-2-methylcoumarone-3-acetic acid, 1836.  
 8-Methoxy-1-methyl-3:4-dihydro-1:2-cyclopentaphenanthrene, 191.  
 9-Methoxy-1-methyl-3:4-dihydro-1:2-cyclopentaphenanthrene, 190.  
 7-Methoxy-3':4'-methylenedioxy-2-styryl-3-phenylchromone, 299.  
 8-Methoxy-4-methylflavylium ferrichloride, 258.  
 4-Methoxy-1-methylnaphthalene, 189.  
 $\beta$ -(2-Methoxy-1-methyl-6-naphthoyl)propionic acid, 318.  
 $\gamma$ -(2-Methoxy-1-methyl-6-naphthyl)butyric acid, 318.  
 7-Methoxy-2-methyloctahydrophenanthrene-2-carboxylic- $\beta$ -propionic acid, 1851.  
 9-Methoxy-3'-methyl-1:2-cyclopentenophenanthrene, and its derivatives, 190.  
 8-Methoxy-4-(*p*-methylphenacylidene)-4'-methylflavene, 257.  
 8-Methoxy-4-(*p*-methylphenacyl)-4'-methylflavylium ferrichloride, 258.  
 2-Methoxy-1-methylphenanthrene, 317.  
 7-Methoxy-1-methylphenanthrene, 319.  
 7-Methoxy-8-methyl-1:2:3:4-tetrahydrophenanthrene, 318.  
 1-Methoxynaphthalene, 2:4-dinitro-8-hydroxy-, and its acetyl derivative, 558.  
 8-Methoxynaphthalene, 2:4-diamino-1-hydroxy-, 2:4- and 2:7-dinitro-1-hydroxy-, and their derivatives, 558.  
 1-Methoxynaphthalene-2:4-dicarboxylic acid, 7-bromo-, and 7-chloro-, and their dianilides, 1776.  
 2-Methoxy- $\beta$ -naphthathiazole, 1671.  
 $\beta$ -(2-Methoxy-1- and -6-naphthoyl)propionic acids, and their esters, 320.  
 $\gamma$ -4-Methoxy-1-naphthylbutyric acid, 192.  
 $\gamma$ -5-Methoxy-1-naphthylbutyric acid, 191.  
 $\gamma$ -(6-Methoxy-1-naphthyl)butyric acid, and its ethyl ester, 53.  
 $\alpha$ -( $\beta$ -4-Methoxy-1-naphthylethyl)adipic acid, 189.  
 $\beta$ -Methoxy-1-naphthylethyl alcohols, and their bromides, 188, 190.  
 $\beta$ -4-Methoxy-1-naphthylethylmalonic acid, 192.  
 $\beta$ -5-Methoxy-1-naphthylethylmalonic acid, 191.  
 $\beta$ -(6-Methoxy-1-naphthyl)ethylmalonic acid, 53.  
 2-( $\beta$ -4-Methoxy-1-naphthylethyl)cyclopentanone-2-carboxylic acid, ethyl ester, 189.  
 $\beta$ -4-Methoxy-1'-naphthylethylcyclopentene, 189.  
 $\gamma$ -(2-Methoxy-6-naphthyl)- $\Delta^{\beta}$ -pentenoic acid, 321.  
 $\gamma$ -(2-Methoxy-6-naphthyl)-*n*-valeric acid, 321.  
 1-Methoxy-3-nitroaryl-4-methylene-3:4-dihydrophthalazines, constitution and reactions of, 1704.  
 1-Methoxy-3-(4'-nitrophenyl)-4-(benzeneazomethyl)phthalazinium perchlorate, 1712.  
 1-Methoxy-3-nitrophenyl-4-*p*-dimethylaminostyrylphthalazinium perchlorates, 1710.  
 1-Methoxy-3-*p*-nitrophenyl-4-(5'-keto-1'-phenyl-3'-methylpyrazolinylidene-ethylidene)-3:4-dihydrophthalazine, 1711.  
 1-Methoxy-3-nitrophenyl-4-methylphthalazinium perchlorates, 1709.  
 1-Methoxy-3-nitrophenyl-4-(4''-nitrobenzeneazomethyl)phthalazinium perchlorates, 1712.  
 1-Methoxy-3-nitrophenyl-4-(2''-4''-dinitrobenzylidene)-3:4-dihydrophthalazines, 1712.  
 1-Methoxy-3-nitrophenyl-4-( $\beta$ -phenylethyl)phthalazinium iodides, 1710.  
 1-Methoxy-3-nitrophenylphthalazinium perchlorates, 1709.  
 7-Methoxyoctahydrophenanthr-1-ol- $\alpha$ , 750.  
 8-Methoxy-1:2-cyclopentenophenanthrene, and its derivatives, 191.  
 9-Methoxy-1:2-cyclopentenophenanthrene, and its derivatives, 190.  
 8-Methoxy-4-phenacylflavene, 257.  
 8-Methoxy-4-phenacylflavylium ferrichloride, 257.  
 8-Methoxy-4-phenacylideneflavene, 257.  
 1-Methoxyphenanthrene-2:4-dicarboxylic acid, 1776.  
 7-Methoxyphenanthrene-1:2-dicarboxylic anhydride, 53.  
 Methoxyphenoxyacetic-2-acetic acids, 421.  
 $\alpha$ -3-Methoxyphenoxypropionic acid, and its amide, 1835.  
 Methoxy-1-phenyl-3:4-dihydronaphthalenes, 587.  
 $\beta$ -*m*-Methoxyphenylethyl bromide, 51.  
 7-Methoxy-3-phenyl-2-ethylchromone, 299.  
 7-Methoxy-3-phenyl-4-ethylcoumarin, 298.  
 7-Methoxy-4-phenyl-3'-methylbenzo- $\beta$ -naphthaspiropyran, 1382.  
 4'-Methoxy-1-phenyl-2-methylnaphthalene, 588.  
 4'-Methoxy-1-phenylnaphthalene, nitro-, 587.  
 Methoxy-1-phenylnaphthalenes, 587.  
 $p$ -Methoxy-*p*'-propoxybenzophenone, and 3'-chloro-, 1860.  
 3-Methoxysalicylidenediacetophenone, 256.  
 3-Methoxysalicylidenedi-(*p*-methoxyacetophenone), 257.  
 3-Methoxysalicylidenedi-(*p*-methylacetophenone), 257.  
 Methoxytetralone, condensation of, with acetylhexene and acetylhexene, 757.  
 2-Methoxy- $\alpha$ : $\beta$ :3:5-tetramethylcinnamic acid, 215.  
 $\gamma$ -Methoxy- $\alpha\alpha\beta\beta$ -tetramethylglutaric acid,  $\gamma$ -hydroxy-, lactone, 274.  
 2-(4'-Methoxy-*m*-tolyl)cyclohexanone, and its semicarbazone, 323.  
 1-(4'-Methoxy-*m*-tolyl)- $\Delta^1$ -cyclohexene, 323.  
 1-(5'-Methoxy-*o*-tolyl)-2-methyl- $\Delta^1$ -cyclohexene, 321.  
 2-Methoxy- $\beta$ :3:5-trimethylcinnamic acid, 215.  
 2-Methoxy- $\beta$ :3:5-trimethyl- $\alpha$ -ethylcinnamic acid, 216.  
 6-Methoxy-2-*veratrylidene*- $\alpha$ -tetralone, 756.  
 Methyl iodide, influence of solvents on reaction of, with pyridine, 1353.  
 (-)Methyl  $\alpha\gamma$ -dimethylallyl ether, 583.  
 3-Methylacridine, 5-chloro-1-bromo-, 1549.  
 Methylalkoxyglyoximes as chelate groups, 563.  
 4-Methyl-3-allyl-3:4-dihydroquinazoline, 4-nitro-, and its picrate, 197.  
 2-*O*-Methylallyl- $\beta$ -resorcyraldehydes, 278.  
 2-*O*-Methylallylresorpiophenones, 277.  
 Methylamine, kinetics of thermal oxidation of, 1524.  
 1-Methylaminoacridine, 609.  
 $\gamma$ -Methylamino-*n*-butane,  $\delta\delta\delta$ -trichloro- $\beta$ -nitro-, and its hydrochloride, 1531.  
 1-Methylamino-5:10-dihydroacridine *p*-toluenesulphonamide, 608.  
 $\gamma$ -Methylamino-*n*-hexane,  $\delta\delta\epsilon$ -trichloro- $\beta$ -nitro-, hydrochloride, 1531.  
 $\beta$ -Methylamino-*n*-pentane,  $\gamma\gamma\delta$ -trichloro- $\alpha$ -nitro-, and its hydrochloride and phenylcarbamyl derivative, 1531.  
 1-Methylamino-5-phenylbenzthiazole, 1671.  
 $\beta$ -Methylaminopropanal,  $\gamma\gamma\gamma$ -trichloro- $\alpha$ -nitro-, phenylhydrazones, 1694.  
 $\beta$ -Methylaminopropane,  $\gamma\gamma\gamma$ -trichloro- $\alpha$ -nitro-, and its hydrochloride, 1530.  
 2-Methylamino-5:6:7:8-tetrahydro- $\beta$ -naphthathiazole, and its acetyl derivative, 1671.  
*cis*- $\alpha$ -Methyl- $\alpha'$ -*n*-amylglutaric acid, 1447.  
 $\alpha$ -Methyl- $\alpha'$ -*n*-amylglutarimide, 1448.  
 Methylaniline, 2-bromo-4-nitro-, 1750.  
 2-Methyl-3:4-benzphenanthrene, and its picrate, 599.  
 1-Methylbenzthiazole, 507.  
 1-Methylbenzthiazole, 5-bromo-, and 5-chloro-, and their derivatives, and cyanine dyes therefrom, 1225.  
 6-Methyl-1:2:3-benztriazole, 1-hydroxy-, 118.

- 2-(5'-Methyl-1':2':3'-benzotriazolyl)isoinolinone-3-acetic acid, and its derivatives, 1106.  
*p*-Methylbenzyl nitrate, 240.  
 5-Methylbenzylmethylmalonic acid, 2-bromo-, 60.  
 Methylbenzylmethylmalonic acids, 58.  
*o*-5-Methylbenzylpropionic acid, *o*-2-bromo-, 60.  
*o*-Methylbenzyl isopropyl ketone, and its derivatives, 675.  
 Methyl *αβ*-dibromo-*β*-phenylethyl ketone, 1316.  
 (+)Methyl-*αβ*-dibromopropylcarbinol, 1316.  
 (+)Methyl *αβ*-dibromopropyl ketone, 1316.  
 1-Methyl-2-*D*'-butenylcyclohexanol, 475.  
 2-Methyl-1-*D*'-butenylcyclohexanol, dehydration of, 476.  
*α*-Methyl-*α*'-n-butylglutaric acid, 1447.  
 9-Methylcarbazole-3:6-bis-*γ*-ketobutyric acid, and its ethyl ester, 1298.  
 9-Methylcarbazole-3:6-dicarboxylic acid, ethyl ester, 1297.  
 9-Methylcarbazole-3:6-diphthaloylic acid, ethyl ester, 1297.  
 7-Methylcholesterol, 7-hydroxy-, and its derivatives, 1275.  
 Methyl *α*-chloro-*γ*-acetoxypromyl ketone, 1556.  
 Methyl *α*-chloro-*γ*-hydroxypromyl ketone, 1556.  
 Methyl *α*-chloro-*γ*-phenoxypropyl ketone, 1556.  
 6-Methylcoumarin, 7-hydroxy-, and its acetate, 1831.  
*cis*-9-Methyldecalin, synthesis of, 470.  
 8-Methyl-2:2'-diethylthiacarbocyanine bromide, 5:5'-dibromo-, and iodide, 5:5'-dichloro-, 1230.  
 2-Methyl-1:2-dihydrobenzthiazole, 5-bromo-1-thio-, 1674.  
*O*-Methyldihydroxanthoxyletinic acid, 632, 1830.  
 4-Methyldiphenylamine-2'-carboxylic acid, 2-bromo-, and 4'-chloro-2-bromo-, 1165.  
 4'-Methyldiphenylsulphones, amino-, chloronitro-, nitro-, nitroamino-, and nitrohydroxy- and their derivatives, 221.  
 Methylene-blue, adsorption of, at benzene-water and chlorobenzene-water interfaces, 119.  
 7-Methylenecholesterol, and its derivatives, 1274.  
 Methylene-*α*-cyperone, hydroxy-, and its 2:4-dinitrophenylhydrazone, 671.  
*α*-(3:4-Methylenedioxybenzoyl)-*β*-(3:4-methylenedioxybenzyl)butyrolactone, 747.  
*β*-(3:4-Methylenedioxybenzoyl)-*α*-(3:4'-methylenedioxybenzylidene)-*β*-methylenepropionic acid, 746.  
*β*-(3:4-Methylenedioxybenzoyl)-*α*-(3:4'-methylenedioxybenzylidene)propionic acid, and its *γ*-lactone, 746.  
*β*-(3:4-Methylenedioxybenzoyl)propionic acid, preparation of, 746.  
*β*-(3:4-Methylenedioxybenzyl)butyrolactone, 351.  
*β*-(3:4-Methylenedioxybenzyl)butyrolactone-*α*-carboxylic acid, ethyl ester, 350.  
 3:4-Methylenedioxybenzyl-*α*-cyanoacetic acid, methyl ester, 729.  
 6:7-Methylenedioxy-3-methyl-3:4-dihydroquinazoline, 4-hydroxy-, 198.  
 6:7-Methylenedioxy-1-(3:4'-methylenedioxyphenyl)-3-hydroxymethyl-3:4-dihydronaphthalene-2-carboxylactone, 747.  
 6:7-Methylenedioxy-1-(3:4'-methylenedioxyphenyl)-hydroxymethylnaphthalenecarboxylic acids, lactones, 746.  
 6:7-Methylenedioxy-1-(3:4'-methylenedioxyphenyl)-naphthalene-2:3-dicarboxylic acid, and its derivatives, 746.  
 6:7-Methylenedioxy-3-methylquinazolinium iodide and picrate, 198.  
 1:8-Methylenedioxy-naphthalenes, dinitro-, 559.  
 6:7-Methylenedioxy-4-nitromethyl-3-methyl-3:4-dihydroquinazoline, 199.  
 3:4-Methylenedioxyphthalide, and 6-bromo-, and 6-nitro-, 200.  
 6:7-Methylenedioxy-1-*α*-picolyl-3:4-dihydroisoquinoline, and its salts, 610.  
 6:7-Methylenedioxy-1-*α*-picolyl-1:2:3:4-tetrahydroisoquinoline, and its salts, 611.  
 6:7-Methylenedioxy-1-*α*-pipecolyl-1:2:3:4-tetrahydroisoquinoline, and its salts, 611.  
 6:7-Methylenedioxyquinazoline, 198.  
 6:7-Methylenedioxyisoquinoline picrate, 611.  
 2-(3:4'-Methylenedioxystryryl)-3-benzyl-5:8-dimethylchromone, 428.  
 2-(3:4'-Methylenedioxystryryl)-5:8-dimethylchromone, 427.  
 2-(3:4'-Methylenedioxystryryl)-6:8-dimethylchromone, 216.  
 2-(3:4'-Methylenedioxystryryl)-5:8-dimethyl-3-ethylchromone, 427.  
 2-(3:4'-Methylenedioxystryryl)-6:8-dimethyl-3-ethylchromone, 217.  
 2-(3:4'-Methylenedioxystryryl)-3:5:8-trimethylchromone, 427.  
 2-(3:4'-Methylenedioxystryryl)-3:6:8-trimethylchromone, 216.  
 6:7-Methylenedioxy-1-(3:4':5'-trimethoxyphenyl)-3-hydroxymethyl-3:4-dihydronaphthalene-2-carboxylic acid, lactone, 351.  
 6:7-Methylenedioxy-1-(3:4':5'-trimethoxyphenyl)-3-hydroxymethyl-1:2:3:4-tetrahydronaphthalene-2-carboxylic acid, 1-hydroxy-, lactone, 351.  
 Methylene-*dl*-menthone, hydroxy-, 1599.  
 Methyleneoxyglyoxime, and its nickel compound, 566.  
 Methyleneacetic acid, synthesis of, 362.  
*cis*-*α*-Methyl-*α*'-ethylglutarimide, 1446.  
 Methylene-*n*-propylarsine, formation of, and its salts, by micro-organisms, 264.  
 Methylene-*n*-propylhydroxyarsonium picrate, 266.  
 4-Methyl galactose, and its derivatives, true constitution of, 640.  
 6-Methyl galactose, 640.  
 6-Methyl glucosazone, 860.  
 6-Methyl glucose, synthesis of, 859.  
*α*-Methylglutaconic acid, dimethyl ester, 486.  
 Methylglyoxalphenylhydrazone-*ω*-sulphonic acid, sodium salt, and its halogeno- and nitro-derivatives, 84.  
 9-Methylhexahydrocarbazole, 7-amino-, and its diacetyl derivative, 901.  
 Methylcyclohexanes, 1-hydroxy-1-cyano-, 416.  
*cis*- and *trans*-1-Methylcyclohexane-1-carboxylic-2-acetic acids, 476.  
 Methylcyclohexanecarboxylicacetic acids, synthesis of, 478.  
 1-Methylcyclohexane-4-carboxylic acid, 2-hydroxy-2-cyano-, methyl ester, 1625.  
 Methylcyclohexane-1-*α*-cyanoacetic acids, 1-cyano-, ethyl esters, 418.  
*cis*- and *trans*-1-Methylcyclohexane-1:2-diacetic acids, 475.  
 1-Methylcyclohexane-1:2-dicarboxylic acid, ethyl ester, 476.  
 1-Methylcyclohexane-1:2-dicarboxylic acid, 2-hydroxy-, 2-acetyl derivative, 482.  
 1-Methylcyclohexane-1:2-dicarboxylic acids, stereoisomeric, synthesis of, 478.  
 4-Methylcyclohexane-1:4-*spiro*-2'-hydroxy-6'-keto-5'-cyano-2-methylpiperidine, 572.  
 1-Methylcyclohexane-3-malonic acid, 2-cyano-, diethyl ester, 485.  
 2-Methylcyclohexanol-2-carboxylic acid, 1-cyano-, ethyl ester, 482.  
 2-Methylcyclohexanol-1:2-dicarboxylic acid, 482.  
 Methylcyclohexanones, condensation of cyanohydrins of, with arylamines, 1159.

- 1-Methylcyclohexan-2-one-3-carboxylic acid**, 2-methylcyclohexyl ester, and its derivatives, 1142.  
**1-Methylcyclohexan-2-one-4-carboxylic acid**, and its methyl ester, 1625.  
**1-Methylcyclohexan-2-one-3:4-dicarboxylic acid**, ethyl ester, 1624.  
**1-Methyl- $\Delta^2$ -cyclohexene-1-carboxylic acid**, 2-cyano-, ethyl ester, 483.  
**1-Methyl- $\Delta^1$ -cyclohexene-2:4-dicarboxylic acid**, 1625.  
**1-Methyl- $\Delta^2$ -cyclohexene-1:2-dicarboxylic acid**, and its derivatives, 483.  
**3-Methylcyclohexenylacetone**, and its derivatives, 572.  
**Methyl hexoses**, 640.  
**Methylcyclohexyl nitrites**, 286.  
**2-Methylcyclohexyldienecyanoacetic acid**, ethyl ester, 419.  
**2-Methylcyclohexylidene-1-cyanoacetic-2-carboxylic acid**, diethyl ester, 484.  
**6-Methylhomophthalic acid**, and its anhydride, 292.  
**9-Methyl-2-hydrindanone**, 476.  
**4-Methyl-1-hydrindone**, 2-oximino-, 292.  
**3-Methyl-2- $\beta$ -hydroxyethyl-1:3-dimethylcyclohexane**, 3-hydroxy-, and its diacetate, 1142.  
**4-Methyl-5- $\beta$ -hydroxyethylthiazole**, and its picrate, 1556.  
**4-Methyl-5- $\beta$ -hydroxyethylthiazole**, 2-amino-, and its picrate, 1603.  
**Methyl  $\gamma$ -hydroxy- $\beta$ -(3:4-methylenedioxybenzyl)propyl ketone**, 351.  
**Methylhypoxanthines**, dissociation constants of, 1713.  
**Methyl ketones**, unsaturated, reactions of, with ethyl cyclohexanone-2-carboxylate and ethyl cyclopentanone-2-carboxylate, 1626.  
**2-Methyl mannose**, 640.  
**4-Methyl mannose**, and its derivatives, true constitution of, 640.  
**Methylmethoxyglyoxime**, and its nickel compound, 566.  
**2-Methyl-1- $\beta$ -4'-methoxy-1'-naphthylethylcyclopentanol**, 189.  
**2-Methyl-1-( $\beta$ -5'-methoxy-1'-naphthylethyl)cyclopentanol**, 191.  
**Methyl-2':1'-naphtha-1:2-fluorenes**, 58.  
**Methyl-2':1'-naphtha-1:2-fluorenones**, 58.  
**1-Methyl-2:6(1':8')-naphthapiperid-4-one**, and its picrate, 337.  
**Methyl- $\alpha$ -naphthylamine**, 4-chloro-2-nitro-, 1502.  
**3-Methyloctahydropryrocoline**, and its salts, 1430.  
*cis*-**9-Methyloctalin**, synthesis of, 470.  
**5-Methyl-0:3:3-bicyclooctan-2-one** semicarbazone, 621.  
**Methyl-orange**, adsorption of, at benzene-water and chlorobenzene-water interfaces, 119.  
**Methyloroxylin-A**, acetyl and benzoyl derivatives, 592.  
**1-Methylcyclopentane-3-acetic acid**, 2-hydroxy-2-cyano-, methyl ester, 1624.  
**4-Methylcyclopentane-1-cyanoacetic-2-acetic acid**, ethyl ester, 621.  
**4-Methylcyclopentane-1:2-diacetic acid**, 621.  
**3-Methylcyclopentanone** cyanohydrin, condensation of, with aniline, 1675.  
**1-Methylcyclopentan-2-one-3-acetic acid**, and its derivatives, 1624.  
**4-Methylcyclopentanone-2-acetic acid**, ethyl ester, 620.  
**4-Methylcyclopentanone-2-carboxylic-2-acetic acid**, ethyl ester, 620.  
**5-Methylcyclopentanone-2-carboxylic-2- $\alpha$ -propionic acid**, ethyl ester, 620.  
**5-Methylcyclopentanone-2- $\alpha$ -propionic acid**, and its ethyl ester, 620.  
**1-Methyl- $\Delta^1$ -cyclopentene-3-acetic acid**, 2-cyano-, 1624.  
**1-Methyl- $\Delta^1$ -cyclopentene-2-carboxylic-3-acetic acid**, 1624.  
**4-Methylcyclopentylidene-1-cyanoacetic-2-acetic acid**, ethyl ester, 621.  
**2-Methylperimidine**, 7:9-dibromo-, 1341.  
**1-Methylphenanthrene**, 2-hydroxy-, 318.  
 7-hydroxy-, and its derivatives, 321.  
**4-Methylphenanthrene**, 318.  
 (-) **Methyl- $\beta$ -phenylethylcarbinol**, and its phenylurethane, 88.  
*C*-**Methylphloroglucinol  $\beta$ -dimethyl ether**, 1837.  
*cis-a*-**Methyl- $\alpha$ -*n*-propylglutarimide**, 1447.  
**1-Methyl-4-isopropylcyclohexan-2-one-1- $\beta$ -propionic acid**, ethyl ester, and its semicarbazone, 1139.  
**Methyl isopropyl ketone phenylsemicarbazone**, 736.  
**4-Methyl-2-*n*-propylresorcinol**, 279.  
**2-Methyl-7-isopropyl-1:2:3:4-tetra-1-one**, and its derivatives, 674.  
**3-Methylpurpurin**, 3-hydroxy-, 1716.  
**1-Methylpyridinium salts**, 691.  
**2-Methylpyrimidine-5-acetylhydrazide**, 4-hydroxy-, 1602.  
**2-Methylpyrimidine-5-acetic acid**, 4-hydroxy-, ethyl ester, 1602.  
**3-(4'-Methylpyrimidyl-5')-4-methyl-5- $\beta$ -hydroxyethylthiazolium chloride** hydrochloride, 3-6'-amino-, 1561.  
**3-(4'-Methylpyrimidyl-5')-4-methylthiazolium chlorides**, 2':6'-diamino-, and 2':6'-dihydroxy-, 1558.  
 chloride hydrochloride, 3-6'-amino-, 1561.  
**2-Methylpyrrole-5-acetic acid**, ethyl ester, 607.  
**2-Methylpyrrolidine-5-acetic acid**, ethyl ester, and its derivatives, 607.  
**2-Methylpyrrolidine-5-acetic-1- $\alpha$ -propionic acid**, ethyl ester, 607.  
**2-Methylpyrrolidine-5-acetic-1- $\beta$ -propionic acid**, ethyl ester, 1430.  
**2-Methylsulphonylbenzo-*o*-nitroanilide**, 331.  
**2-Methylsulphonylbenzo-2'-nitrodiphenylamide**, 331.  
**9-Methyltetrahydrocarbazole**, 7-nitro-, 901.  
**6-Methyl-3:4:5:8-tetrahydrocoumaran-1:2-dione**, 1142.  
**10-Methyl-3:4:10:11-tetrahydro-2':1'-naphtha-1:2-fluorene**, 57.  
*O*-**Methyltetrahydroxanthoxyletinic acid**, 632, 1830.  
**5-Methyl- $\alpha$ -tetralone**, m.p. of, 294.  
**4-Methylthiazole**, condensation of, with picryl chloride, 1607.  
**4'-Methylthiazolo-(2':3':8:7)purine**, 2:6-dihydroxy-, 1561.  
**2-Methylthiobenzodimethylamide**, 1147.  
**2-Methylthiobenzodimethylthioamide**, 1147.  
**2-Methylthiobenzo-*NS*-dimethylthioamide**, 1147.  
**2-Methylthiobenzomethylamide**, and its oxime, 1147.  
**2-Methylthiobenzomethylthioamide**, 1147.  
**2-Methylthiobenzo-*o*-nitroanilide**, 331.  
**2-Methylthiobenzo-2'-nitrodiphenylamide**, 331.  
**2-Methylthio-*p*-cyanine**, and its platinumchloride, 507.  
**1-Methylthiobenzthiazole**, 5-bromo-, and 5-nitro-, 1674.  
**1-Methylthiol-5-methylbenzthiazole**, 1673.  
*O*-**Methylxanthoxyletinic acid**, and its methyl ester, 631.  
*O*-**Methylxanthyletinic acid**, 1829.  
**Michael reaction** with acetylenic esters, 1804.  
**Micro-organisms**, formation of organo-metalloidal compounds by, 264.  
**Molecular dissymmetry** due to symmetrically placed deuterium and hydrogen, 808.  
 structure and dipole moments, 402.  
**Myxoxanthin**, and its oxime, 1378.  
**Myxoxanthophyll**, 1379.

## N.

- $\alpha$ -Naphthaldehyde 2:4-dinitrophenylhydrazone**, 353.  
**Naphthalene**, structure of, 331.

- Naphthalene**, vapour pressure and solubility of solid solutions of  $\beta$ -naphthol with, 1279.  
preparation of 2:3-derivatives of, 1151.
- Naphthalene**, 2:4-diamino-1:8-dihydroxy-, and di-nitro-1:8-dihydroxy-derivatives, and their derivatives, 558.
- 4-bromo-1-iodo-, 2:4-dibromo-1-iodo-8-nitro-, 1:2:4-tribromo-8-nitro-, 1-chloro-4-bromo-8-nitro-, 1-chloro-2:4-dibromo-, and 1-chloro-2:4-dibromo-8-nitro-, 1339.
- chloro-derivatives, electric moments of, 393.
- 1-chloro-8-fluoro-, and 1-chloro-8-iodo-, 334.
- 1-chloro-4-iodo-, and 1:4-dichloro-2-nitro-, 1502.
- 3-chloro-2-nitro-, 1153.
- dicyano-derivatives, preparation of, 1739.
- 1:8-dihydroxy-, nitration of, 556.
- 2:3-dinitro-1:4-dihydroxy-, 1152.
- Naphthalene series**, syntheses in, 1775.
- 1-Naphthaleneazo- $\beta$ -naphthol**, 4:8-dinitro-, 1339.
- Naphthalene-1:8-dialdehyde**, condensation reactions of, 336.
- Naphthalenedicarboxylic acids**, and their esters, 1739.
- Naphthalenesulphonic acids**, cyano-, salts, 1741.
- 1:2-Naphthalocyanine**, and its metallic salts, 1746.
- 1:2-Naphthalocyanine**, chloro-, metallic salts, 1747.
- 1:2-Naphthalocyanines**, 1744.
- $\alpha$ -Naphthaquinone**, addition of, to cyclopentadiene, 1032.
- $\beta$ -Naphthaquinone  $\alpha$ -phenylhydrazone**, parachor, surface tension, and density of, 38.
- Naphthaquinones**, reduction potentials of, 1457.
- $\beta$ -Naphthathiazole derivatives**, unsaturation and tautomerism of, 1668.
- $\beta$ -Naphthathiazole**, 2-amino-, 4-bromo-2-amino-, 2-chloro-, and 2-hydroxy-, and their derivatives, 1669.
- $\alpha$ -Naphthoic acid**, 8-chloro-, methyl ester and nitrile, 334.
- $\beta$ -Naphthol**, vapour pressure and solubility of solid solutions of naphthalene with, 1279.
- 1-Naphthol-2:4-dicarboxylic acid**, 7-bromo-, and 7-chloro-, and their ethyl esters, 1776.
- $\beta$ -Naphthol-1-sulphonic acid**, reaction of diazosulphonates from, 1098, 1704.
- $\alpha$ -Naphthylamine**, 3-bromo- and 3-chloro-2-nitro-, 1153.
- 5:7:8-tribromo-, 4-bromo-8-nitro-, 2:4-dibromo-8-nitro-, 8-chloro-5:7-dibromo-, and 4:8-dinitro-, and their derivatives, 1339.
- 4-chloro-2-nitro-, 1502.
- 8-nitro-, preparation of, and its derivatives, 1844.  
reactions of, and its derivatives, 1338.
- $\alpha$ - and  $\beta$ -Naphthylamine hydrochlorides, action of methyl alcohol on, 1783.
- $\alpha$ - and  $\beta$ -Naphthylamines, additive compounds of, with *m*-dinitrobenzene, 1576.
- Naphthylamines**, halogeno-, elimination of halogen in nitration of, 1762.
- $\beta$ -Naphthylaminomethylene-*dl*-menthone**, 1600.
- 1:2-Naphthylenediamine**, 3-chloro-, and its dihydrochloride, 1764.
- 1:4-Naphthylenediamine**, 2-*mono*- and 2:3-*di*-nitro-, 1152.
- 1:8-Naphthylenediamine**, 2:4-dibromo-, 1341.
- 3-( $\beta$ -1'-Naphthylethyl)-2:4-dimethylindene**, 7-bromo-, and its dipicrate, 60.
- 3-( $\beta$ -1'-Naphthylethyl)dimethylindenes**, 58.
- 3-( $\beta$ -1'-Naphthylethyl)-2-methylindene**, and its dipicrate, 57.
- $\alpha$ -1-Naphthylglutaconic acid**, 1777.
- 2-(1'-Naphthyl)cyclohexanol**, and its derivatives, 76.
- Naphthyliminobenzylurethanes**, 432.
- 1-(1'-Naphthyl)-2-methyl- $\Delta^1$ -cyclohexene**, 1434.
- $\alpha$ -1-Naphthylisopropyl alcohol**, and its derivatives, 61.
- $\alpha$ -Naphthylthioncarbamie acid**, methyl ester, 1670.
- $\alpha$ -Naphthylthiourea**, 4-bromo-, 1669.
- Netoric acid**, and hydroxy-, ethyl ester, 213.
- Nickel**, evaporation of, in a vacuum, 1517.  
electrically-heated, disappearance of carbon monoxide in presence of, 1513.
- Nickel compounds**, complex, 1300.  
quadrivalent, configuration of, 129.
- Nickel chloride**, formation and solution of, in non-aqueous liquids, 1300.  
pyrophosphates, 1422.
- Nickel organic compounds** :—
- Nickel bismethylethylglyoxime**, 132.  
carbonyl, parachor of, 1284.
- Nitriles**, effect of solvent and temperature on dipole moments of, 1184.  
unsaturated, rates of isomerisation and of hydrogen isotope exchange in, 1328.
- polyNitro-compounds**, dipole moments of, 862.  
formation of complexes of, with aromatic hydrocarbons, 1463.
- Nitrogen dioxide (nitric oxide)**, reactions of, with deuterium and with hydrogen, 378.  
detection of reaction chains by means of, 812.  
trioxide, equilibrium of, with water, 1.  
*per*- or *tetr*-oxide, equilibrium of, with water, 6, 10.  
*pentoxide*, combustion of mixtures of, with ozone, 1409.  
oxides, properties of, 1, 6, 10, 1409.
- Nitrous acid** as nitrating and oxidising agent, 1500.
- Nitro-paraffins**, condensation of, with halogenoaldehydes, 1294.
- Nitrophenols**, dipole moments of, 1049.
- Nitrosyl chloride**, action of, on *n*-hexane in light, 1005.
- Nomenclature**, chemical, 1067.
- Non-electrolytes**, solubility of, 1171.
- cis*- and *trans*-*dl*-**Norcaryophyllenic acids**, synthesis of, 593.
- alloNorcholanic acid**, 3-chloro-, and its methyl ester, 737.

## O.

## Obituary Notices :—

- Harry Baker, 539.  
Harry Bowes, 169.  
Samuel Henry Clifford Briggs, 169.  
Kendall Colin Browning, 540.  
William Frederic Butcher, 541.  
Alfred Foster Chulerton, 1091.  
Harold Ward Dudley, 541.  
Charles Richmond Featherstone, 546.  
George Aleck Crocker Gough, 547.  
Max Henius, 548.  
Samuel Cox Hooper, 550.  
William Holdsworth Hurtle, 1572.  
Alfred Battye Knaggs, 1091.  
Theophilus Henry Lee, 1092.  
Arthur Dehon Little, 171.  
Harry Livsey, 1572.  
Alfred E. Macintyre, 1573.  
William Ernest Martin, 1575.  
Thomas Henry Pope, 1092.  
Charles Edward Potter, 1093.  
Francis Ransom, 548.  
Frank Scudder, 1094.  
William Stevenson, 1094.  
Philip Lewington Whitehouse, 1095.  
William Charles Young, 549.
- $\Delta^9$ -Octadecenoic acid**,  $\Delta^9$ -octadecenyl ester. See Oleic acid, oleyl ester.
- Octahydrophenanthrene**, 9-hydroxy-, 77.
- Octahydrophenazines**, 1698.  
isomeric, and their dinitroso-derivatives, 258.

**0:3:3-bicycloOctane ring**, properties of, 611.  
*cis*-**0:3:3-bicycloOctan-2-ol**, 615.  
 **$\beta$ -Octyl alcohol**, rotation of, in various solvents, 1007.  
**Oestrone methyl ether**, formyl derivative, 1851.  
**Olefins**, action of carbon monoxide and steam on, 364.  
 addition of hydrogen chloride and hydrogen iodide to, 1605.  
 complex compounds of, with metallic salts, 1042.  
**Oleic acid**, oleyl ester, hydrogenation of, 664.  
**Optical activity and tautomerism**, 623.  
 inversion, Walden's, and aliphatic substitution, 1173.  
**Optically active compounds**, influence of solvents and other factors on rotation of, 1007.  
**Orange-II**, adsorption of, at benzene-water and chlorobenzene-water interfaces, 119.  
**Organic compounds**, dipole moment and structure of, 393.  
 thermal analysis and refractivities of binary systems of, 789.  
 determination of m.p. of, 137.  
 apparatus for microhydrogenation of, 895.  
 electrolytic reduction of, 202, 574, 810.  
 exchange reactions of heavy water with, 1811.  
 containing artificial radio-elements, 390.  
 long-chain, m.p. of, 1368.  
 molecular, 1108, 1114.  
**Organo-metalloidal compounds**, formation of, by micro-organisms, 264.  
**Oroxylin-A**, constitution of, and its derivatives, 591.  
*Oroxylum indicum*, yellow colouring matter from, 591.  
**Orthoformic acid**, ethyl ester, acid hydrolysis of, 1363.  
**Osazones**, structure of, 1770.  
*Oscillatoria rubrescens*, carotenoid pigments of, 1376.  
**Ostreastanol**, identity of, with fucostanol, sitostanol, and stigmastanol, 738.  
**Oxalatobis(butylphosphine)- $\mu$ -dichloropalladium**, 885.  
**Oxalatobis(butylphosphine)- $\mu$ -dinitritodipalladium**, 886.  
**Oxalatodipyridylpalladium**, 885.  
**Oxalic acid dihydrate**, X-ray structure of, 1817.  
 salts, solubilities of, and their complexes, 1489.  
 silver salt, thermal decomposition of, 832, 839.  
 sodium and thorium salts, solubility of mixtures of, in water, 1494.  
**Oxalylmethylmalonic acid**, ethyl ester, phenylhydrazine derivatives, 1809.  
**Oxidation**, electrolytic. See under Electrolytic.  
**Oxide**, C<sub>18</sub>H<sub>20</sub>O, from methyl diphenate, 1116.  
**Oxides**, cyclic, molecular compounds of, with phenols, 1114.  
 **$\alpha$ -Oximinopropionic acid**, ethyl ester, synthesis of, 566.  
**Oxonitin**, 80.  
**Oxonium salts**, dipole moments of, 398.  
*p*-**Oxyarsinoazelaanic acid**, 903.  
*p*-**Oxyarsinosebacaanic acid**, 904.  
**Oxygen**, adsorption of, by diamond and graphite, 1261.  
**Oxylanostanetriol**, 1566.  
*dl*-**Oxysparteine**, synthesis of, 1025.  
**Ozone**, combustion of mixtures of, with nitrogen pentoxide, 1409.

## P.

**Palladium organic compounds**, tautomeric, 873.  
**Palmitic acid**, f.p. of mixtures of, with margaric acid, 627.  
**Papaverinol methochloride**, 732.  
**Parachor** of metallic carbonyls, 1283.

**Paraffins**, trichloronitrohydroxy-, esters, action of amines on, 1530.  
**Paraldehyde**, dipole moment of, in various solvents, 496.  
 depolymerisation of, 1792.  
**Paramagnetism** as test for free radicals, 440.  
**Pedler Lecture**, 1079.  
*Penicillium brevicaulis*, production of organo-metalloidal compounds by, 264.  
**2:4:4:5:5-Pentacarboxycyclopentane-1-acetic acid**, 3-hydroxy-, esters, 150.  
**Pentadecoin**, 1634.  
**Pentadenterobenzophenone**, and its oxime, 808.  
 **$\alpha$ -Pentadenterophenylbenzylamine**, resolution of, and its salts, 808.  
**cycloPentadiene**, addition of acraldehyde, benzoquinone, and  $\alpha$ -naphthaquinone to, 1029.  
 molecular forces between benzoquinone and, 432.  
**cycloPentamethylenemonobromogold**, 327.  
**Pentane**,  $\gamma\delta$ -trichloro- $\alpha$ -nitro- $\beta$ -amino-, and its derivatives, 357.  
**cycloPentanone-2-carboxylic acid**, ethyl ester, reactions of, with unsaturated methyl ketones, 1626.  
**1-cycloPentylhydrindene**, 80.  
**Perhydrophenazines**, 1698.  
**Permanganates**. See under Manganese.  
*l*- **$\alpha$ -Phellandrene**, correlation of, with *l*-4-isopropyl- $\Delta^2$ -cyclohexen-1-one, 1595.  
 catalytic dehydrogenation of, and of *l*-piperitone, 1781.  
**Phellandrenes**, 1595, 1781.  
**Phenanthrene**, hydroxy- and methoxy-derivatives of, 187.  
 9-hydroxy-, 322.  
**Phenanthrene series**, syntheses in, 317, 319, 322, 1775.  
**1-Phenanthrol-2:4-dicarboxylic acid**, 1776.  
**Phenazine series**, 258, 1698.  
**Phenol**, exchange reaction of deuterium oxide with, 1811.  
**Phenol**, *tri*- and *penta*-bromo- and -chloro-, dissociation constants of, 1713.  
*o*- and *p*-chloro-, thermal analysis and refractivity of binary systems of, with *p*-dichlorobenzene, pyridine, and *p*-toluidine, 791.  
 pyrolysis of, 1244.  
*o*-nitro-, dipole moment of, 910.  
**Phenols**, molecular compounds of, with cyclic oxides, 1114.  
*o*-nitrophenylsulphenates of, 327.  
**Phenols**, substituted, parachor, surface tension, and density of, 36.  
 3-halogeno-4-nitro-, preparation of, 1677.  
**Phenolic ethers**, parachor, surface tension, and density of, 36.  
 kinetics of acid hydrolysis of, 1341.  
 halogenation of, 1231, 1854.  
**Phenoxyacetic-2-acetic acid**, ethyl ester, 426.  
**5-Phenoxyacridine**, 3-chloro-, 1164.  
 1:3-dichloro-, 1549.  
 **$\alpha$ -2-Phenoxyethylacetoacetic acid**, and  $\alpha$ -chloro-, ethyl esters, 1556.  
**5-Phenoxy-3-methoxyacridine**, 1547.  
**5-Phenoxy-3-methylacridine**, 1-bromo-, 1549.  
*p*-**Phenoxyphenylarsonic acid**, 1238.  
*p*-**Phenoxyphenyldichloroarsine**, 1238.  
*o*- and *p*-**Phenoxyphenyldimethylarsines**, and their derivatives, 1239.  
*p*-**Phenoxyphenyltrimethylarsonium iodide**, 1239.  
**Phenyl selenocyanate**, nitration of, 1609.  
**Phenylacetic acid**, iodo-derivatives, dissociation constants of, 645.  
*m*-iodo-, 646.  
**Phenylacetyl-cyclopentane semicarbazone**, 75.

- Phenyl alkyl ketones**, acid-catalysed prototropy of, 785.
- β-p*-Phenylaminoanilinoacetic acid, ethyl ester, 858.
- 2-Phenylaminoisoindolinone-3-acetic acid**, 2-2'-amino-, lactam, and its picrate, 1106.
- β*-Phenyl-*α*-isoamylpropionamide, *β*-hydroxy-, 1481.
- Phenylarsinic acid**, *p*-amino-, derivatives of, 902.
- 22-Phenylbenzoic acid**, and its ethyl ester, 281.
- 4-Phenylbenzo-*β*-naphthaspiropyran**, coloured solutions of, 1380.
- 2-Phenylbenzopyrylium perchlorate**, dipole moment of, 399.
- 5-Phenylbenzthiazole derivatives**, unsaturation and tautomerism of, 1668.
- 5-Phenylbenzthiazole**, 1-amino-, 1671.
- 5-Phenyl-5-(4-bromophenyl)hydantoin**, 94.
- α*-Phenylbutyl alcohol, *β*-amino-, 1481.
- β*-Phenyl-*α*-isobutylpropionamide, *β*-hydroxy-, 1481.
- β*-Phenylcarbamylethylaminopropane, *γ,γ,γ*-trichloro-*α*-nitro-, 1530.
- β*-Phenylcarbamylmethylaminopropane, *γ,γ,γ*-trichloro-*α*-nitro-, 1530.
- 1-Phenyl-2-chloromethyl-1:2:3:4-tetrahydronaphthalene**, 598.
- Phenyl-4-chlorophenylacetylenediureide**, 94.
- 5-Phenyl-5-(4-chlorophenyl)hydantoin**, 94.
- 10-Phenyldecoic acid**, and its derivatives, 282.
- 8-Phenyl-2:2'-diethylthiocarbocyanine iodide**, 5:5'-*di*-bromo- and -dichloro-, 1230.
- 4-Phenyl-6:8-dimethylcoumarin**, 216.
- 4-Phenyl-3:3'-dimethyl-*αβ*-dinaphthaspiropyran**, 1382.
- 4-Phenyl-2:6-dimethylheptane-2:6-diol**, 1116.
- 3-Phenyl-2:5-dimethylhexane-2:5-diol**, 1116.
- 3-Phenyl-4:4'-dimethylphthalaz-1-one**, 4'-nitro-, 1108.
- 4-Phenyl-*αβ*-dinaphthaspiropyran**, 1380.
- Phenyl-4-diphenylacetylureide**, 94.
- 5-Phenyl-5-(4'-diphenyl)hydantoin**, 94.
- p*-Phenylenediamine, 2:6-dinitro-, preparation of, 1570.
- β*-Phenylethyl alcohol, *β*-4-bromo-, and its phenylurethane, 184.
- d-α*-Phenylethyl bromide, rate of racemisation of, 1174.
- as*-Phenylethylbenzoylurea, 1274.
- α*-Phenylethylidenediazinecarboxylic acid, isoamyl ester, 1050.
- as*-Phenylethyl-*p*-nitrobenzoylurea, 1274.
- as*-Phenylethylurea, benzoylation of, 1273.
- α*-Phenylglutaconic acid, *α-p*-chloro-, 1776.
- β*-Phenylglycerol *α,γ*-diethyl ether, 1367.
- 6-Phenylgranatan-3-one**. See Phenyl-*ψ*-pelletierine.
- 2-Phenylcyclohexanol 3:5-dinitrobenzoate**, 75.
- 2-Phenylcyclohexanol-1-acetic acid**, and its ethyl ester, 76.
- 2-Phenyl-*Δ*<sup>1</sup>-cyclohexenylacetic acid**, and its ethyl ester, 76.
- 2-Phenylcyclohexylacetic acid**, and its derivatives, 77.
- γ*-Phenylhydrazino-*n*-butane, *δδδ*-trichloro-*β*-nitro-, 1532.
- β*-Phenylhydrazinopentane, *γ,γ,δ*-trichloro-*α*-nitro-, and its acetyl derivatives, 358.
- β*-Phenylhydrazino-*α*-phenylpropane, *γ,γ,γ*-trichloro-*α*-nitro-, 1532.
- β*-Phenylhydrazinopropane, *γ,γ,γ*-trichloro-*α*-nitro-, and its derivatives, 357.
- Phenyliminobenzylcarbamic acid**, methyl ester, 432.
- (Phenyliminobenzyl)malonic acid, *o*- and *p*-chloro- and *p*-nitro-, ethyl esters, 430.
- (Phenyliminobenzyl)malonodi-*p*-toluidide, 429.
- 2-Phenylimino-1-methyl-1:2-dihydro-*β*-naphthathiazole picrate**, 1670.
- s*-(Phenyliminobenzyl)naphthylureas, 432.
- Phenyliminobenzylurethane**, and its hydrochloride, 431.
- (Phenylimino-*o*-chlorobenzyl)malonic acid, ethyl ester, 430.
- 1-Phenylimino-2-methylbenzthiazoline**, 507.
- (Phenylimino-*p*-nitrobenzyl)malonic acid, ethyl ester, 429.
- Phenyl ketones**, 2:3-*di*hydroxy-, properties of, 346.
- 1-Phenyl-3:4-(7-methoxyhexahydrophenanthreno-1':2'')pyrazole**, 5-hydroxy-, 752.
- dl-γ*-Phenyl-*α*-methylallyl alcohol, and its derivatives, 86.
- (+) and (-)*γ*-Phenyl-*α*-methylallyl alcohols, and their derivatives, 85.
- 2-Phenylmethylamino-*β*-naphthathiazole**, and its picrate, 1670.
- 4-Phenyl-3'-methylbenzo-*β*-naphthaspiropyran**, 1381.
- 2-Phenyl-3-methylbenzopyrylium perchlorate**, dipole moment of, 399.
- 5-Phenyl-2-methyl-1:2-dihydrobenzthiazole**, 1-imino-, 1671.
- 4-Phenyl-3'-methyl-*αβ*-dinaphthaspiropyran**, 1382.
- β*-Phenyl-*α*-methyl-*γ*-ethylglutaconic acid, 1806.
- Phenylmethylnitrosoamine**, 2-bromo-4-nitro-, 1749.
- 3-Phenyl-4'-methylphthalaz-1-one**, 2'-nitro-, 1107.
- 3-Phenyl-1-methylphthalaz-4-ones**, amino-, and nitro-, and their derivatives, 314.
- 2-Phenylmethylquinoline-3-carboxylic acids**, 4-hydroxy-, 430.
- 1-Phenyl-2-methyl-1:2:3:4-tetrahydronaphthalene**, 598.
- Phenyl-naphthasodiazines**, hydroxy-, 432.
- 1-Phenyl-naphthalene**, 6:7-*di*hydroxy-, 588.
- 1-Phenyl-naphthalenes**, synthesis of, 587.
- β*-Phenyl-*β*-1-naphthylpropionophenone, *α*-bromo-, 998.
- β*-hydroxy-, 993.
- Phenylnitromethane**, and *p*-bromo-, dipole moments of, in benzene, 1327.
- 1-Phenyl-4-(2':4'-dinitrophenyl)-3-methyl-5-pyrazolone**, 1713.
- Phenyl-*ψ*-pelletierine**, and its 2:4-dipiperonylidene derivative, 287.
- 15-Phenylpentadecic acid**, 281.
- 10-Phenylphenoxarsine-2-carboxylic acid**, resolution of, and its phenylethylamine salts, 730.
- 10-Phenylphenoxarsine-10-oxide-2-carboxylic acid**, 730.
- Phenyl *β*-phenyl-*β*-1-naphthylvinyl ketone**, 993, 998.
- 3-Phenylphthalaz-4-ones**, 2'-amino-, and 2'-nitro-, and their derivatives, 312.
- α*-Phenylpropane, *γ,γ,γ*-trichloro-*α*-nitro-*β*-hydroxy-, and its acetyl derivative, 1294.
- β*-Phenylpropionic acid, *p*-bromo-, methyl ester, 406.
- Phenyl-*n*-propylcarbinol**, resolution of, 128.
- 2-Phenylquinazolines**, 4-hydroxy-, synthesis of, 431.
- 2-Phenylquinoline-3-carboxylic acid**, chloro-4-hydroxy-, 4-hydroxy-2-*o*-chloro-, and -2-*p*-nitro-, and 6-nitro-4'-hydroxy-, and their ethyl esters, 429.
- 4-hydroxy-, *p*-toluidide, 429.
- Phenylsulphonic acid**, *o*-nitro-, phenyl esters of, 327.
- Phenylsulphonylacetylureide**, 2-nitro-, 330.
- Phenylsulphonylaceto-*m*-nitroanilide**, 2-nitro-, 330.
- 2-Phenylsulphonyl-5-*m*-nitrophenylsulphonylbenzene**, 1-nitro-, 221.
- β*-Phenylsulphonylpropionanilide, *β*-2-nitro-, 330.
- Phenylsulphonyl-*p*-tolylsulphonylbenzenes**, nitro-, 221.
- 1-Phenyl-1:2:3:4-tetrahydro-2-naphthoic acid**, and its ethyl ester, 597.
- 1-Phenyl-1:2:3:4-tetrahydronaphthyl-2-acetic acid**, 598.
- 1-Phenyl-1:2:3:4-tetrahydro-2-naphthylcarbinol**, 598.
- 3-Phenyl-2:2:5:5-tetramethyltetrahydrofuran**, 1116.
- 4-Phenyl-2:2:6:6-tetramethyltetrahydropyran**, 1116.
- Phenylthioacetamide**, 2-nitro-, 330.
- Phenylthioacetanilide**, 2-nitro-, 330.
- Phenylthioaceto-*m*-nitroanilide**, 2-nitro-, 330.
- 2-Phenylthiobenzamide**, 2-*o*-nitro-, 330.

- 2-Phenylthiobenzanilide**, 2-*o*-nitro-, 331.  
**1-Phenylthiocarbamylimino-2-methylbenzthiazoline**, 507.  
 **$\beta$ -Phenylthiopropionic acid**,  $\beta$ -2-nitro-, and its anilide, 330.  
**Phenyl-*p*-tolylacetylenediureide**, 95.  
**5-Phenyl-5-*p*-tolylhydantoin**, 95.  
**Phenyl-*p*-tolyl ketoxime picryl ethers**, 451.  
**Phenyl-*o*-4-xylylacetylenediureide**, 94.  
**5-Phenyl-5-4'-xylylhydantoins**, 94.  
**Phloroglucinol methyl ether di-*p*-nitrobenzoate**, 631.  
**Phosphorus** :—  
**Phosphates**, 1412.  
**Pyrophosphates**, and their hydrates, 1413.  
**Phosphoryl chloride**, dipole moment of, 158.  
 as condensing agent, 426.  
**Photochemical processes**, primary, 1580.  
 free radicals and atoms in, 253, 1777.  
**Phrenosinic acid**. See Cerebronic acid.  
**Phthalic acid**,  $\alpha$ -dimethylallyl esters, optically active isomeric, 582.  
*iso*Phthalic acid, 5-nitro-, and its derivatives, 1111.  
**Phthalideacetic acid**, 1104.  
**Phthalimide**, dipole moment of, 47.  
 **$\gamma$ -Phthalimidobutaldehyde**, and its 2:4-dinitrophenylhydrazones, 352.  
 **$\gamma$ -Phthalimidobutyric acid**, and its amide and nitrile, 353.  
**Phthalocyanine**, metallic derivatives of, 1719.  
**Phthalocyanine**, chloro-, metallic salts, 1729.  
**Phthalocyanines**, 1719, 1744.  
 X-ray structure of, 1195.  
 metallic salts, stereochemistry of, 1736.  
**Phthalo- $\alpha$ -naphthylimide**, and its chloro- and nitro-derivatives, 1845.  
**Phthalonaphthylimides**, nitration of, 1844.  
**Picolinic acid**, metallic salts, 779.  
 **$\alpha$ -Picolyisoquinolines**, synthesis of, 610.  
**Picric acid**, chromic salt, 861.  
**Picrotone**, 288.  
**Picrotonol**, 288.  
**Picrotoxin**, 288.  
**Picrotoxinin**, 291.  
**Picryl chloride**, condensation of, with 4-methylthiazole and benzthiazole, 1607.  
**2-Picryl-1:2-dihydrobenzthiazole**, 1-hydroxy-, 1608.  
**3-Picryl-4-methyl-2:3-dihydrothiazole**, 2-hydroxy-, 1608.  
**Piperidine**, salts of, with lower fatty acids, and their properties, 1346.  
**Piperidine-2-acetic-1- $\beta$ -propionic acid**, methyl ester, 1430.  
**Piperidinodiphenylsulphones**, chloronitro-, and nitro-, 219.  
 **$\beta$ -Piperidinoethyl dibutylcarbinol**, 402.  
**4-Piperidino-4'-methyl diphenylsulphone**, 3-nitro-, and 3:3'-dinitro-, 220.  
 **$\beta$ -Piperidinotriethylcarbinol**, 402.  
**Piperitone**, 1598.  
*l*-Piperitone, catalytic hydrogenation of, and of *l*- $\alpha$ -phellandrene, 1781.  
**Piperonylhydrazine**, 584.  
**Piperonylidenediformamide**, 6-nitro-, 198.  
**Piperonylidenehydrazinecarboxylic acid**, isoamyl ester, 1050.  
**Pivalic acid**, synthesis of, 362.  
**Platinum**, velocity of adsorption by, of deuterium and of hydrogen, 1542.  
*Podocarpus spicatus*, resinol from, 724.  
**Polarimetry**, low-temperature, apparatus for, 180.  
**Polarisation**, dielectric, 45, 47, 158, 1175, 1178, 1182, 1184.  
**Pomegranate seeds**, triene acid from, 1809.
- Potassium auribromide dihydrate** and aurichloride, 1636.  
 azide, thermal decomposition of, 657.  
 hydroxide, additive compounds of, with carbonyl hydrates, 1765.  
 permanganate, oxidation of cyclic compounds by, 368.  
**Potassium organic compounds** :—  
**Potassium cuprocyanide**, 778.  
 indenetrichloroplatinite, 1047.  
 styrenetrichloroplatinite, 1048.  
**Potassium determination** :—  
 determination of, in insoluble silicates, 1390.  
**Potatoes**, sprouting, solanidine in, 1299.  
**Propaldehyde**, influence of hydrogen on decomposition of, 818.  
 thermal decomposition of, 812.  
**Propane**, *s*-pentachloro-, preparation of, 782.  
 **$\beta$ γγγ-tetrachloro- $\alpha$ -nitro-**, reactions of, with phenylhydrazine, *p*-toluidine, and ammonia, 800.  
**γγγ-trichloro- $\alpha$ -nitro- $\beta$ -amino-**, and its derivatives, 356.  
**γγγ-trichloro- $\alpha$ -nitro- $\beta$ -hydroxy-**,  $\beta$ -*p*-nitrobenzoyl derivative, 1531.  
**Propanal**, γγγ-trichloro- $\alpha$ -nitro- $\beta$ -hydroxy-, *p*-chlorophenylhydrazones, 1694.  
**Propionic acid**, synthesis of, 358.  
**Propionic acid**,  $\beta$ -chloro-, ethyl ester, Grignard reactions with, 401.  
**Propionitrile**, polarisation and moment of, in various solvents, 1193.  
**3-Propionyl-6:8-dimethyl-2-ethylchromone oxime**, 217.  
**Propionyltyrosine**, *a*-bromo-, dissociation constants of, 1713.  
**4-Propoxyacetophenone**, 2-hydroxy-4- $\gamma$ -chloro- $\beta$ -hydroxy-, and 2-hydroxy-4- $\beta$ - $\gamma$ -dihydroxy-, and its derivatives, 590.  
**4-isoPropoxyanisole**, and its nitro-derivatives, 1150.  
*n*-Propyl, free, 253.  
*iso*Propyl, free, from diisopropyl ketone, 1777.  
*iso*Propyl bromide, hydrolysis of, 225.  
*a*-*iso*Propylglutaric acid, *a*-bromo-, ethyl ester, 596.  
*l*-4-*iso*Propyl- $\Delta^2$ -cyclohexen-1-ol, 1597.  
*l*-4-*iso*Propyl- $\Delta^2$ -cyclohexen-1-one, and its 2:4-dinitrophenylhydrazones, 1596.  
*l*-4-*iso*Propyl- $\Delta^2$ -cyclohexenyl mono- and di-nitrobenzoates, 1597.  
*iso*Propylidene-2-methyl  $\gamma$ -methylglucosides, 186.  
1-*iso*Propylcyclopropane-1:2-dicarboxylic acid, and its ethyl ester, 828, 830.  
*cis*- and *trans*-*dl*-1-*iso*Propylcyclopropane-1:2-dicarboxylic acids, synthesis of, and their derivatives, 828, 830.  
**1-Propylpyridinium salts**, 691.  
**3-*n*-Propyl- $\beta$ -resorcyaldehyde**, 279.  
**3-*n*-Propylresorpiophenone**, 277.  
**7-*iso*Propyl-1:2:3:4-tetral-1-one** 2:4-dinitrophenylhydrazones, 676.  
**Prototropy** in relation to hydrogen isotope exchange, 1550.  
*Psylla buxi*, wax of, 1241.  
**Punicic acid**, 1810.  
**Purine nucleosides**, constitution of, 765.  
**Pyridine**, thermal analysis and refractivity of mixtures of, with chlorobenzene, and with *p*-chlorophenol 791.  
 action of, with alkyl chlorosulphates in ethereal solution, 688.  
 influence of solvents on reaction of, with methyl iodide, 1353.  
 reaction of, with *o*-nitrobenzyl bromide, 399.  
**Pyridinium chloride**, compound of, with tetraphenylglycol, 1571.

**Pyridyl-2-aceto-3':4'-methylenedioxy- $\beta$ -phenylethylamide**, 610.

*s*-2-Pyridyl-5-acridylethene dimethiodide, 1486.

*s*-(2-Pyridyl ethiodide)-5-acridylethene, 1486.

*s*-(2-Pyridyl ethiodide)-(5-acridyl methiodide)ethene, 1486.

*s*-(2-Pyridyl methiodide)-5-acridylethene, and its hydrochloride, 1486.

3-Pyrimidylthiazolium salts, synthesis of, 1559.

**Pyrone series**, 295.

**Pyrophosphates**. See under Phosphorus.

**Pyrosulphates**. See under Sulphur.

## Q.

**Quinazoline derivatives**, 196.

**Quinol**, 2-nitro, allyl and diallyl ethers, 281.

**Quinoline**, additive compound of, with iodoform, 1577.

*s*-2-Quinolyl-5-acridylethene dimetho-salts, 1486.

*s*-(2-Quinolyl ethiodide)-(5-acridyl methiodide)ethene, 1487.

*s*-(2-Quinolyl methiodide)-5-acridylethene, and its hydrochloride, 1486.

## R.

**Radicals**, free, paramagnetism as test for, 440.

in primary photochemical processes, 253, 1777.

**Radioactive elements**, artificial, electric field concentration of, 384.

production of organic compounds containing, 390.

**Radioactivity** and atomic theory, 508.

**Reactions**, aromatic side-chain, in relation to polar effects of substituents, 236, 1448.

bimolecular, in solution, 371.

and in the gaseous state, kinetics of, 1028.

chain, detection of, with nitric oxide, 812.

migration, in polycyclic systems, 802.

unimolecular chain, influence of hydrogen on, 818.

**Report of the Council**, 519.

**Resacetophenone glycerol ethers**, 589.

**Resins**, natural phenolic, constituents of, 348, 725, 745, 998.

**Resinols**, surface films of, 1585.

**Resorcinol di-*p*-nitrobenzoate**, 1830.

**Resorcinol**, 4-nitro-, and its 1-*O*-allyl ether, 280.

**Resorcylmethyleneformamidine hydrochloride**, 185.

***N*-Rhamnosidoglyoxaline**, 506.

**Rotation** of optically-active compounds, influence of solvents and other factors on, 1007.

**Rotenone**, synthesis of, and its derivatives, 212, 419, 1832.

analogues of, 423.

**Ruberythric acid**, 1701.

**Rubiadin primveroside**, 1714.

**Ruthenium bases** :—

**Bromotetramminohydroxoruthenium** bromide hydrate, 43.

**Chloronitratotetramminoruthenium** nitrate tetrahydrate, 43.

**Chlorotetramminohydroxoruthenium salts**, 43.

**Dibromotetramminoruthenium** bromide hydrate, 43.

**Dichlorotetramminoruthenium** chloride dihydrate, 43.

**Di-iodotetramminoruthenium** iodide, 44.

**Iodotetramminohydroxoruthenium** iodide, 44.

**Ruthenium compounds**, co-ordination bivalent, optical activity of, 173.

**Ruthenium trichloride**, preparation of, and its compound with ammonia, 43.

“**Ruthenium red**,” constitution of, 41.

## S.

**Salicylaldehyde**, condensation of, with deoxybenzoin, 806.

**Salicylic acid**, condensation of, with chloral, 554.

**Salicylidenedeoxybenzoin**, 807.

**Salts**, catalytic oxidation of, with charcoal, 1688.

*Santalum lanceolatum*, lanceol from oil of, 1619.

**Sapogenins**, 1399.

**Sarsaparilla root**, sapogenins of, 1399.

**Sarsasapogenins**, and their derivatives, 1402.

**Sebacanilamide-*p*-arsonic acid**, and its sodium salt, 904.

**Sebacanilic acid**, and its methyl ester, 905.

**Sebacanilide-*p*-arsonic acid**, and its sodium salt, 904.

**Sebacanilide-*pp'*-diarsonic acid**, and its sodium salt, 905.

**Sebacanilodimethylamide-*p*-arsonic acid**, and its sodium salt, 904.

**Sebacanilomethylamide-*p*-arsonic acid**, and its sodium salt, 904.

**Sebacic acid**, esters, acid chlorides of, 904.

**Selenium dioxide**, action of, on sterols and bile acids, 462.

**Semicarbazones**, reaction of, with alcohols, 1050.

**Senecic acid**, oxidation of, 745.

**Senecio**, alkaloids of, 743.

**Senecionine**, and its salts, 743.

**Sesquiterpene series**, syntheses in, 1137.

**Silica gel** impregnated with iron, preparation of, and use as catalyst in chlorination, 338.

**Silicon hydrides**, oxidation of, 677.

**Silicates**, insoluble, determination in, of lithium, 1395.

of potassium and sodium, 1390.

**Silicon determination** :—

determination of, in insoluble silicates, 1390.

**Silver**, stereochemistry of, 775.

**Silver chloride**, determination of, volumetrically, 1049. halides, detection of, in presence of silver cyanide, 1050.

nitrate, reactions of, with organic bases, 96.

**Silver ions**, anion affinity of, 1121.

**Sitostanol**, identity of, with fucostanol, ostreastanol, and stigmastanol, 738.

**Skatole**, dipole moment of, 47.

**Smilagenin**, and its derivatives, 1402.

**Smilagenone**, 1403.

**Smilagenyl chloride**, 1403.

*Simmondsia californica*, seed wax of, 1750.

**Sodium azide**, thermal decomposition of, 657.

**Solanidine** in sprouting potatoes, 1299.

**Solanocapsidine**, 1541.

**Solanocapsine**, and its derivatives, 1540.

*apoSolanocapsine*, 1540.

*Solanum pseudocapsicum*, alkaloids from, 1537.

**Solubility** of non-electrolytes, 1171.

**Solutions**, bimolecular reactions in, 371.

kinetics of complex formation in, 101.

**Sorbic acid**, catalytic hydrogenation of, at nickel and platinum cathodes, 574.

electrolytic reduction of, 202.

**Spectra**, absorption, of dipole association products, 1576.

**Squalidine**, 743.

**Squalineic acid**, 745.

**Stearic acid**, f.p. of mixtures of, with margaric acid, 627.

sols, ionic interchange in, 1317.

**Stereochemistry**, new methods in, 1222.

**Sterols**, action of selenium dioxide on, 462.

synthesis of compounds related to, 50, 52, 54, 192, 747, 752, 757, 759, 763.

synthesis of polycyclic compounds related to, 187.

**Sterol group**, 737, 738, 905, 907, 1274, 1437.  
**Sterol- $\alpha$ strone group**, 1848.  
**Stigmastanol**, identity of, with fucostanol, ostreastanol, and sitostanol, 738.  
**Strobinin**, 1036.  
*Strophanthus emini*, glucosides of, 442.  
**Strychnine**, alkaline degradation of, 1695.  
**Styrene**, 2-amino-, ring closure of derivatives of, 181. isomerides and derivatives of, 183.  
**Styrylpyrylium salts**, 1380.  
**Substitution at saturated carbon atoms**, 225. aliphatic, and the Walden inversion, 1173. aromatic, relative directive power of groups in, 1148.  
**Succinimide**, dipole moment of, 47.  
**Sugars**, crystalline structure of, 769.  
**Sulphinic acid**, 2:4-dibromobenzenediazonium salt, 1244.  
**Sulphonyl chlorides**, aromatic, dipole moments of, 1182.  
**Sulphur**, velocity of reaction of, with hydrogen, 454.  
**Sulphur nitride**, formation and constitution of, 1645.  
**Sulphuric acid**, surface tension of mixtures of, with ether and with nitrobenzene, 684. equilibrium of, with nitrobenzene and water, 1571. hydrogen exchange of, with paraffins, 1643.  
**Sulphites**, action of, on pyrosulphates, 1569.  
**Pyrosulphates**, action of, on sulphites, 1569.  
**Dithionates**, formation of, from pyrosulphates and sulphites, 1569.  
**Synthesis**, asymmetric, mechanism of, 1313.  
**Systems**, polycyclic, migration reactions in, 802.

## T.

**Tautomerism and optical activity**, 623. keto-lactol, 570.  
**Tectoerysin**, 268.  
**Telfairic acid**, 399.  
**Terpenes of the thujane series**, structure of, 829.  
**Terpene compounds**, 1852.  
**Tetra-acetoglucoSIDoglyoxaline**, 505.  
**Tetra-alkylammonium salts**, conductivity of, in aqueous hydrogen cyanide, 1495.  
**Tetra-anisylpyrrole**, 400.  
**Tetracosanoic acid**, and 2-bromo-, and 2-hydroxy-, 283.  
**Tetraethoxytitanium**, 638.  
**Tetraethylaminoruthenium chloride**, dichloro-, 44.  
**Tetraethyl-lead**, vapour-pressure curve of, 1567.  
**Tetrahydrocarbazole**, 5-amino-, and its acetyl derivative, 900. 5- and 7-nitro-, 899.  
**Tetrahydrocarbazoles**, 7-substituted, 40.  
**Tetrahydro- $\alpha$ -cyperone**, and its derivatives, 671.  
**Tetrahydrofurfuryl bromide**, preparation of, and its reaction with magnesium, 195.  
**5:6:7:8-Tetrahydro- $\beta$ -naphthathiazole derivatives**, unsaturation and tautomerism of, 1668.  
**5:6:7:8-Tetrahydro- $\beta$ -naphthathiazole**, 2-amino-, 1671.  
*s-ar-Tetrahydro- $\alpha$ -naphthylmethylthiourea*, 1671.  
*ar-Tetrahydro- $\alpha$ -naphthylthiocarbimide*, 1671.  
*ar-Tetrahydro- $\alpha$ -naphthylthiourea*, 1671.  
**3:9:10:11-Tetrahydro-1:2-cyclopentanophenanthrene**, 764.  
**Tetrakis(bromotriethylarsinecopper)**, 1508.  
**Tetrakis(iodotriamylphosphinecopper)**, 1507.  
**Tetrakis(iodotributylarsinecopper)**, 1508.  
**Tetrakis(iodotributylphosphinecopper)**, 1507.  
**Tetrakis(iodotriethylarsinecopper)**, 1508.  
**Tetrakis(iodotriethylphosphinecopper)**, 1507.  
**Tetrakis(iodotrimethylarsinecopper)**, 1508.  
**Tetrakis(iodotripropylarsinecopper)**, 1508.  
**Tetrakis(iodotripropylphosphinecopper)**, 1507.  
**Tetrakisithioacetamide-argentous chloride**, 779.  
**Tetrakisithioacetamide-cuprous chloride**, 778.  
**Tetralin**, 6:7-dibromo-, 1537.  
**Tetralins**, bromo-, dipole moments and structure of, 1532.  
**2-(5'-Tetralyl)cyclohexanol**, 1433.  
**2-(5'-Tetralyl)cyclohexanone semicarbazone**, 1433.  
**1-(5'-Tetralyl)- $\Delta^1$ -cyclohexene**, 1433.  
**2:3:4:6-Tetramethoxyphenanthrene**, 9-amino-, and its acetyl derivative, 1234, 1236.  
**2:3:4:6-Tetramethoxyphenanthrene-9-carboxylic acid**, 1235.  
**Tetramethoxytitanium**, 638.  
**2:3:5:8-Tetramethylchromone**, 427.  
**2:3:6:8-Tetramethylchromone**, 216.  
**Tetramethyl-*p*-phenylenediamine**, 2:6-dinitro-, 1570.  
**aaa'a'-Tetramethylphthalan**, 1116.  
**Tetramminoplatinous styrenetrichloroplatinite**, 1047.  
**Tetraphenylygcol**, compound of, with pyridinium chloride, 1571.  
**Tetraphenylpyrrole**, *tetra-p*-hydroxy-, and its acetyl derivative, 400.  
**2:3:4:5-Tetraphenylthiophen**, reduction of, 505.  
**Tetrapyridinoruthenium chloride**, dichloro-, 44.  
**Thallium compounds**, application of, in organic chemistry, 1678.  
**Thallium organic compounds** :—  
**Thallos propylacetone**, 1681.  
**5-Thioacetamido-4-methyluracil**, 1557.  
**Thioacetanilide**, 4-chloro-, 1228.  
**Thiochrome**, synthesis of, 1601.  
**8-Thio-6-ethylpurine**, 1562.  
**5-Thioformamido-4-ethylpyrimidine**, 6-amino-, 1558.  
**5-Thioformamido-4-methylpyrimidine**, 6-amino-, and 2:6-diamino-, 1558.  
**5-Thioformamido-4-methyluracil**, 1558.  
**5-Thioformamidopyrimidines**, 1557.  
**8-Thiopurine**, 2:6-dihydroxy-, 1561.  
**Tin**, extraction of indium from, 1290.  
**Titanium organic compounds**, 637.  
**Tolan**, 2:2'-dichloro-, dichloride, 338.  
***o*-Tolualdehyde 2:4-dinitrophenylhydrazone**, 353.  
**Toluene**, chlorination of, in presence of activated charcoal and of iron-impregnated silica gel, 337.  
**Toluene**, 3:4-dithiol, 178.  
**Toluene series**, 691, 696, 707.  
***p*-Toluenesulphinic acid**, benzenediazonium and 4-*mono*- and 2:4-*di*-bromobenzenediazonium salts, 1242.  
**Toluenesulphinic acids**, *mono*- and *di*-chloro-, and their salts and derivatives, 693.  
**Toluenesulphinyl chlorides**, dichloro-5-nitro-, 710.  
*N-( $\beta$ -*p*-Toluenesulphonamidoethyl)ethylenediamine dihydrochloride*, 1519.  
*p*-Toluenesulphonylbenzyl-*l*-menthylamide, 1224.  
*p*-Toluenesulphonic acid, 4-bromophenylhydrazine salt, 1243.  
**Toluenesulphonic acids**, *mono*- and *di*-chloro-, and their salts and derivatives, 693. dichloro-, chloroamino-, and chloronitro-derivatives, and their salts and derivatives, 701, 709.  
*d-(+)-p*-Toluenesulphonoxypropionic acid, and its amide and derivatives, Walden inversion of, 303.  
*p*-Toluenesulphonyl-4-bromophenylhydrazine, 1243.  
*p*-Toluenesulphonyl-2:4-dibromophenylhydrazine, 1242.  
*p*-Tolnic acid, 2-cyano-, 1625.  
*p*-Toluidine, thermal analysis and refractivity of binary systems of, with *o*- and *p*-chlorophenols, 791. *o*- and *p*-chlorophenoxides, equilibrium constants of, in benzene and *p*-dichlorobenzene, 1303.

*γ-p*-Toluidine-*n*-butane, δδζ-trichloro-β-nitro-, 1531.  
*p*-Toluidinobutylarsinepalladium, dichloro-, 888.  
*p*-Toluidinobutylphosphinepalladium, dichloro-, 888.  
*γ-p*-Toluidino-*n*-hexane, δδε-trichloro-β-nitro-, 1531.  
*β-p*-Toluidinopentanal, γγδ-trichloro-*a*-nitro-, phenyl-hydrazone, 1694.  
*β-p*-Toluidinopentane, γγδ-trichloro-*a*-nitro-, 357.  
*β-p*-Toluidino-*a*-phenylpropane, γγγ-trichloro-*a*-nitro-, 1531.  
*β-p*-Toluidinopropanal, γγγ-trichloro-*a*-nitro-, phenyl- and tolyl-hydrazones, 1694.  
*β-p*-Toluidinopropane, γγγ-trichloro-*a*-nitro-, 357.  
*r-p*-Toluoylphenylcarbinol, 95.  
*p*-Toluoyl-*N*-picrylanilide, 451.  
*o*-Tolylacetonitrile-3-carboxylic acid, 292.  
 2-(4'-Tolylamino)isoindolinone-3-acetic acid, 2-2'-nitro-, synthesis of, and its derivatives, 1098.  
 3-4-Tolyl-3-4-dihydrophthalazine-4-acetic acid, 1-hydroxy-3-2'-amino-, and its lactam, 1107.  
 1-hydroxy-3-2'-nitro-, and its methyl ester, 1106.  
 3-4-Tolyl-3-4-dihydrophthalazine-1-sulphonic-4-acetic acid, 3-2'-nitro-, sodium hydrogen salt, 1106.  
*β-p*-Tolylhydrazinopropane, γγγ-trichloro-*a*-nitro-, and its diacetyl derivative, 357.  
 Tollylminobenzylmalonic acids, and their ethyl esters, 430.  
 2-4-Tolylisoindolinone-3-acetic acid, 2-2'-amino-, and its derivatives, 1105.  
 1-*o*-Tolyl-2-methylcyclohexanol, 321.  
*β*-Tolyl-*a*-methylpropionic acids, 58.  
*γ-*o**-Tolyl-*a*-methyl-β-isopropylbutyric acid, ethyl ester, 675.  
 1-*o*-Tolyl-naphthalene, 1434.  
 Toxicaric acid, 213.  
 Triacetorhamnosidoglyoxaline, 506.  
 Triacetyl glucal, rotatory dispersion of, 1404.  
 Triaminobutylphosphinepalladium dichloride, 888.  
 Trianhydroemicymarigenin, 444.  
 Tricarboxydimethoxydiphenyl ethers, 1278.  
 2:4:5-Tricarboxycyclopentane-1-acetic acid, and 3-hydroxy-, and their derivatives, 151.  
 Tricosanoic acid, and its derivatives, 283.  
 crystallography of, 717.  
 Tridecain, 1634.  
 Triethoxychlorotitanium, 639.  
 2:4:6-Triethylbenzene, 1:3:5-trinitro-, dipole moment of, 862.  
 Triethylcarbinol, β-chloro-, 402.  
 2:2':8-Triethylthiocarbocyanine iodide, 5:5'-dibromo- and -dichloro-, 1230.  
 1:2:3-Triketotetramethylcyclopentane, and its derivatives, 269.  
 Trimesic acid, and its trichloride, 1111.  
 3:4:5-Trimethoxyacetophenone, ω-chloro-, and ω-hydroxy-, acetyl derivative, 589.  
 3:4:5-Trimethoxybenzaldehyde, 2-nitro-, 1235.  
 2:3:4-Trimethoxybenzhydrol, 348.  
 2:3:4-Trimethoxybenzophenone, 348.  
 β-(3:4:5-Trimethoxybenzoyl)malonic acid, 589.  
 α-(3:4:5-Trimethoxybenzoyl)-β-(3:4-methylenedioxybenzyl)butyrolactone, 351.  
 α-(3:4:5-Trimethoxybenzoyl)-β-(3:4-methylenedioxybenzyl)butyrolactone-*a*-carboxylic acid, ethyl ester, 351.  
 β-(3:4:5-Trimethoxybenzoyl)propionic acid, 589.  
 β-(3:4:5-Trimethoxybenzoyl)-*a*-veratrylidenepropionic acid, lactone, 589.  
 3:4:5-Trimethoxy-*α-p*-methoxyphenylcinnamic acid, 2-amino-, and 2-nitro-, 1235.  
 2:4:6-Trimethoxy-3-methylcinnamic acid, 633.  
 2:4:6-Trimethoxy-3-methyldihydrocinnamic acid, 633.  
 1:3:3-Trimethyl-2-β-acetanilidovinylindoleninium perchlorate, 1711.

*αγγ*-Trimethylallyl alcohol, resolution of, and its derivatives, 1451.  
 1:3:3-Trimethyl-2-β-anilinovinylindoleninium perchlorate, 1711.  
 2:5:8-Trimethylchromone, 427.  
 2:6:8-Trimethylchromone, 216.  
 3':5':6'-Trimethyldiphenyl sulphide, 2-nitro-2'-hydroxy-, and its acetyl derivative, 328.  
 2:5:8-Trimethyl-3-ethylchromone, 427.  
 2:6:8-Trimethyl-3-ethylchromone, 216.  
 4:6:8-Trimethyl-3-ethylcoumarin, 216.  
 β-(2:2:6-Trimethyl-Δ<sup>6</sup>-cyclohexenyl)-βζ-dimethyl-Δ<sup>αγγ</sup>-octatetraene-*a*-carboxylic acid, esters, 562.  
 β-(2:2:6-Trimethyl-Δ<sup>6</sup>-cyclohexenyl)-βζ-dimethyl-Δ<sup>αγγ</sup>-octatriene-*a*-carboxylic acid, δ-hydroxy-, ethyl ester, 563.  
 (1:3:3-Trimethyl-2-indolenino)(1'-methoxy-3'-[2'':6''-dichloro-4''-nitrophenyl]-3':4'-dihydro-4'-phthalazino)carbocyanine perchlorate, 1711.  
 (1:3:3-Trimethyl-2-indolenino)(1'-methoxy-3'-[4'-nitrophenyl]-3':4'-dihydro-4'-phthalazino)carbocyanine perchlorate, 1711.  
 (1:3:3-Trimethyl-2-indolenino)(1'-methoxy-3'-*p*-nitrophenyl-3':4'-dihydro-4'-phthalazino)cyanine perchlorate, 1710.  
 2:2:4-Trimethylcyclopentan-1-one-4-carboxylic acid, and its derivatives, 1853.  
 2:2:4-Trimethylcyclopentan-1-one-4:5-dicarboxylic acid, ethyl ester, 1853.  
 α:α:4-Trimethylphthalide-3-acetic acid, 291.  
 Triphenylmethyl, *tri-p*-nitro-, paramagnetism of, 441.  
 Tris-2:2'-dipyridylruthenous hydroxide, and its salts, 173.  
 Tubocurarine, 1276.  
 Tyramine, dissociation constants of, 1713.

## U.

Umbellularic acid, synthesis of, 829.  
 Undecenoic acid, addition of hydrogen chloride and hydrogen iodide to, 1605.  
 Undecioic acid, 10- and 11-chloro- and -iodo-, 1605.  
 Undecoin, 1634.  
 Unsaturated compounds, 1809.  
 with halogen attached to ethylenic carbon, 1169.  
 Urethanes, condensation of, with anilide imido-chlorides, 431.  
 5-Urethanomethyl-2-methylpyrimidine, 4-hydroxy-, 1603.  
 Usnic acid, 1834.

## V.

Valeric acid, *p*-bromophenacyl ester, 1484.  
*n*-Valerophenone 2:4-dinitrophenylhydrazone, 788.  
 Vapours, theory of condensation of, on finely-divided solids, 1799.  
 Vasicine, structure of, 196.  
 electrolytic reduction of, 686, 1570.  
 Velocity of reaction, relation of, to ionisation constants, 436.  
 influence of solvents on, 723, 1353.  
 in solution, influence of alkyl groups on, 785.  
 of enantiomers with a common optically active reagent, 1219.  
 Veratrine alkaloids, 414.  
 β-Vinylacrylic acid, electrolytic reduction of, 810.  
 5-Vinylbenzoic acid, 2-hydroxy-5-ββ-dichloro-, 556.  
 Vitamin-A, synthesis of, 561.

## W.

Walden inversion and aliphatic substitution, 1173.  
Water, heavy. See Deuterium oxide.

## X.

Xanthoxyletin, 627.  
apoXanthoxyletin, and its derivatives, 632.  
*Xanthoxylum Americanum*, constituents of the bark  
of, 627, 1828.  
Xanthyletin, 1828.  
*s-p*-Xenylmethylthiourea, 1671.

Xylene- $\beta$ -apocholic acid, 468.  
*m*-4-Xylenol, chromones and coumarins from, 215.  
 $\beta$ -*p*-Xylidinocrotonic acid, ethyl ester, 858.

## Z.

*Zanthoxylum Americanum*. See *Xanthoxylum Americanum*.  
Zeise's salt, homologues of, 1042.  
Zinc pyrophosphates, 1425.  
Zinc organic compounds, complex, containing sulphur,  
175.  
Zinc ions, anion affinity of, 1121.