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X-RAY BIBLIOGRAPHY

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The structures of the following compounds appeared in:

J. Amer. Chem. Soc., Vol. 97, No. 7, April 2, 1975
(i) Hexakis(methylisocyanide)dipalladium(I), $[Pd_2(CNCH_3)_6][PF_6]_2$

J. Amer. Chem. Soc., Vol. 97, No. 8, April 16, 1975
(i) Bis[(tetramethylethylenediamine)lithium(I)]anthracenide, $\{Li[(CH_3)_2N(CH_2)_2N(CH_3)_2]\}_2C_{14}H_{10}$
(ii) (Diphenyldipyrazolylborato)(2-methylallyl)dicarbonylmolybdenum, $[(C_6H_5)_2B(pz)_2](CO)_2$(2-methylallyl)Mo
(iii) Bridging and terminal *o*-benzoquinone coordination, hexakis(tetrachloro-1,2-benzoquinone)dimolybdenum, $Mo_2(O_2C_6Cl_4)_6$

J. Amer. Chem. Soc., Vol. 97, No. 9, April 30, 1975
(i) Interaction of metal ions with 8-azapurines
(ii) Tetrachlorobis-2-[(5-amino-4-carboxamidinium)[1,2,3]-triazole]copper-(II) monohydrate, $[CuCl_4(N_6C_3H_7)_2].H_2O$

J. Amer. Chem. Soc., Vol. 97, No. 10, May 14, 1975
(i) $\alpha,\beta,\gamma,\delta$-Tetraphenylporphinatoiron(II), Fe(TPP)
(ii) μ-(Acetyl-*O*:*C*)-μ-(benzoyl-*O*:*C*)-μ-(diphenylphosphido-*P*)tricarbonyl-[η^5-cyclopentadienyl)iridium(III)]manganese hemibenzene, $(\eta^5\text{-}C_5H_5)Ir\text{-}\mu[C(C_6H_5)O]\text{-}\mu\text{-}[C(CH_3)O]\text{-}\mu\text{-}[P(C_6H_5)_2]\text{-}Mn(CO)_3 \cdot \frac{1}{2}C_6H_6$
(iii) Heptakis(*tert*-butyl isocyanide)molybdenum(II) hexafluorophosphate — a seven-coordinate complex with C_{2v} mono-capped trigonal prismatic geometry
(iv) Tetrakis(2,2,6,6-tetramethyl-3,5-heptanedionato)niobium(IV), a square antiprismatic M(bidentate)$_4$ stereoisomer

J. Amer. Chem. Soc., Vol. 97, No. 11, May 28, 1975
(i) $PcSi[OSi(CH_3)_3]_2$, Pc = phthalocyanine
(ii) σ- vs. π-Bonded organoactinides. Tris(η^5-cyclopentadienyl)-η^1-2-methylallyluranium(IV), $(C_5H_5)_3[CH_3C(CH_2)_2]U^{IV}$

(iii) Reactions of metal carbonyl anions with methyl organometallic compounds, *cis*-$(CO)_5MnRe(CO)_4C(OCH_3)CH_3$
(iv) Reactions of metals with vitamins, I. Crystal and molecular structure of thiaminium tetrachlorocadmate monohydrate, $CdCl_4C_{12}H_{20}N_4O_2S$
(v) Manganese(II) porphyrins, Mn(TPP)(1-MeIm). THF

J. Amer. Chem. Soc., Vol. 97, No. 12, 1975
(i) Reaction of coordinated purines. The structure of [bis(dimethylglyoximato)(xanthinato)(tri-*n*-butylphosphine)cobalt(III)]
(ii) Bis(diphenylglyoximato)nickel and palladium iodides, $M(dpg)_2I$, M=Ni, Pd, dpg=diphenylglyoximate
(iii) Reaction of a diphenylacetylene complex of cobalt with isocyanide. A novel metalloring, $C_5H_5Co[(PhC_2Ph)(PhNC)_2]$

Inorg. Chem., Vol. 14, No. 4, April 1975
(i) A cationic nickel nitrosyl bicyclic phosphite complex, $[Ni(P(OCH_2)_3CCH_3)_3NO]BF_4$
(ii) Diiodotris(trimethyl phosphite)nickel(II), $NiI_2[P(OCH_3)_3]_3$
(iii) Acetylene sorption complexes of partially manganese(II)-exchanged and partially cobalt(II)-exchanged forms of zeolite A
(iv) Distortions of the coordination polyhedron in high-spin manganese(III) complexes, I. Structure of azido(acetylacetonato)manganese(III)
(v) Cyanobis(1,10-phenanthroline)copper(II) nitrate monohydrate, $[Cu(N_2C_{12}H_8)_2CN](NO_3).H_2O$
(vi) Cyclomer complexes, IV. Structure of a 1:1 hexahydrate complex of magnesium chloride with 1,4,7,10-tetraoxacyclododecane, $Mg(H_2O)_6Cl_2.C_6H_{16}O_4$
(vii) Tetraphenylphosphonium trithiocyanatomercurate(II), $[(C_6H_5)_4P][Hg(SCN)_3]$
(viii) Dinuclear-bridged d^8 metal complexes, IV. Structure of $[RhCl(CO)(P(CH_3)_2C_6H_5)]_2$
(ix) Hindered ligand systems, VIII. Structure of *cis,cis*-1,3,5-tris(salicylaldimino)cyclohexane cobalt(III), Co((sal)$_3$tach), where ((sal)$_3$tach) = *cis,cis*-1,3,5-(salicylaldimino)cyclohexane
(x) Transition metal hydroborate complexes, VIII. Structure of $\{[(C_6H_5)_3P]_2Cu\}_2B_{10}H_{10}.CHCl_3$

Inorg. Chem., Vol. 14, No. 5, May 1975
(i) 1,2-Dicarba-*closo*-hexaborane(6) and carbahexaborane(7) — a gas-phase electron diffraction study
(ii) $[Pt\{SP(C_2H_5)_2\}P(OC_6H_5)_3]_2$(Pt—Pt), a thiophosphinato-bridged platinum complex
(iii) Di-μ-hydroxo-bis[bis(1,10-phenanthroline)chromium(III)] iodide tetrahydrate, $[Cr(phen)_2OH]_2I_4 \cdot 4H_2O$

(iv) The phenyldiazo group as a bridging ligand. Structure of bis(tetracarbonylphenyldiazomanganese), $[PhN{=}NMn(CO)_4]_2$
(v) Tricarbonyl[(methylsulfidomethyl)phenyl-2-*C*,*S*]-triphenylphosphinemanganese, an ortho-metalated complex of a sulfur donor ligand, $C_6H_4CH_2SCH_3Mn(CO)_3P(C_6H_5)_3$
(vi) Dibenzotellurophene diiodide, $C_{12}H_8TeI_2$
(vii) Trihydrogen diethylenetriaminepentaacetatocuprate(II) monohydrate, $H_3CuDTPA.H_2O$

Inorg. Chem., Vol. 14, No. 6, June 1975
(i) Tetraphenylarsonium tris(benzenedithiolato)tantalate(V), $[(C_6H_5)_4As][Ta(S_2C_6H_4)_3]$
(ii) Triammines of cobalt(III), IV. Structure of the polymerization isomer *trans*-diazidotetraamminecobalt(III) *trans*-tetraazidodiamminecobaltate(III), $[Co(NH_3)_4(N_3)_2][Co(NH_3)_2(N_3)_4]$
(iii) Aryldiazo complexes. Structure of an iron—aryldiazo complex, $[Fe(CO)_2(N_2C_6H_5)(P(C_6H_5)_3)_2][BF_4]$
(iv) A chloride-bridged lanthanide cyclopentadienyl dimer, $[Yb(C_5H_4CH_3)_2Cl]_2$
(v) Structural characterization of complexes of cobalt and nickel in low oxidation states with the tripod ligand, tris(2-diphenylphosphinoethyl)amine, np_3, $[Ni(np_3)]$ and $[CoH(np_3)]$
(vi) Amine—sulfur dioxide complexes. Structure of *N*,*N*,*N*′,*N*′-tetramethyl-*p*-phenylenediamine-bis(sulfur dioxide), $SO_2.N(CH_3)_2(C_6H_4)(CH_3)_2N.SO_2$
(vii) $NH_4ReO_{1.5}F_3.H_2O$

J. Chem. Soc. Chem. Commun., No. 8, 1975
(i) A nickel(II) complex containing a new type of terdentate ligand with a planar NNN donor set and both uni- and bi-dentate nitrato-groups. Structure of 2,6-bis-(phenyliminoethyl)pyridine(dinitrato)nickel(II)
(ii) Tris-(2-aminoethyl)aminoglycinatocobalt(III) ion, $[Co(tren)(gly)]Cl.ClO_4$
(iii) The reaction of hexafluorobut-2-yne and tetrafluoroethylene with π-cyclopentadienyl-iron and -ruthenium complexes. Structures of $[Fe_2(CO)\{C_4(CF_3)_4CO\}(\eta^5\text{-}C_5H_5)_2]$ and $[Fe(COCF_2C_5H_5)(\eta^5\text{-}C_5H_5)]$

J. Chem. Soc. Chem. Commun., No. 9, 1975
(i) A molybdenum nitrosyl complex containing a dihapto phenylhydrazine ligand, $[(\eta^5\text{-}C_5H_5)Mo(NO)I(NH_2NHPh)][BF_4]$
(ii) A trinuclear dinitrogen-bridged complex, *trans*-$[MoCl_4\{(N_2)ReCl(PMe_2Ph)_4\}_2]$
(iii) The potassium salt of the binuclear molybdenum(III) complex, μ-acetato-di-μ-hydroxo-μ(*NN*′)ethylenediaminetetraacetatobis[molybdenum(III)], $[Mo_2(OH)_2(O_2CMe)(C_{10}H_{12}O_8N_2)]$
(iv) A new carbonyl bridging mode: structure of the metal carbonyl derivative $[Mn_2(CO)_5(Ph_2PCH_2PPh_2)_2]$

(v) Two-carbon three-electron ligands. Phosphonium—betaine complexes via nucleophilic attack by phosphites on a σ—π-acetylide di-iron hexacarbonyl derivative, $Fe_2(CO)_6\{C[P(OEt)_3]CPh\}(PPh_2)$

N,N-Dimethylethanolaminogallane dimer, $[Me_2NCH_2OGaH_2]_2$, A and *N,N*-dimethylethanolaminogallium dimethyl, $[Me_2NCH_2CH_2OGaMe_2]_2$, B

A, ($P2_1/c$) $Z = 2$, $R = 3.9\%$ for 1062 reflections. B, ($Pccn$) $Z = 4$, $R = 5.3\%$ based on 1155 reflections. Both structures feature well-separated centrosymmetric dimeric units occurring via the formation of four-membered Ga_2O_2 rings. The five-coordinate gallium atoms have distorted trigonal bipyramidal geometry. Steric interactions between methyl groups in B are believed responsible for the lengthening of the axial Ga—N distance, from 2.279(3) in A to 2.471(4) Å in B. Ga—O(axial) = 2.053(3), A, 2.078(3), B, Ga—O = 1.911(3), A, 1.913(3) Å, B.

S.J. Rettig, A. Storr and J. Trotter, *Can. J. Chem.*, 53 (1975) 58.

K_2MgCl_4, A and Cs_2MgCl_4, B

A, ($I4/mmm$) $Z = 2$, $R = 4.6\%$ for 180 reflections. B, ($Pnma$) $Z = 4$, $R = 7.4\%$ for 1084 reflections. A is isostructural with K_2NiF_4, and contains an infinite two-dimensional array of $MgCl_6$ octahedra sharing edges. The Cs_2MgCl_4 structure contains discrete $MgCl_4^{2-}$ anions.

C.S. Gibbons, V.C. Reinsborough and W.A. Whitla, *Can. J. Chem.*, 53 (1975) 114.

A novel polycyclic Ga,O,N cage compound, $(GaH)_6(GaH_2)_2(\mu_3\text{-}O)_2(\mu_3\text{-}NCH_2CH_2NMe_2)_4(\mu\text{-}NHCH_2CH_2NMe_2)_2$

($P\bar{1}$) $Z = 1$. $R = 3.8\%$ for 3393 reflections. The structure contains the first crystallographic examples of four-membered Ga_2NO and six-membered Ga_3N_2O rings. Three of the Ga atoms are tetrahedrally four-coordinate, the other Ga has a distorted trigonal bipyramidal geometry. Ga (four-coordinate) bond lengths are: Ga—O = 1.869, 1.879(2), Ga—N = 1.945—2.001(3), Ga—H = 1.40—1.52(5) Å, Ga (five-coordinate) Ga—N_{ax} = 2.779(3), Ga—N_{eq} = 1.949, 1.999(3), Ga—O(ax) = 1.960(3) Å.

S.J. Rettig, A. Storr and J. Trotter, *Can. J. Chem.*, 53 (1975) 753.

[Pt(diethylenetriamine)Br]Br

($Pca2_1$) $Z = 4$, $R = 3.9\%$ based on 1435 independent reflections. The coordination around the platinum atom is planar. The crystal consists of alternate layers of $[Pt(dien)Br]^+$ cations and Br^- ions parallel to the *ac* plane. Pt—N = 1.98, 1.96, 2.12 Å.

R. Melanson, J. Hubert and F.D. Rochon, *Can. J. Chem.*, 53 (1975) 1139.

An iron(III) compound of a potentially septadentate $[N_4O_3]$ salicylaldiminato ligand, structure of $[FeC_{27}H_{24}Cl_3N_4O_3].3H_2O$

($Ia3$, No. 206) $R = 8.4\%$ based on 1121 independent reflections. The co-

ordination geometry around Fe^{III} is octahedral (N_3O_3), with a very long Fe···N apical distance, 3.25 Å
N.A. Bailey, D.F. Cook, D. Cummins and E.D. McKenzie, *Inorg. Nucl. Chem. Lett.*, 11 (1975) 51.

A six-coordinate nickel(II) porphyrin, bis(imidazole)nickel(II) tetra(4-*N*-methylpyridyl)porphine, chlorate, $(NiTMPyP)(ClO_4)_4(C_3H_4N_2)_2 \cdot 2C_3H_6O$
($P2_1/c$) $Z = 2$, $R = 8.2\%$ based on 3868 observed reflections. The molecule is six-coordinate. $Ni—N_{porphyrin} = 2.038$ Å. $Ni—N_{imidazole} = 2.160$ Å. Electronic configuration is discussed.
J.F. Kirner, J. Garofalo, Jr. and W.R. Scheidt, *Inorg. Nucl. Chem. Lett.*, 11 (1975) 107.

$CaU_2O_6F_2$
(C_{2mm}) $Z = 4$. The compound is isomorphous with U_3O_8.
G. Fonteneau, H. L'Helgoualch and J. Lucas, *Inorg. Nucl. Chem. Lett.*, 11 (1975) 207.

The zinc(II) derivative of *O*-ethylthioacetoacetate $[Zn(OEtCOCH{=}CSCH_3)_2]$
($P2_1/c$) $Z = 4$, $R = 4.1\%$ based on 2274 independent reflections. The two chelate rings do not have equivalent geometry. The ligand moiety is essentially planar with the zinc atom ~0.1 Å out of this plane. Zn—S(avg) = 2.248(2), Zn—O(avg) = 2.006(4)Å.
B.F. Hoskins and C.D. Pannan, *Inorg. Nucl. Chem. Lett.*, 11 (1975) 405.

High and low-spin iron(III) 1,3-monothiolate complexes: $[Fe(PhCS{=}CHCOPh)_3]$ ($\mu = 5.50$ B.M.), A and $[Fe(PhCS{=}CHCOCF_3)_3]$($\mu = 2.31$ B.M.), B
A ($P2_1/c$) $Z = 4$, $R = 5.3\%$ based on 3995 reflections. B ($P\bar{1}$) $Z = 2$, $R = 5.6\%$ based on 3875 reflections. Each complex has essentially *cis*(facial) octahedral geometry. The iron environment is not precisely symmetrical as evident from the spread of Fe—S and Fe—O bond lengths. In A Fe—S = 2.355(2) — 2.391(2), Fe—O = 1.977—2.002 Å. In B Fe—S = 2.217(2)—2.254(2), Fe—O = 1.930(4)—1.967(4) Å. The change in the Fe—S and Fe—O bond lengths in going from high- to low-spin states is ~0.13 Å and ~0.05 Å respectively.
B.F. Hoskins and C.D. Pannan, *Inorg. Nucl. Chem. Lett.*, 11 (1975) 409.

Chlorodicarbonylpyridyliridium(I) $IrCl(CO)_2(C_5H_5N)$
($P2_1/a$) $Z = 4$, $R = 2.5\%$ based on 1325 reflections. The coordination geometry around Ir is square planar. Ir—Cl = 2.342(3), Ir—CO(avg) = 1.813(14), Ir—N = 2.133(8), Ir···Ir = 3.60 Å.
D.Y. Jeter and E.B. Fleischer, *J. Coord. Chem.*, 4 (1975) 107.